



DEPARTMENT ORDER

**Northeast Pellets, LLC
Aroostook County
Ashland, Maine
A-929-71-C-R**

**Departmental
Findings of Fact and Order
Air Emission License
Renewal**

FINDINGS OF FACT

After review of the air emission license renewal application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Northeast Pellets, LLC (Northeast Pellets) has applied to renew their Air Emission License for the operation of emission sources associated with their wood pelletizing facility.

The equipment addressed in this license is located at 53 Reality Road, Ashland, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type</u>	<u>Install Date</u>	<u>Stack #</u>
Rotary Dryer	12.0 MMBtu/hr	* 0.8 tons/hour	Sawdust	2005	1

* based on a fuel moisture content of 12%, by weight

Process Equipment

<u>Equipment</u>	<u>Stack #</u>
Screen	Fugitive
Fuel Conveying System	Fugitive

Northeast Pellets may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More

information regarding requirements for small stationary engines is available on the Department's website at the link below.

<http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf>

Additionally, Northeast Pellets may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

C. Definitions

Portable Engine. For the purposes of this license, *portable engine* means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

The application for Northeast Pellets does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

Northeast Pellets is licensed as follows:

- As a natural minor source of air emissions, because facility emissions cannot exceed major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

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 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

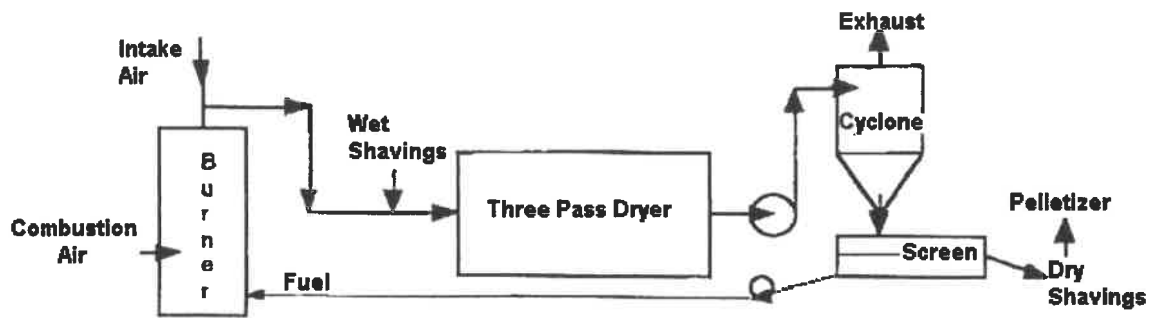
- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Process Description

Northeast Pellets produces wood pellets for sale to be used as fuel for pellet stoves. The current operation uses dry sawdust and shavings that are received at their facility where they are processed through a cyclone to separate the dry shavings from the smaller wood particles. The accepted shavings are screened and pelletized to be packaged and sold as wood fuel.

Northeast Pellets also has a three-pass biomass-fired rotary dryer at their facility that could be used to process wet sawdust and shavings if business conditions should dictate. The wet raw materials would be introduced to the rotary dryer where they would be combined with hot flue gases from the dryer's burner to dry them to a moisture content of 12% by weight, or lower. The dried raw materials and the exhaust from the rotary dryer would then be directed into the cyclone, where the dried shavings would be screened and then pelletized for sale as wood fuel, while the dried sawdust-like particles would be conveyed back to the rotary dryer burner where they would be fired as a fuel in semi-suspension to enhance complete combustion.

Presently Northeast Pellets does not operate the rotary dryer because the raw materials they are procuring are dry and do not require additional drying. However, Northeast Pellets has opted to include the rotary dryer in their air license in the event they should decide to begin utilizing it. Northeast Pellets shall notify the Department's Northern Maine Regional Office of their intent to start up the rotary dryer prior to putting it into operation.



C. Rotary Dryer

Northeast Pellets has on site a three-pass biomass (sawdust) fired rotary dryer with a maximum heat input rating of 12.0 MMBtu/hour. The rotary dryer is available for use to dry wet wood shavings/raw materials if needed.

The dryer's burner is equipped with automatic combustion controls designed to maintain the combustion temperature at 1400°F. Due to the combination of this high combustion temperature and the use of dry wood residues (sawdust and undersized particles) as fuel, the burner will produce very low amounts of sulfur dioxide (SO₂), carbon monoxide (CO) and volatile organic compounds (VOC). However, combustion temperatures are not so high as to cause the creation of thermal NO_x, which would generally occur at temperatures of 2000°F or above.

