

**LORING BIOENERGY LLC.
MATTAWAMKEAG BOOSTER STATION
MATTAWAMKEAG, MAINE
A-896-71-A-N (SM)**

**DEPARTMENTAL
FINDING OF FACT AND ORDER
AIR EMISSION LICENSE**

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., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Loring BioEnergy, LLC. (LBE) has applied for an Air Emission License permitting the operation of a Booster Station for the pipeline that will be used to transport natural gas to the proposed Loring Power Plant.

B. Emission Equipment

LBE is authorized to operate the following equipment:

Back-up Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Firing Rate (gal/hr)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Stack #</u>
Emergency Generator #1	750	55	7.5	1

C. Application Classification

The application for LBE is for a new source applying for its first Air Emission License. A new source is considered a major source based on whether or not expected emissions exceed the "Significant Emission Levels" as defined in the Department's regulations. The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

<u>Pollutant</u>	<u>Max. Future License (TPY)</u>	<u>Sig. Level</u>
PM	0.2	100
PM ₁₀	0.2	100
SO ₂	0.1	100
NO _x	4.4	100
CO	0.9	100
VOC	0.2	50

The Department has determined LBE is a minor source and the application has been processed through Chapter 115 of the Department's regulations. With the hour restriction on the standby generator and fuel limit, the facility is licensed below the major source thresholds and is considered a synthetic minor.

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 Chapter 100 of the Air Regulations. 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 Chapter 100 of the Air Regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

Project Overview

The Mattawamkeag Booster Station is an integral part of the pipeline that will be used to transport natural gas to the proposed Loring Power Plant to be constructed at the Loring Commerce Center in Limestone, Maine.

This pipeline, which was formerly used to transport fuels from Searsport to the Loring Air Force Base, will be supplied with natural gas from the Maritimes and Northeast Pipeline. A new interconnection (valve and metering) station will be constructed for this purpose at the point at which these two pipelines intersect just west of Winterport in Waldo County. The distance from this interconnection

point to the proposed power plant is approximately 187 miles. Accordingly, the existing booster station at Mattawamkeag will be reactivated to maintain natural gas pressure within the Loring pipeline in order to meet the requirements of the proposed power plant.

The primary operating equipment at the Mattawamkeag Booster Station will be a natural gas compressor, which will be driven by an electric motor. Supply power to this motor will be provided from the local electric utility through the existing utility distribution grid connection. This booster station will also be equipped with a diesel-fired standby electric generator for use in situations when sufficient supply power is not available. The generator will have maximum heat input capacity of 7.5 MMBtu/hr. LBE will limit the unit's operation to 500 hours per year. The diesel fuel will be restricted to a maximum sulfur content 0.05% or less by weight.

B. Emergency Diesel Generator

Loring BioEnergy, LLC (LBE) is applying for an air emission license to cover the operation of a new 750 kW diesel fired "emergency" generator at the Mattawamkeag Booster Station. "Emergency" is defined in Chapter 100 and throughout this document as: "... any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology based emission limitation under the license, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error."

Chapter 115 of the Maine DEP regulations requires that a BACT analysis be conducted for the generator, and for each pollutant emitted. This BACT analysis addresses the five common combustion pollutants emitted from generators: sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, and volatile organic compounds.

BACT for SO₂

The generator will only be operated for providing backup power. LBE will restrict operation of this unit to less than 500 hours per year. At this low level of operation, the best method to limit sulfur dioxide emissions is through the use of

low sulfur fuel. LBE will minimize SO₂ emissions from the generator by using diesel fuel having a sulfur content no greater than 0.05% by weight.

BACT for NO_x

Control technologies sometimes used to reduce NO_x emissions from diesel engines include selective catalytic reduction (SCR) and fuel injection timing retard (FITR). For a generator that will be limited by license to 500 hours per year of operation, with actual operating time being much lower, both SCR and FITR would not provide a significant environmental benefit. LBE will meet BACT for NO_x by meeting an emissions limit of 17.5 lb/hour, which reflects clean burning engine technology.

BACT for PM

Particulate matter emissions from diesel engines are generally controlled through proper operation and maintenance. LBE proposes to meet BACT by meeting an emission limit of 0.5 lb/hour.

BACT for CO and VOC

CO and VOC emissions from electric generators are generally controlled through proper operation and maintenance. Oxidation catalysts have been used on large prime power applications to reduce CO and VOC emission levels in the exhaust. Like SCR technology, use of an oxidation catalyst on a generator of such limited use would not provide a significant environmental benefit, and could adversely affect the reliability of the unit. LBE will meet BACT by meeting CO and VOC emission limits of 3.2 and 0.6 lb/hr, respectively.

A summary of the BACT analysis for Generator #1 (750 kW) is the following:

1. The emergency generator shall fire only diesel fuel with a maximum sulfur content not to exceed 0.05% by weight.
2. The emergency generator shall be limited to 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
3. Chapter 106 regulates fuel sulfur content, however in this case a BACT analysis for SO₂ determined a more stringent limit of 0.05% was appropriate and shall be used.
4. Chapter 103 regulates PM emission limits. The PM₁₀ limits are derived from the PM limits. The generator shall meet 0.5 lb/hr for BACT
5. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.

6. Visible emissions from the emergency generator shall each 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.

C. Annual Emission Restrictions

LBE shall be restricted to the following annual emissions, based on a 12 month rolling total:

- 500 hours per year of emergency diesel generator operation.
- 27,372 gallons of diesel fuel (0.05% sulfur) in the emergency generator.

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

<u>Pollutant</u>	<u>Tons/Year</u>
PM	0.2
PM ₁₀	0.2
SO ₂	0.1
NO _x	4.4
CO	0.9
VOC	0.2

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

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-896-71-A-N subject to the following conditions:

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 MRSA §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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 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. [MEDEP Chapter 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR 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 CFR 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.
- [MEDEP Chapter 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 CFR 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.

[MEDEP Chapter 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. [MEDEP Chapter 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 emission 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. [MEDEP Chapter 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. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) Emergency Generator

- A. LBE shall limit the Emergency Generator to 500 hr/yr of operation (based on a 12 month rolling total). An hour meter shall be maintained and operated on the Emergency Generator. [MEDEP Chapter 115, BPT]
- B. The Emergency Generator shall be operated for emergency purposes only or for short periods to exercise the unit and to keep it in operating order. A log shall be maintained documenting the date, time, and reason for operation. [MEDEP Chapter 115, BPT]
- C. The Emergency Generator shall fire #2 fuel oil with a sulfur limit not to exceed 0.05% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. [MEDEP Chapter 115, BPT]
- D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	MEDEP, Chapter 103, Section 2(B)(1)(a)

- E. Emissions from the Emergency Generator shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.5
PM ₁₀	n/a	0.5
SO ₂	n/a	0.4
NO _x	n/a	17.5
CO	n/a	3.2
VOC	n/a	0.6

- F. Visible emissions from the stack for the diesel generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than 2 six minute block averages in a 3 hour period. [MEDEP Chapter 115, BPT]

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(17) **Payment of Annual License Fee**

LBE shall pay the annual air emission license fee within 30 days of December 30th of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2004.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 1, 2004

Date of application acceptance: June 1, 2004

Date filed with the Board of Environmental Protection: _____

This Order prepared by Edwin Cousins, Bureau of Air Quality.