



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-I-A**

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #7**

After review of the Part 70 Administrative Revision 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 Administrative Revision
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 has submitted a Part 70 Administrative Revision request to clarify an oversight in Part 70 Minor Modification A-22-70-H-A, issued May 1, 2013. Amendment A-22-70-H-A was issued to address an alternative sulfur dioxide (SO₂) compliance demonstration method for Boiler 8. The amendment included revising the Part 70 license A-22-70-A-I Conditions 15(A), 15(K), and 15(P) to remove coal and tire derived fuel as licensed fuels and to allow fuel sampling and fuel analysis requirements rather than use of a continuous emission monitor (CEM) to demonstrate compliance with Boiler 8's SO₂ license limits. In addition to Condition 15, Condition 17 of A-22-70-A-I should also have been revised in the May 2013 amendment since Condition 17 sets forth calculation methods for determining annual tons per year facility emissions, and currently includes the use of SO₂ CEM data for Boiler 8. In addition, the New Source Review amendment A-22-77-4-A issued November 29, 2010 required a CO CEM to be installed and operated on Boiler 8. Annual compliance for CO shall be based on CO CEM data. This Part 70 Administrative Revision updates the annual

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

calculation methods for SO₂ and CO in the Part 70 license, as well as deleting mention of Boiler 7 (removed per A-22-77-4-A).

B. Emission Equipment

The emission unit associated with the revisions addressed in this amendment is Boiler 8 (814 MMBtu/hr). The licensed allowed fuels in Boiler 8 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 Administrative Revision may be used for a license change that meets the following criteria, defined in 06-096 CMR 100 (as amended):

- Typographical error corrections;
- Change in the name, address, or phone number of any person or facility identified in the Part 70 license, or a similar administrative change at the Part 70 source;
- Change to more frequent monitoring, reporting, recordkeeping or testing requirements; and
- A change to incorporate the terms and conditions of a major New Source Review (NSR) air license issued pursuant to 06-096 CMR Chapter 115 into a Part 70 license.

Part 70 Air Emission License Regulations, 06-096 CMR 140 (as amended) includes the use of a Part 70 Administrative Revision for the first three items listed above, in addition to the following:

- Allows for a change in ownership or operational control of a source where the licensing authority determines that no other change in the license is necessary, provided that a written agreement containing a specific date for transfer of license responsibility, coverage, and liability between the current and new licensee has been submitted to the licensing authority; or
- Incorporates any other type of change which the Administrator has determined as part of the approved Part 70 program to be similar to those in paragraphs 40 CFR § 70.7(d)(1)(i) through (iv).

The request to clarify the annual compliance demonstration in the Part 70 license is considered a Part 70 Administrative Revision since it is the correction of an omission in a previously issued amendment and the incorporation of portions of a major NSR modification. The requirement to use an SO₂ CEM on Boiler 8 was removed in amendment A-22-70-H-A as a method for calculating short term emissions and the requirement to use it to calculate annual emissions should have also been removed. In addition, the NSR amendment for the biomass project (A-22-77-4-A) required the use of a CO CEMS on Boiler 8. The annual emissions

calculation requirement shall be revised to include the use of the CO CEM data. No equipment modifications or emission limit modifications of Boiler 8 are being requested.

The facility's submittal is classified as a Part 70 Administrative Revision and has been processed under 06-096 CMR 140 (as amended).

II. PART 70 ADMINISTRATIVE REVISION DESCRIPTION

Boiler 8 is an 814 MMBtu/hr multi-fuel boiler subject to 40 CFR Part 60, Subpart D. Verso Bucksport had requested, and was granted through A-22-70-H-A, a change to the licensed SO₂ compliance demonstration for Boiler 8. As allowed in 40 CFR Part 60, Subpart D, once coal and tire derived fuel were removed from the license, SO₂ compliance could be demonstrated through fuel sampling and fuel analyses. Condition (15) in the Part 70 license A-22-70-A-I was revised to reflect this method of compliance demonstration, but Condition (17) was not revised.

Verso Paper has proposed to use a conservative emission SO₂ emission factor, established as 0.015 lb/MMBtu for calculating annual SO₂ emissions from the biomass fuel and natural gas fired in Boiler 8. This factor was derived from CEM data collected January to May 2013, which showed an average SO₂ emission limit below 0.005 lb/MMBtu, with numbers in the range of 0.0004 lb/MMBtu to 0.012 lb/MMBtu.

In addition to the SO₂ calculation update, two other items are addressed. A CO CEM is now required to be operated on Boiler 8 and this CO CEM data shall be used for annual calculations. Also, reference to Boiler 7 shall be removed since the unit is no longer licensed per New Source Review license A-22-77-4-A (issued November 29, 2010).