Ash that is generated from the combustion process is carried along with the hot flue gases from the burner into the rotary dryer where they come into direct contact with the wet shavings being dried. This interaction removes much of the ash from the exhaust stream. Burner gases exhaust to the atmosphere through a cyclone which removes more of the fine particles from the exhaust stream. The dried shavings discharged from the cyclone are screened, pelletized and packaged for sale.

The dryer manufacturer has indicated that hot gases may cause resin in the wood shavings being dried to "cook out" at temperatures over 850°F, potentially resulting in VOC emissions appearing as a blue, hazy visible emission. To preclude this potential emission of VOC, upon start-up of the rotary dryer Northeast Pellets shall establish an optimum inlet air temperature range that the dryer shall be operated within, so that visible emissions can be maintained by the facility within the limits established by this air emission license. Within 30 days of the rotary dryer startup, Northeast Pellets shall document and submit the optimum temperature range that they defined in writing to the Department for approval.

1. BPT Findings

Currently there are no specific US Environmental Protection Agency (USEPA) emission factors for pellet production. Therefore, emission factors for wood drying were taken from USEPA AP-42, Section 10.6.1 (Oriented Strand Board) as being the closest approximation to pellet operations.

The BPT emission limits for the rotary dryer burner were based on the following:

Biomass Fuel

- PM/PM₁₀ – 0.3 lb/MMBtu based on 06-096 C.M.R. ch. 103, BPT
- SO₂ – 0.025 lb/MMBtu, from AP-42 Table 1.6-2 dated 09/2003
- NO_x – 0.49 lb/MMBtu, from AP-42 Table 1.6-2 dated 09/2003
- CO – 0.60 lb/MMBtu, from AP-42 Table 1.6-2 dated 09/2003
- VOC – 0.017 lb/MMBtu, from AP-42 Table 1.6-3 dated 09/2003
- Visible Emissions – 06-096 C.M.R. ch 115, BPT

The BPT emission limits for the rotary dryer are the following:

Unit	Pollutant	lb/MMBtu
Rotary Dryer	PM	0.30

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Rotary Dryer Biomass Fuel	3.6	3.6	0.3	5.9	7.2	0.2

Visible emissions from the rotary dryer cyclone shall not exceed 20% opacity on a six-minute block average basis, except for periods of startup, shutdown, or malfunction during which time Northeast Pellets may elect to comply with the following work practice requirements in lieu of this visible emission standard.

For startup, shutdown and maintenance periods where visible emissions exceed 20% opacity, Northeast Pellets shall;

- Make operating records available as necessary to demonstrate that the facility was being operated to minimize emissions; and
- Provide records, documents or other evidence deemed acceptable by the Department proving that the excess emissions were not caused entirely, or in part, by poor maintenance, careless operation, poor design or any other reasonably preventable condition.

Northeast Pellets shall be limited to firing a maximum of 99,665 MMBtu per year biomass in the rotary dryer, on a calendar year basis. This equates to 6,292 tons per year of biomass fuel, assuming a moisture content of 12% by weight, and a heating value of 7,920 Btu per pound.

2. Periodic Monitoring

- a. Once put into operation, periodic monitoring for the rotary dryer shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Documentation shall include the quantity and moisture content of the biomass.
- b. While operating the rotary dryer, Northeast Pellets shall monitor and record its inlet air temperature on an hourly basis. Other than during startups and shutdowns of the rotary dryer, if the inlet air temperature goes outside of the optimum range approved by the Department, Northeast Pellets shall take immediate corrective action or immediately shut down the rotary dryer.

3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

The rotary dryer is not a steam generating unit and is therefore exempt from the requirements of Subpart Dc. [40 C.F.R. § 60.40c(a)]

4. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJ

The rotary dryer does not meet the definition of a boiler and is therefore exempt from the requirements of Subpart JJJJJ. [40 C.F.R. § 63.11193 and 11237]

D. Fugitive Emissions

Visible emissions from a fugitive emission source (including the fuel conveying system, screens, stockpiles and roadways) shall not exceed 20% opacity, except for no more than five minutes in any one-hour period during which time visible emissions shall not exceed 30% opacity. Compliance shall be determined by an aggregate of the individual fifteen-second opacity observations which exceed 20% in any one hour.

