

**Rumford Paper Company
Oxford County
Rumford, Maine
A-214-77-5-A**

**Departmental
Findings of Fact and Order
New Source Review
Amendment #4**

After review of the air emissions license amendment 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 Department finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Rumford Paper Company
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	
NATURE OF BUSINESS	Pulp & Paper Manufacturer
FACILITY LOCATION	Rumford, Maine
NSR AMENDMENT ISSUANCE DATE	February 29, 2008

B. Amendment Description

Rumford Paper Company (the Mill) has applied to amend their New Source Review (NSR) license to address the following:

1. The SO₂ emission limits for C Recovery when the smelt bed is not fully established;
2. The SO₂ emission limits for Boilers #3 and #5 when firing only natural gas;
3. The opacity limits for C Recovery during startup or shutdown of the F.D. and I.D. fans;
4. The opacity limit on C Recovery when the boiler is shut down;
5. Clarification of the definition of different averaging times;
6. Addition of a lift pump emergency engine.

C. Application Classification

The application for the Mill does not violate any applicable federal or state requirements. This application does seek to modify a Best Available Control Technology (BACT) analysis performed per New Source Review.

Additionally, the modification of a major source is considered a major modification based on whether or not expected emissions increases exceed the “Significant Emission Increase Levels” as given in *Definitions Regulation*, 06-096 CMR 100 (last amended December 1, 2005).

The emission increases are determined by subtracting the average actual emissions of the two calendar years preceding the modification from the maximum future license allowed emissions for any equipment affected by the change. In this case, the Mill is proposing the installation of new equipment (the lift pump emergency engine) and therefore there were no emissions from previous years and the permitted emissions from these units are compared directly to the Significance Level. The Department does not expect any of the other changes proposed to result in any increase in actual emissions.

<u>Pollutant</u>	<u>New Equipment (TPY)</u>	<u>Sig. Level</u>
PM	0.1	25
PM ₁₀	0.1	15
SO ₂	0.1	40
NO _x	2.1	40
CO	1.1	100
VOC	2.1	40

Therefore, this modification is determined to be a minor modification and has been processed as such.

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 06-096 CMR 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. C Recovery SO₂ Emission Limits

Currently, the SO₂ emission limit for C Recovery during normal operation is 206.3 lb/hr based on a 3-hour block average. However, when firing only oil, a higher SO₂ emission limit of 650 lb/hr based on a weighted 3-hour block average is permitted. This emission increase is offset by alternative conditions for Boilers #3, #5, #6, and #7 which provide for lower SO₂ emission limits during the same time period.

These conditions were intended to address the unavoidable higher SO₂ emissions from C Recovery when the smelt bed is low. However, during startup, before the smelt bed is established, and during shutdown, when the smelt bed is diminished, a similar situation occurs. In addition, a situation of a poorly established smelt bed also occurs, similar to startup and shutdown, when liquor firing must be cutback temporarily due to unplanned kraft mill production disruptions that are restored before the boiler must be completely shutdown.

The Mill has requested that the alternative limits be on a time-weighted basis due to the nature of the emissions from the units that must be balanced. The emissions from the Recovery Boiler can shift abruptly and materially over the normal 206.3 lb/hr limit during the conditions that this modification addresses. If this process change happens with less than an hour left in the 3-hour block, the Recovery Boiler SO₂ block can readily exceed the normal operating limit. In contrast, the offsetting reductions in the cogen boiler emissions do not reduce as abruptly and as dramatically. If given less than an hour in a 3-hour block to reduce emissions to less than the 250 lb/hr required by the alternate emissions limit for the cogen boilers, the cogen boilers will often be unable to reduce the 3-hour average sufficiently before the end of the block. A time-weighted average basis provides the transition time to obtain the offsetting reductions, is similar to what is done with the current license, and is reasonable for evaluating compliance with the alternate limits because it transitions the lower and higher limits in at the same time.

