

LINCOLN PAPER AND TISSUE CO., INC.) DEPARTMENTAL
PENOBSCOT COUNTY) FINDING OF FACT AND ORDER
LINCOLN, MAINE) PART 70 AIR EMISSION LICENSE
A-177-70-F-A) AMENDMENT #4

After review of the air emissions license application, staff investigation reports and other documents in the applicant’s file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Sections 344, 590, and Chapters 115 and 140, the Department finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Lincoln Paper and Tissue (LPT)
LICENSE NUMBER	A-177-70-F-A
LICENSE TYPE	Part 70 Minor Modification
NAICS CODE	322121
NATURE OF BUSINESS	Pulp and Paper Mill
FACILITY LOCATION	Lincoln, Maine
DATE OF INITIAL LICENSE ISSUANCE	October 22, 2002
DATE OF AMENDMENT # 4 ISSUANCE	June 9, 2005
LICENSE EXPIRATION DATE	October 22, 2007

Lincoln Paper and Tissue Company, Inc. (LPT) operates a fully integrated pulp and paper mill in Lincoln, Maine. A Part 70 Air Emission License # A-177-70-A-I was issued on October 22, 2002 permitting the operation of emission sources at the mill. On May 20, 2004, the Part 70 Air license and pending applications were transferred to LPT by Department Order.

LPT seeks a Part 70 Minor Modification to its Part 70 Air Emission License to license the construction and operation of a new tissue machine, designated #8 Tissue Machine.

B. Application Classification

A new emission unit at a major source is considered a major modification based on whether or not expected emission increases exceed the “Significant Emission Increase Levels” as defined in the Department’s regulations. The emissions increases for a new source are determined by comparing the net change in emissions to significant emission levels, as follows:

<u>Pollutant</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	2.7	25
PM ₁₀	2.7	15
SO ₂	39.0	40
NO _x	29.4	40
CO	3.9	100
VOC	9.5	40

Therefore, the modification is considered minor and will be processed as such. Since all emissions associated with this modification will increase, all criteria pollutants are subject to Best Available Control Technology (BACT) requirements. There is no request to increase facility-wide licensed allowed emissions.

II. DESCRIPTION OF PART 70 MINOR MODIFICATION AND BACT

A. Tissue Machine Project Description

Lincoln Paper and Tissue, LLC intends to purchase a new tissue machine (#8 TM) from Metso Paper. The #8 TM will be designed to run specialty tissue products consisting of four primary grades. The grade structures will be essentially the same product lines that LPT produces on its existing two tissue machines and raw materials and chemistry will be consistent with current operations. Depending on the grade, the capacity of the #8 TM will range from 97 to 117 tons per day of finished product.

The #8 TM will have a two-burner oil fired drying hood. Each burner will have a maximum heat input capacity of 12.5 MMBtu/hr. The burners will fire #2 low sulfur oil with a maximum fuel sulfur content of 0.35% by weight and exhaust through a single 46-inch diameter stack.

B. #8 Tissue Machine Emissions Description

Potential annual emissions from the two 12.5 MMBtu/hr oil burners alone conservatively assume 100% annual uptime on the tissue machine and firing of the hood at the maximum rated heat input capacity. The emissions are based on AP-42 factors with the exception of NOx emissions which is provided by the burner manufacturer. The hood is fired on low sulfur #2 fuel oil with a maximum sulfur content of 0.35% by weight.

Pollutant	Tons/year
PM	1.6
PM ₁₀	1.6
SO ₂	39.0
NO _x	29.4
CO	3.9
VOC	0.2

#8 TM Operational Emissions

In addition to the oil burner emissions, LPT has estimated other potential emissions from the tissue making process on the #8 Tissue Machine. The pollutants of interest are particulate and volatile organic compounds (VOC) which could be emitted through the dryer hood. To estimate particulate emissions, LPT relied on factors for particulate emissions of paper/tissue machines available through NCASI. For calculations of VOC emissions, LPT provided information by the chemical manufacturers of the products Lincoln uses on its tissue machines and on actual laboratory testing of other products to be used on the new machine. NCASI also has emission factors for VOC emissions from paper machines associated with the pulp. The estimated additional PM and VOC emissions from the tissue manufacturing process on the #8 TM is relatively small, consistent with EPA's findings in the MACT review of paper machine emissions where EPA determined that paper machine emissions did not warrant regulation or control. Calculated emissions are provided below:

Pollutant	Tons/year
PM	1.2
VOC	9.3 *

* Calculated VOC emissions assume 100% of the volatile components of each chemical lost through evaporation on the Yankee Dryer and that #8 TM produces 100 ton per day finished product and operates with 100% uptime annually.