E. Annual Emissions

Total Annual Emissions

Northeast Pellets shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on a maximum heat input of 100,000 MMBtu per year into the rotary dryer from of biomass fuel being fired.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Rotary Dryer	14.9	14.9	1.25	24.4	29.9	0.9

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

1. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

The quantity of CO₂e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limit;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this 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, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-929-71-C-R subject to the following conditions.

Severability - The invalidity or unenforceability of any provision of this License or part thereof 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.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115.
[06-096 C.M.R. ch. 115]

- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 C.M.R. ch. 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:

- A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 2. Pursuant to any other requirement of this license to perform stack testing.
- B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
- C. Submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 C.M.R. ch. 115]

- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

- A. Within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and
- B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
- C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 C.M.R. ch. 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(16) **Rotary Dryer**

A. Fuel

- 1. Total heat input into the Rotary Dryer shall not exceed 100,000 MMBtu per year from biomass fuel, based on a calendar year basis. This equates to 6,313 tons per year of biomass fuel having an average moisture content of 12% by weight, and a heating value of 7,920 Btu per pound. [06-096 C.M.R. ch. 115, BPT]
- 2. Northeast Pellets shall document fuel use in the rotary dryer on a monthly and calendar year basis. Documentation shall include the quantity in tons, and the moisture content of the biomass fired in the rotary dryer. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Rotary Dryer	PM	0.30	06-096 C.M.R. ch. 103, BPT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Rotary Dryer	3.6	3.6	0.3	5.9	7.2	0.2

D. Visible emissions from the rotary dryer cyclone shall not exceed 20% opacity on a six-minute block average basis, except for periods of startup, shutdown, or malfunction during which time Northeast Pellets may elect to comply with the following work practice requirements in lieu of this visible emission standard.

For startup, shutdown and maintenance periods where visible emissions exceed 20% opacity, Northeast Pellets shall;

- Make operating records available as necessary to demonstrate that the facility was being operated to minimize emissions; and
- Provide records, documents or other evidence deemed acceptable by the Department proving that the excess emissions were not caused entirely, or in part, by poor maintenance, careless operation, poor design or any other reasonably preventable condition.

[06-096 C.M.R. ch. 115, BPT]

E. Prior to the rotary dryer being fitted to be operational, Northeast Pellets shall notify the Department's Northern Maine Regional Office. [06-096 C.M.R. ch. 115, BPT]

F. Within 30 days of the rotary dryer being made operational, Northeast Pellets shall establish an optimum inlet air temperature range that the dryer shall be operated within to ensure that visible emissions from the rotary dryer cyclone are maintained within the limits established by this air license, and shall submit the defined temperature range in writing to the Department for approval. [06-096 C.M.R. ch. 115, BPT]

G. Except for during startups and shutdowns, Northeast Pellets shall control the inlet air temperature of the rotary dryer within the optimum range submitted to and approved by the Department. [06-096 C.M.R. ch. 115, BPT]

H. While operating the rotary dryer, Northeast Pellets shall monitor and record its inlet air temperature on an hourly basis. Other than during startups and shutdowns of the rotary dryer, if the inlet air temperature goes outside of the optimum range approved by the Department, Northeast Pellets shall take immediate corrective action or immediately shut down the rotary dryer. [06-096 C.M.R. ch. 115, BPT]

I. If the inlet air temperature of the rotary dryer is found to be outside the optimum approved temperature range, Northeast Pellets shall take immediate corrective action to bring the inlet air temperature back within the approved temperature range or shall immediately shut down the rotary dryer. [06-096 C.M.R. ch. 115, BPT]

(17) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including the fuel conveying system, screens, stockpiles and roadways) shall not exceed 20% opacity, except for no more than five minutes in any one-hour period during which time visible emissions shall not exceed 30% opacity. Compliance shall be determined by an aggregate of the individual fifteen-second opacity observations which exceed 20% in any one hour. [06-096 C.M.R. ch. 115, BPT]

- (18) Northeast Pellets shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605).

DONE AND DATED IN AUGUSTA, MAINE THIS 11 DAY OF September, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marie Allen Robert Core for
PAUL MERCER, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: December 21, 2016
Date of application acceptance: January 4, 2017

Date filed with the Board of Environmental Protection:

This Order prepared by Patric J. Sherman, Bureau of Air Quality.