The Mill proposes to allow operating at the alternative SO₂ limits for up to 300 hours per year. This limit includes periods of startup, shutdown, and malfunction. The Mill has modeled this scenario in the past and demonstrated that this alternative operating scenario meets Maine Ambient Air Quality Standards. This change will not increase actual annual emissions of any regulated air pollutant as there will be no change in the actual operation of the equipment.

C. SO₂ Emission Limits for Boilers #3 and #5

The Mill's air emission license establishes an emission limit for SO₂ of 0.26 lb/MMBtu when Boilers #3 and #5 are firing a combination of fuels and 0.01 lb/MMBtu when these boilers are firing only natural gas. At the time, it was assumed that the sulfur content of natural gas was negligible and the emission limit was intended as a placeholder.

CEMS data has demonstrated that for some low load operating scenarios it is not always possible to meet the listed emission limit when firing only natural gas. The Mill has proposed removing the 0.01 lb/MMBtu SO₂ emission limit. This change is expected to reduce annual emissions of regulated air pollutants as it will allow firing of natural gas in lieu of "dirtier" fuels at low load conditions.

D. C Recovery Opacity Limits

Particulate emissions from C Recovery are controlled by the operation of an electrostatic precipitator (ESP). Safety interlocks are in place to prevent operating of the ESP when explosive gases may be present in the boiler to prevent the ESP from sparking an explosion. In particular, a safety interlock prohibits the operation of the ESP until after the Primary F.D. fan, Secondary F.D. fan, and I.D. fan have been in operation for long enough to purge potentially explosive gases from the boiler. Safety interlocks are also in place to prevent the operation of the ESP upon the tripping out or stopping of the F.D. and I.D. fans.

Excess opacity emissions following the start of the C Recovery F.D. and I.D. fans are unavoidable because the ESP cannot be safely operated. The Mill has proposed including periods of startup and shutdown of the F.D. and I.D. fans to the list of activities that are exempt from the opacity limitation. This change will not increase actual annual emissions of any regulated pollutant as there will be no change in the actual operation of the equipment.

E. Opacity When C Recovery is Shutdown

The Mill's air emission license currently limits C Recovery to an opacity of 60% when maintenance is being performed on either precipitator chamber or when C Recovery has completely shut down operations. The Mill has proposed removing the part of the opacity limitation that applies when the boiler is not in operation.

F. Clarification of Averaging Times

The Mill has proposed adding conditions that clarify the definitions used for compliance when any emission source is not operated for the full averaging period. Definitions for "24-hour block average," "12-hour block average," and "30-day rolling average" are included in the Conditions section of this amendment.

G. Lift Pump Emergency Engine

The Mill proposes to install a 2007 Caterpillar Model C15 Lift Pump Emergency Engine. This engine is part of a generator set that will power the lift pump in case of emergency.

Since the Mill commenced construction of the Lift Pump Emergency Engine after July 11, 2005 and the engine was manufactured after April 1, 2006, this engine is subject to New Source Performance Standards (NSPS) Subpart IIII for Stationary Compression Ignition Internal Combustion Engines.

A summary of the BACT analysis for the Lift Pump Emergency Engine is the following:

1. The Lift Pump Emergency Engine shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm.
2. Beginning October 1, 2010 the Lift Pump Emergency Engine shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.
3. The Lift Pump Emergency Engine shall be limited to 100 hr/year of operation for the purposes of maintenance checks and readiness testing.
4. The Lift Pump Emergency Engine shall be limited to 500 hr/yr of total operation based on a 12 month rolling total.
5. The Lift Pump Emergency Engine shall be equipped with a non-resettable hour meter.
6. PM, CO, and NO_x/VOC emission limits are based on 40 CFR, Part 60, Subpart IIII.
7. Visible emissions are regulated by 06-096 CMR 101 and 40 CFR, Part 60.4204(b).

H. Lift Pump Emergency Engine Streamlining

1. Opacity
Visible Emission Regulation, 06-096 CRM 101 (last amended May 18, 2003), § 2(B)(1)(d) and NSPS 40 CFR, Part 60, Subpart IIII both contain applicable opacity standards. **No streamlining is requested.**
2. PM
 - a. *Fuel Burning Equipment Particulate Emission Standard*, 06-096 CMR 103 (last amended November 3, 1990), Section 2(B)(1)(a) contains an applicable PM lb/MMBtu emission standard.
 - b. BACT also establishes an applicable PM lb/MMBtu emission limit.