The following changes shall be made to Condition 17(B) in A-22-70-A-I to align the annual compliance requirements with changes already licensed:

(17)Annual Emission Limits and Compliance Demonstration

.....

- B. In order to demonstrate compliance with the annual emission limitations in tons per year, on a 12 month rolling total basis from Boilers 5, 6, 7, and 8 and the gas turbine, ~~International Paper~~ Verso Paper shall maintain the following records and calculations:

1. Fuel Use Records

- (a) For Boilers 5, ~~and 6, and 7~~, monthly fuel use records shall be maintained, including gallons of fuel oil and specification and off-specification waste oil.
- (b) For Boiler 8, monthly fuel use records shall be maintained including gallons of fuel oil, specification and off-specification waste oil, ~~tons of coal~~, scf of natural gas, and tons of biomass ~~tons of sludge, and tons of tire chips~~ utilized.
- (c) For the turbine, monthly fuel use records for natural gas and fuel oil shall be maintained. Also, the number of hours the turbine fires on gas and fuel oil shall be recorded.
- (d) The fuel oil records shall indicate the percent (%) sulfur content of the fuel by weight (demonstrated by the purchase receipts and/or fuel analysis from the supplier).

[~~MEDEP Chapter 06-096~~ CMR 140, A-22-77-4-A, and A-22-70-H-A]

2. Calculation Records

~~International Paper~~ Verso Paper shall calculate PM, PM₁₀, SO₂, NO_x, CO, and VOC tons on monthly and 12 month rolling total basis in accordance with the following:

- (a) The following heat content values shall be used:

Type of Fuel	Heat Content	Moisture Basis
Fuel Oil	0.15 MMBtu/gal *	n/a
Coal	13,000 Btu/lb	n/a
Biomass	9 MMBtu/ton, as fired	50%
Tire Chips	31 MMBtu/ton	n/a
Natural Gas	1,000 Btu/scf	n/a

* Heat content of #6 fuel oil is listed. This number can be adjusted for other types of fuel oil (i.e. - #2 fuel oil is 0.14 MMBtu/hr).

Note: Sludge values will be determined and agreed upon by the Department and ~~International Paper~~ Verso Paper.

- (b) Monthly heat input values (MMBtu/month) shall be calculated by multiplying the monthly fuel consumption values for each boiler by the heat content of the fuel given in the above table. For Boiler 8, total heat input shall be determined by summing the individual heat input of each fuel burned in the boiler during the month.
- (c) PM and PM₁₀ tons/year Emission Calculations

For Boilers 5, 6, 7, and 8, ~~International Paper~~ Verso Paper shall calculate PM and PM₁₀ emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For the turbine, ~~International Paper~~ Verso Paper shall calculate PM and PM₁₀ emissions by multiplying the licensed lb/hr emission limits for gas and oil by the number of hours that the turbine fires each fuel in a given month.

(d) SO₂ tons/year Emission Calculations

For Boilers 5, 6, ~~and 7,~~ and 8 when firing fuel oil ~~International Paper~~ Verso Paper shall calculate the SO₂ emissions by using a mass balance to calculate lb SO₂/MMBtu and then multiplying the lb SO₂/MMBtu by the monthly heat input (MMBtu/month) supplied to each boiler. The mass balance, using the SO₂ to sulfur ratio, the density of #6 fuel, and the heat content of the fuel, is as follows:
$$(x\% \text{ sulfur}/100 \text{ lb fuel})(64 \text{ lb SO}_2/32 \text{ lb S})(7.88 \text{ lb fuel/gal})(\text{gal}/0.15 \text{ MMBtu})$$
$$= \text{lb SO}_2/\text{MMBtu}$$

Note: The density of the fuel and the heat content may be adjusted if #6 fuel oil is not being used (i.e. – density of #2 fuel oil is 7.05 lb fuel/gal)

For Boiler 8 when firing biomass and/or natural gas, ~~International Paper~~ Verso Paper shall calculate SO₂ emissions by using a conservative factor of 0.015 lb/MMBtu. ~~CEMS data that provides a daily average emission rate expressed in lb/MMBtu. Daily average emission rates shall be used to calculate a monthly average emission rate.~~ The monthly average emission rate factor shall be multiplied by the total monthly heat input, MMBtu/month, from the biomass and natural gas fuels fired in Boiler 8 to obtain monthly SO₂ emissions. An SO₂ emission factor other than 0.015 lb/MMBtu for biomass and natural gas may be used upon Department approval.

