STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

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ACTING COMMISSIONER

LORING BIOENERGY, LLC
MATTAWAMKEAG BOOSTER STATION
MATTAWAMKEAG, MAINE
A-896-71-D-R (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 a renewal 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

Equipment	Power Output (kW)	Firing Rate (gal/hr)	Maximum Capacity (MMBtu/hr)	Stack #
Back-up Generator #1	750	55	7.5	1

C. Application Classification

The application for LBE 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 current licensed emission units only and has been processed through Major and Minor Source Air Emission License Regulations, 06-096 CMR 115 (last amended December 24, 2005). With the operating hours restriction on the back-up generator, 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 Definitions Regulation, 06-096 CMR 100 (last amended December 24, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

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.

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. Back-up Diesel Generator #1

The compressor will be driven by an electric motor and will therefore need a stand-by generator to provide power when there is not an adequate supply from the local electric utility. The specific generator make and model has not been chosen. This renewal application is based on a Caterpillar C27, which is EPA Certified Tier II. Generator #1 will be ordered after July 11, 2005 and manufactured after April 1, 2006. Therefore, Generator #1 is subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines. By meeting the requirements of Subpart IIII, the facility will be in compliance with the NESHAP.

06-096 CMR 115 of the Maine DEP regulations requires that a BPT analysis be conducted for the generator, and for each pollutant emitted. This BPT analysis addresses the five common combustion pollutants emitted from generators: sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, and volatile organic compounds.

BPT for PM_{10}

Particulate matter emissions from diesel engines are generally controlled through proper operation and maintenance. To meet BPT, LBE shall limit particulate emissions to 0.32 lb/hr.

BPT for SO_2

The generator will only be operated for providing backup power. LBE will continue to restrict annual operating time to 500 hours. At this low level of operation, the only practical method for limiting sulfur dioxide emissions is through the use of low sulfur fuel. LBE will minimize SO_2 emissions from the generator by using diesel fuel having a sulfur content no greater than 0.05% by weight. As of October 1, 2010, the diesel fuel sulfur content must be equal to or lower than 0.0015% to comply with EPA new source performance standards, Subpart IIII.

BPT for NOx

Control technologies sometimes used to reduce NOx emissions from diesel engines include selective catalytic reduction (SCR) and fuel injection timing retard (FITR). For a generator 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. In fact, each technology could adversely affect the reliability of the generator in power outage situations, and could result in emissions of new pollutants (ammonia from SCR) or increased emissions of current pollutants (increased CO, PM, and opacity from FITR). LBE will meet a NOx emission limit of 16.2 lb/hr, which reflects state-of-the-art, clean-burning engine technology and emission limit established for diesel engines subject to Subpart IIII.

BPT 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 BPT by meeting CO and VOC emission limits of 1.5 lb/hr and 0.22 lb/hr, respectively.

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

1. Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm.
2. Beginning October 1, 2010, Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.
3. Generator #1 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Generator #1 shall be limited to 500 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
4. Generator #1 shall be equipped with a non-resettable hour meter.
5. 06-096 CMR 103 regulates PM emission limits. The PM_{10} limits are derived from the PM limits.
6. NO_x, CO, and VOC emission limits are based upon the engine manufacturer's not-to-exceed emission data.
7. LBE shall operate and maintain Generator #1 in accordance with the manufacturer's written instructions. Facility shall not change settings that are not approved in writing by the manufacturer.
8. Visible emissions from the back-up generator 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.

C. Annual Emissions

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

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

- 500 hours per year of emergency diesel generator operation.
- 27,372 gallons of diesel fuel in the emergency generator.

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

Pollutant	Tons/Year
PM	0.1
PM_{10}	0.1
SO_2	0.1
NO_x	4.1
CO	0.4
VOC	0.1

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations 06-096 CMR 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-D-R subject to the following conditions.

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.

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.A. §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 CMR 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 CMR 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 CMR 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. [06-096 CMR 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 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 CMR 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 CMR 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 CMR 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 CMR 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.

[06-096 CMR 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.

[06-096 CMR 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 CMR 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. [06-096 CMR 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 CMR 115]

SPECIFIC CONDITIONS

(16) **NSPS Emergency Generator**

A. Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm. [40 CFR 60.4207(a)]

B. Beginning October 1, 2010, Generator #1 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm. [40 CFR 60.4207(b)]

C. Compliance with the sulfur content limits shall be based on fuel records from the supplier showing the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BACT]

D. Generator #1 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Generator #1 shall be limited to 500 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR 60.4211(E) and 06-096 CMR 115, BACT]

E. Generator #1 shall be equipped with a non-resettable hour meter. [40 CFR 60.4209(a)]

F. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

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

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.32	0.32	0.4	16.2	1.5	0.22

H. Generator #1 is subject to PM, CO, and NO_x + VOC emission requirements set forth in 40 CFR 60, Subpart IIII. Compliance with these emission requirements shall be demonstrated by certification from the manufacturer that this engine class meets the appropriate Tier standards. [40 CFR 60, Subpart IIII]

I. LBE shall operate and maintain Generator #1 in accordance with the manufacturer's written instructions. LBE shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]

J. Visible emissions from the back-up generator 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]

(17) LBE shall be in compliance with 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines by demonstrating compliance with 40 CFR Part 60 Subpart IIII. [40 CFR 60, Subpart ZZZZ]

(18) LBE 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.A. §605-C).

DONE AND DATED IN AUGUSTA, MAINE THIS 22nd DAY OF September, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooks for
BETH NAGUSKY, ACTING 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: December 7, 2009
Date of application acceptance: December 21, 2009

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality

FILED
SEP 27 2010
BOARD OF ENVIRONMENTAL PROTECTION
STATE OF MAINE