The Mill accepts streamlining for the PM lb/MMBtu standard. The BACT limit is the most stringent and is therefore the only PM lb/MMBtu emission limit included in this license.

- c. NSPS 40 CFR, Part 60, Subpart IIII establishes the only applicable PM g/kW-hr emission standard. **No streamlining is requested.**
 - d. BACT establishes the only applicable PM lb/hr emission limit. **No streamlining is requested.**
3. PM₁₀
BACT establishes the only applicable PM₁₀ lb/hr emission limit. **No streamlining is requested.**
4. SO₂
 - a. *Low Sulfur* Fuel, 06-096 CMR 106 (last amended June 9, 1999), Section 2(A)(2) contains an applicable fuel sulfur content standard.
 - b. NSPS 40 CFR, Part 60, Subpart IIII contains an applicable fuel sulfur content standard.

The Mill accepts streamlining for the fuel sulfur content standard. The NSPS standard is the most stringent and is therefore the only sulfur content standard included in this license.

 - c. BACT establishes an applicable SO₂ lb/hr emission limit. **No streamlining is requested.**
5. NO_x and VOC
 - a. NSPS 40 CFR, Part 60, Subpart IIII contains an applicable combined NO_x and VOC g/kW-hr emission standard. **No streamlining is requested.**
 - b. BACT establishes the only applicable NO_x and VOC lb/hr emission limit. **No streamlining is requested.**
6. CO
 - a. NSPS 40 CFR, Part 60, Subpart IIII contains an applicable combined CO g/kW-hr emission standard. **No streamlining is requested.**
 - b. BACT establishes the only applicable CO lb/hr emission limit. **No streamlining is requested.**

I. Annual Emissions

Total Allowable Annual Emission for the Facility
(used to calculate the annual license fee)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Cl ₂	ClO ₂
Power Boiler #3	65.7	65.7	341.6	525.6	262.8	19.7	-	-
Power Boiler #5	65.7	65.7	341.6	525.6	262.8	19.7	-	-
Power Boiler #6	82.8	82.8	772.6	1,655.6	1,090.0	22.1	-	-
Power Boiler #7	82.8	82.8	772.6	1,655.6	1,090.0	22.1	-	-
Lime Kiln	105.1	105.1	100.7	227.8	170.8	8.8	-	-
Recovery Boiler	379.7	284.7	903.6	941.7	972.4	16.2	-	-
Smelt Tank C	70.1	69.2	24.1	-	-	-	-	-
Dryers	15.2	15.2	0.1	19.6	2.7	0.7	-	-
Air Heaters	2.0	2.0	0.1	40.6	40.6	2.2	-	-
Cogen Emerg Gen	0.1	0.1	0.1	1.6	0.4	0.1	-	-
R15 Emerg Gen	0.1	0.1	0.1	1.4	0.3	0.1	-	-
Mill Emerg Gen	0.2	0.2	0.1	4.4	1.2	0.1	-	-
Fire Pump	0.1	0.1	0.1	2.5	0.5	0.2	-	-
Lift Pump Engine	0.1	0.1	0.1	2.1	1.1	2.1	-	-
Bleach Plant	-	-	-	-	-	-	13.1	13.1
Total TPY	869.7	773.8	3,257.5	5,577.1	3895.6	114.1	13.1	13.1

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-214-77-5-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.

NSR Condition (19)(G) of Air Emission License A-214-71-S-A/R is deleted.

NSR Condition (20)(E) of Air Emission License A-214-71-S-A/R is deleted.