For the turbine, ~~International Paper~~ Verso Paper shall calculate SO₂ emissions by methods allowed under 40 CFR Part 75, Subpart B. [~~MEDEP, Chapter 06-096 CMR~~ 140 and 40 CFR Part 75].

(e) NO_x tons/year Emission Calculations

For Boilers 5, ~~and 6, and 7,~~ ~~International Paper~~ Verso Paper shall calculate NO_x emissions by multiplying the following lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler:

Boiler #5 0.36 lb/MMBtu
Boiler #6 0.27 lb/MMBtu
~~Boiler #7 0.27 lb/MMBtu~~

For Boiler 8, ~~International Paper~~ Verso Paper shall calculate NO_x emissions by using CEMS data that provides a daily average emission rate expressed in lb/MMBtu. Daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, in Boiler 8 to obtain monthly emissions.

For the turbine, ~~International Paper~~ Verso Paper shall calculate NO_x emissions by using CEMS data to determine NO_x ppm emissions from the turbine on an hourly basis. Daily lb/MMBtu emission rates will be calculated from the CEM data by use of a fuel factor (F factor). These daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, to the turbine to obtain the actual monthly NO_x mass emissions.

(f) CO tons/year Emission Calculations

For Boilers 5, ~~and 6, 7, and 8~~, ~~International Paper~~ Verso Paper shall calculate CO emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For Boiler 8, Verso Paper shall calculate CO emissions by using CEMS data that provides a daily average emission rate expressed in lb/MMBtu. Daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, in Boiler 8 to obtain monthly emissions.

For the turbine, ~~International Paper~~ Verso Paper shall calculate CO emissions by using CEMS data to determine CO ppm emissions from the turbine on an hourly basis. Daily lb/MMBtu emission rates will be calculated from the CEM data by use of a fuel factor (F factor). These daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, to the turbine to obtain the actual monthly CO mass emissions.

(g) VOC tons/year Emission Calculations

For Boilers 5, 6, 7, and 8, ~~International Paper~~ Verso Paper shall calculate VOC emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For the turbine, ~~International Paper~~ Verso Paper shall calculate VOC emissions by multiplying the licensed lb/hr emission limits for gas and oil by the number of hours that the turbine fires each fuel in a given month.

- (h) Missing data estimation procedures found in 40 CFR Part 75, Appendix C may be used for missing data periods with respect to NO_x and SO₂ CO emissions. Any other missing data estimation procedures approved by the Department may also be used.

~~[MEDEP Chapter 06-096 CMR 140, A-22-77-4-A, and A-22-70-H-A]~~

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-I-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, A-22-70-G-A, A-22-70-H-A, A-22-70-J-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 Condition 17(B) in Air Emission License A-22-70-A-I:

(17) Annual Emission Limits and Compliance Demonstration

B. In order to demonstrate compliance with the annual emission limitations in tons per year, on a 12 month rolling total basis from Boilers 5, 6, and 8 and the gas turbine, Verso Paper shall maintain the following records and calculations:

1. Fuel Use Records

- (a) For Boilers 5, and 6, monthly fuel use records shall be maintained, including gallons of fuel oil and specification and off-specification waste oil.
- (b) For Boiler 8, monthly fuel use records shall be maintained including gallons of fuel oil, specification and off-specification waste oil, scf of natural gas, and tons of biomass utilized.
- (c) For the turbine, monthly fuel use records for natural gas and fuel oil shall be maintained. Also, the number of hours the turbine fires on gas and fuel oil shall be recorded.
- (d) The fuel oil records shall indicate the percent (%) sulfur content of the fuel by weight (demonstrated by the purchase receipts and/or fuel analysis from the supplier).

[06-096 CMR140, A-22-77-4-A, and A-22-70-H-A]

2. Calculation Records

Verso Paper shall calculate PM, PM₁₀, SO₂, NO_x, CO, and VOC tons on monthly and 12 month rolling total basis in accordance with the following:

- (a) The following heat content values shall be used:

Type of Fuel	Heat Content	Moisture Basis
Fuel Oil	0.15 MMBtu/gal *	n/a
Biomass	9 MMBtu/ton, as fired	50%
Natural Gas	1,000 Btu/scf	n/a

- * Heat content of #6 fuel oil is listed. This number can be adjusted for other types of fuel oil (i.e. - #2 fuel oil is 0.14 MMBtu/hr).

Note: Sludge values will be determined and agreed upon by the Department and Verso Paper.