C. BACT Analysis

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

The following information is provided as a demonstration of BACT for the emissions from the #8 Tissue Machine.

PM & PM₁₀

Particulate matter emissions from the #8 TM comes from the combustion of oil in the dryer hood and from dust losses from the drying of the tissue sheet. The hood burners will combust low sulfur #2 fuel oil. Proper combustion performance minimizes particulate emissions associated with the oil burners. BACT for particulate matter emissions will be good combustion practices and combusting #2 fuel oil. BACT for process particulate emissions will be routine periodic cleaning of dust accumulation in the hood and heat exchangers. Combined particulate emissions will be limited to 0.62 lb/hour.

SO₂

LPT will combust low sulfur #2 fuel oil in the dryer hood with a maximum fuel sulfur content of 0.35% by weight to meet BACT requirements. No further controls are necessary to control SO₂ emissions.

NO_x

Available technologies for NO_x control and destruction include SCR, SNCR, and flue gas recirculation. These technologies are employed on stand-alone boilers, LPT could not find any of these systems being used on tissue dryer hoods. Hood design and space restriction as well as the direct contact between the exhaust gasses and the paper sheet render these controls unfeasible.

Various designs of low NO_x burners are also available and are a viable control option for NO_x. Three burner designs were considered for the #8 TM hood. The design chosen is a standard burner described by the manufacturer as a low NO_x, low CO burner with NO_x emissions from this design at 0.27 lbs/MMBtu. The hood system

proposed is a design generally utilized for tissue drying and is similar to the #7 TM. The alternative designs considered were the use of water injection with the standard low NO_x burner or installing an ultra low NO_x burner. Both can be shown to provide lower levels of NO_x, however Metso Paper has never installed this type of equipment on a dryer hood and significant technical concerns were identified therefore the Department did not consider this control technically feasible for this type of equipment. Furthermore, the cost is not economically feasible when evaluated on a cost per ton of pollutant removed basis. BACT for NO_x on the #8 TM hood will be the use of low NO_x burners and limiting emission to 6.7 lb NO_x/hr.

CO

CO emissions from this source is minimal and no control device for CO is available or used for this type of fuel burning equipment. Oxidation catalysts are not a viable technology for this type of burner system.

Combustion control through good combustion practices and limiting CO emissions to 0.9 of CO/hour is BACT.

VOC

VOC emissions from the combustion of #2 fuel oil are very low. There is no feasible control technology for further reductions in VOC emissions from combustion. VOC emissions off the machine are a function of the VOC content of chemicals added to the pulp in the manufacture of different grades of tissue. Reaction of the chemical, transformation of VOC constituents, and solubility of the VOC all have an important impact on whether VOC in products result in air emissions. EPA determined that no further controls were needed for VOC emissions in its MACT review of paper machines.

BACT for VOC emissions is limiting VOC emissions from oil combustion to 0.04 lb/hr. BACT for VOC emissions from the process will be to continue to review any change in machine chemistry to assure that, where appropriate, low VOC containing materials continue to be used.

License Limits

The following license limits apply to emissions from the #8 Tissue Machine, including emissions from the oil fired dryers along with particulate and VOC emissions from the process.

Pollutant	Lb/hr	Tons/year
PM	0.6	2.7 *
PM ₁₀	0.6	2.7 *
SO ₂	8.8	39.0
NO _x	6.7	29.4
CO	0.9	3.9
VOC	2.2	9.5 *

* includes process emissions from the tissue machine

Visible Emissions

Visible emissions from the #8 Tissue Machine will not exceed 15% opacity on a 6 minute block average, except for no more than two six minute averages in a 3-hour period. The opacity limit does not apply to the condensed uncombined water vapor due to direct contact with the exhaust gasses.

D. Emissions from Steam Generating Equipment

LPT has reviewed the potential changes in operation associated with the installation of #8 TM and recycle and water reuse aspects of this project and concludes that at current pulp production levels no increase in overall annual steam demand is anticipated. The steam demand of the #8 TM will be offset by reduced operation of the pulp dryer currently operating to dry pulp which will be the furnish for #8 TM. The balance of the difference in load will be from reductions in steam demand associated with recycling the hot white water off the #8 TM displacing fresh water use that currently requires heating. While LPT expects some variability in steam demand, overall annual steam demand is not expected to increase as a result of installation and operation of #8 TM. The Department does not anticipate the #8 Tissue Machine to increase the demand of steam from the steam generation equipment above current operational levels. Therefore the Department does not anticipate any increase in emissions from the steam generating equipment.