The following NSR Condition shall replace Condition (24)(C) of NSR Air Emission License A-214-77-4-A and will replace Condition (24)(C) of Air Emission Licenses A-214-70-A-I and A-214-70-F-A when amended:

(2) Boiler #3 and #5 shall each not exceed the following emission limits:

Pollutant	lb/MMBtu (each boiler)	Fuel	Ave Time
PM	0.05	any combination of oil, natural gas, NCGs, SOGs, HVLCs	--
	0.08	oil with any two or more of NCGs, SOGs, HVLC	
	0.03	natural gas firing only	
PM ₁₀	0.05	any combination of oil, natural gas, NCGs, SOGs, HVLCs	--
	0.08	oil with any two or more of NCGs, SOGs, HVLC	
	0.03	natural gas firing only	
SO ₂	0.26	any combination	24-hr block
NO _x	0.40	any combination	30-day rolling
	0.20	natural gas firing only	
CO	0.20	any combination	--
VOC	0.015	any combination	--

Pollutant	lb/hour (each boiler)	Fuel	Ave Time
PM	15.0	any combination of oil, natural gas, NCGs, SOGs, HVLCs	--
	24.0	oil with any two or more of NCGs, SOGs, HVLCs	
PM ₁₀	15.0	any combination of oil, natural gas, NCGs, SOGs, HVLCs	--
	24.0	oil with any two or more NCGs, SOGs, HVLCs	
SO ₂	78.0 ^a	any combo	3-hr block
NO _x	120.0	any combo	30-day rolling
CO	60.0	any combo	--
VOC	4.5	any combo	--

- a. When Boiler #6 and/or #7 is firing only fuel oil or performing a gravimetric calibration and SO₂ emissions are above 250.0 lb/hr, SO₂ emissions from the common stack for Boilers #3 and #5 shall be limited to a total of 60.0 lb/hr. The Mill shall keep records of the dates and times of all gravimetric calibrations and the date and time of any firing of only fuel oil in Boilers #6 and #7.

[06-096 CMR 115 and 140, BPT]

The following NSR Condition will replace Condition (28)(B) of Air Emission License A-214-70-A-I when amended:

(3) Recovery Boiler C shall not exceed the following emission limits:

Pollutant	ppmv	Ave Time	lb/hour	Ave Time
PM	--		86.7	
PM ₁₀	--		65.0	
SO ₂	100 ^c	30-day rolling	206.3 ^{a,b}	3-hr block
NO _x	110	24-hr block	215.0	24-hr block
CO	--		222.0	
VOC	--		3.7	
TRS	5	12-hr block	--	

- a. When Boiler #6 and/or #7 are firing only fuel oil or performing a gravimetric calibration, Recovery Boiler C shall be limited to 206.3 lb/hr of SO₂ emissions. The Mill shall keep records of the dates and times of all gravimetric calibrations and the date and time of any firing of only fuel oil in Boilers #6 and #7.
- b. See Condition (5) of this air emission license.
- c. When the Recovery Boiler C is firing only fuel oil, the monitored SO₂ ppmv emissions during that period shall not be included in determining the 30-day rolling average SO₂ ppmv emission rate.

[06-096 CMR 115 and 140, BPT]

The following NSR Condition will replace Condition (28)(H) of Air Emission License A-214-70-A-I when amended:

(4) Except for periods of maintenance, periods of shutdown, and periods following the startup and shutdown of the F.D. and I.D. fans, the Mill shall operate Recovery Boiler C such that the visible emissions from the stack do not exceed 30% opacity on a six (6) minute block average basis except for no more than one (1) six (6) minute block average in a 3-hour period.

When Recovery Boiler C is operating and maintenance is being performed on either precipitator chamber, visible emissions from the stack shall not exceed 60% on a six (6) minute block average.

[06-096 CMR 115 and 140, BPT]

The following are New Conditions:

(5) Alternative SO₂ Emission Limits

As an alternative to the SO₂ lb/hr emission limit listed in Condition (3) of this air emission license, the Mill shall be determined to be in compliance when the Recovery Boiler exceeds 206.3 lb/hr if all of the following requirements are met:

- A. SO₂ emissions from Recovery Boiler C shall not exceed 650.0 lb/hr on a time-weighted 3-hour block average basis.
- B. SO₂ emissions from Boilers #6 and #7 combined shall not exceed 250.0 lb/hr on a time-weighted 3-hour block average basis.
- C. SO₂ emissions from Boilers #3 and #5 combined shall not exceed 60.0 lb/hr on a time-weighted 3-hour block average basis.
- D. The Mill shall not utilize these limits to demonstrate compliance for more than 300 hours in any calendar year and shall report the dates, times, and number of 3-hour blocks when these limits were utilized each quarter.