- (b) Monthly heat input values (MMBtu/month) shall be calculated by multiplying the monthly fuel consumption values for each boiler by the heat content of the fuel given in the above table. For Boiler 8, total heat input shall be determined by summing the individual heat input of each fuel burned in the boiler during the month.

- (c) PM and PM₁₀ tons/year Emission Calculations

For Boilers 5, 6, and 8, Verso Paper shall calculate PM and PM₁₀ emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For the turbine, Verso Paper shall calculate PM and PM₁₀ emissions by multiplying the licensed lb/hr emission limits for gas and oil by the number of hours that the turbine fires each fuel in a given month.

- (d) SO₂ tons/year Emission Calculations

For Boilers 5, 6, and 8 when firing fuel oil Verso Paper shall calculate the SO₂ emissions by using a mass balance to calculate lb SO₂/MMBtu and then multiplying the lb SO₂/MMBtu by the monthly heat input (MMBtu/month) supplied to each boiler. The mass balance, using the SO₂ to sulfur ratio, the density of #6 fuel, and the heat content of the fuel, is as follows:

$$(x\% \text{ sulfur}/100 \text{ lb fuel})(64 \text{ lb SO}_2/32 \text{ lb S})(7.88 \text{ lb fuel/gal})(\text{gal}/0.15 \text{ MMBtu}) \\ = \text{lb SO}_2/\text{MMBtu}$$

Note: The density of the fuel and the heat content may be adjusted if #6 fuel oil is not being used (i.e. – density of #2 fuel oil is 7.05 lb fuel/gal)

For Boiler 8 when firing biomass and/or natural gas, Verso Paper shall calculate SO₂ emissions by using a factor of 0.015 lb/MMBtu. The emission factor shall be multiplied by the total monthly heat input, MMBtu/month, from the biomass and natural gas fuels fired in Boiler 8 to obtain monthly SO₂ emissions. An SO₂ emission factor other than 0.015 lb/MMBtu for biomass and natural gas may be used upon Department approval.

For the turbine, Verso Paper shall calculate SO₂ emissions by methods allowed under 40 CFR Part 75, Subpart B. [06-096 CMR 140 and 40 CFR Part 75].

(e) NO_x tons/year Emission Calculations

For Boilers 5 and 6, Verso Paper shall calculate NO_x emissions by multiplying the following lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler:

Boiler #5 0.36 lb/MMBtu

Boiler #6 0.27 lb/MMBtu

For Boiler 8, Verso Paper shall calculate NO_x emissions by using CEMS data that provides a daily average emission rate expressed in lb/MMBtu. Daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, in Boiler 8 to obtain monthly emissions.

For the turbine, Verso Paper shall calculate NO_x emissions by using CEMS data to determine NO_x ppm emissions from the turbine on an hourly basis. Daily lb/MMBtu emission rates will be calculated from the CEM data by use of a fuel factor (F factor). These daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, to the turbine to obtain the actual monthly NO_x mass emissions.

(f) CO tons/year Emission Calculations

For Boilers 5 and 6, Verso Paper shall calculate CO emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For Boiler 8, Verso Paper shall calculate CO emissions by using CEMS data that provides a daily average emission rate expressed in lb/MMBtu. Daily average emission rates shall be used to calculate a monthly average emission rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, in Boiler 8 to obtain monthly emissions.

For the turbine, Verso Paper shall calculate CO emissions by using CEMS data to determine CO ppm emissions from the turbine on an hourly basis. Daily lb/MMBtu emission rates will be calculated from the CEM data by use of a fuel factor (F factor). These daily average emission rates shall be used to calculate a monthly average emission

rate. The monthly average emission rate shall be multiplied by the total monthly heat input, MMBtu/month, to the turbine to obtain the actual monthly CO mass emissions.

(g) VOC tons/year Emission Calculations

For Boilers 5, 6, and 8, Verso Paper shall calculate VOC emissions by multiplying the licensed lb/MMBtu emission limit for each boiler by the monthly heat input (MMBtu/month) supplied to each boiler.

For the turbine, Verso Paper shall calculate VOC emissions by multiplying the licensed lb/hr emission limits for gas and oil by the number of hours that the turbine fires each fuel in a given month.

(h) Missing data estimation procedures found in 40 CFR Part 75, Appendix C may be used for missing data periods with respect to NO_x and CO emissions. Any other missing data estimation procedures approved by the Department may also be used.

[06-096 CMR 140, A-22-77-4-A, and A-22-70-H-A]

DONE AND DATED IN AUGUSTA, MAINE THIS 22 DAY OF November, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Core for
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: July 31, 2013

Date of application acceptance: July 31, 2013

Date filed with the Board of Environmental Protection:

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