The Lincoln facility was issued a PSD/NSR air license allowing for increases in pulp production to 600 tons per day. All relevant terms and conditions from the 1991 PSD/NSR air license for the steam generating equipment at the facility are still in effect through the current Part 70 air license. All of the steam generating equipment at LPT was licensed at levels intended to support an increase in pulp and paper/tissue production. If there is an unexpected minimal increase in overall steam demand created by the installation and operation of the #8 TM, such increased steam demand

would be well within the emissions and production limits for the steam generating units licensed by the 1991 PSD/NSR air license.

In addition to considering projects to increase pulp production, the 1991 air license and subsequent Part 70 air emission license issued in October 2002 permitted the installation of a dryer hood on the #6 Tissue Machine for increased tissue capacity. The dryer hood on #6 TM was never installed and is not planned in the future. The #6 dryer capacity is comparable to the proposed #8 TM dryer hood. There are no modifications to any current pulp processing units, therefore, a BACT analysis was not needed for the pulp making sources and its associated equipment.

E. Periodic and Parameter Monitoring

Periodic Monitoring

Fuel for the #8 TM hood will be #2 fuel with low sulfur content that is limited to 0.35% by weight. Periodic Monitoring shall consist of record keeping which demonstrates fuel use and receipts showing the sulfur percent of the fuel.

Parameter Monitors

There are no Parameter Monitors required for the #8 Tissue Machine.

CEMS and COMS

There are no CEMS or COMS required to be operated for the #8 Tissue Machine.

Control Equipment

There is no control equipment operated for the #8 Tissue Machine.

F. License Clarification Changes

Lincoln Paper and Tissue's Part 70 Air Emissions License, A-177-70-A-I, was issued October 22, 2002. Within Condition (27) of the air emissions license, the reference to #6 TM Dryer should be deleted. This unit was never installed. Also, within Condition (27) D the reference to 2% sulfur fuel for the #7 TM Dryer should be deleted because it is already restricted to 0.5% sulfur fuel in Condition (27) A. These changes will be addressed in the Order section of the this license amendment.

Based on the information submitted by LPT, the Department approves LPT's request to change its Part 70 air license conditions pertaining to installation and operation of the #8 Tissue Machine.

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, and
- will not violate applicable ambient air quality standards, or increment standards either alone or in conjunction with emissions from other sources.

The Department hereby grants this Part 70 Minor Modification, A-177-70-F-A, subject to the conditions found in Part 70 Air Emission License A-177-70-A-I, subsequent amendments, and the following conditions:

(1) The following condition will replace Condition (27) of Air Emission License Amendment, A-177-70-A-I.

(27) The #7 Tissue Dryer shall comply with each of the following:
[MEDEP Chapter 140, BPT]

- A. The #7 Tissue Machine dryer shall fire #2 fuel oil with a maximum sulfur content not to exceed 0.5% by weight. **State Enforceable Only**
- B. The tissue dryer is limited to 108 gallons of fuel oil per hour. **State Enforceable Only**
- C. Emissions from fuel burning from the #7 tissue dryer shall not exceed:

Pollutant	Lb/hr
PM	0.22
PM10	0.22
SO2	7.7
NOx	2.2
CO	0.54
VOC	0.03

NEW CONDITIONS

(2) The following conditions are new to Air Emission License, A-177-70-A-I.

- (46) Lincoln Paper and Tissue, LLC is licensed to purchase and install a new tissue machine (#8 TM) from Metso Paper. The #8 TM will be designed to run specialty tissue products. The #8 TM will have a two-burner oil fired drying hood.

- (47) Each oil fired burner for the #8 TM will have a maximum heat input capacity of 12.5 MMBtu/hr. The burners will fire #2 low sulfur oil with a maximum fuel sulfur content of 0.35% by weight. Periodic Monitoring shall consist of record keeping which demonstrates fuel use and receipts showing the sulfur percent of the fuel.
- (48) The following license limits shall apply to emissions from the #8 Tissue Machine, including emissions from the oil fired dryers along with particulate and VOC emissions from the process.

Pollutant	Lb/hr	Tons/year
PM	0.6	2.7
PM ₁₀	0.6	2.7
SO ₂	8.8	39.0
NO _x	6.7	29.4
CO	0.9	3.9
VOC	2.2	9.5

- (49) Visible emissions from the #8 Tissue Machine will not exceed 15% opacity on a 6 minute block average, except for no more than two six minute averages in a 3-hour period.
- (50) This Part 70 Minor Modification shall expire concurrently with Part 70 Air Emission License A-177-70-A-I.

DONE AND DATED IN AUGUSTA, MAINE THIS _____ DAY OF _____ 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 29, 2005

Date of application acceptance: April 29, 2005

Date filed with Board of Environmental Protection: _____

This Order prepared by Edwin Cousins, Bureau of Air Quality