[06-096 CMR 115, BPT]

(6) Definition of Averaging Times

- A. A 24-hour block average shall be calculated as the arithmetic average of not more than 24 one-hour block periods. Only one 24-hour block average shall be calculated for one day, beginning at midnight. A valid 24-hour block average for concentration (ppmv) or lb/MMBtu emissions must contain at least 12 valid hours during which operation occurred with hours in which no operation occurs excluded from the 24-hour block average calculation.

[06-096 CMR 115, BPT]

- B. A 12-hour block average shall be calculated as the arithmetic average of not more than 12 one-hour block periods. Only two 12-hour block averages shall be calculated for one day, beginning at midnight. A valid 12-hour block average for concentration (ppmv) or lb/MMBtu emissions must contain at least 6 valid hours during which operation occurred with hours in which no operation occurs excluded from the 12-hour block average calculation.

[06-096 CMR 115, BPT]

- C. A “30 day rolling average” refers to the last 30 steam generating unit operating days as described in 40 CFR, Part 60, Subpart Db.

[06-096 CMR 115, BPT]

(7) Lift Pump Emergency Engine

- A. The Mill shall limit the Lift Pump Emergency Engine to 100 hr/yr of operation for the purposes of maintenance checks and readiness testing (based on a 12 month rolling total). [40 CFR, Part 60.4211(e)]
- B. The Mill shall limit the Lift Pump Emergency Engine to 500 hr/year for total operation (based on a 12 month rolling total). [06-096 CMR 115 BACT]
- C. An non-resettable hour meter shall be maintained and operated on the Lift Pump Emergency Engine. [40 CFR, Part 60.4209(a)]
- D. The Lift Pump Emergency Engine shall only be operated for maintenance purposes, readiness checks, and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The Lift Pump Emergency Engine shall not to be used for prime power when reliable power is available. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BACT]
- E. The Mill shall operate the Lift Pump Emergency Engine according to the manufacturer's written instructions. The Mill may only change those settings that are permitted by the manufacturer. [40 CFR, Part 60.4211(a)]
- F. The Lift Pump Emergency Engine shall fire diesel fuel with a sulfur content not to exceed 500 ppm. [40 CFR, Part 60.4207(a)]
- G. Beginning October 1, 2010 the Lift Pump Emergency Engine shall fire diesel fuel with a sulfur content not to exceed 15 ppm. [40 CFR, Part 60.4207(b)]
- H. Compliance with the fuel sulfur limits shall be based on fuel records from the supplier showing the sulfur content of the fuel. [06-096 CMR 115, BACT]
- I. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Lift Pump Engine	PM	0.05	06-096 CMR 115, BACT

J. Emissions shall not exceed the following [40 CFR, Part 60.4205(b)]:

Emission Unit	PM (g/kW-hr)	NO _x + VOC (g/kW-hr)	CO (g/kW-hr)
Lift Pump Engine	0.20	6.4	3.5

K. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x + VOC (lb/hr)	CO (lb/hr)
Lift Pump Engine	0.26	0.26	0.26	8.20	4.48

L. Visible emissions from the Lift Pump Emergency Engine shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

M. Visible emissions from the Lift Pump Emergency Engine shall not exceed an opacity of:

1. 20% during the acceleration mode;
 2. 15% during the lugging mode; and
 3. 50% during the peaks in either the acceleration or lugging modes.
- [40 CFR, Part 60.4204(b)]

DONE AND DATED IN AUGUSTA, MAINE THIS 29th DAY OF FEBRUARY, 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 12/20/07

Date of application acceptance: 12/26/07

Date filed with the Board of Environmental Protection: March 3, 2008

This Order prepared by Lynn Ross, Bureau of Air Quality.