

**FPL Energy Cape, LLC
Cumberland County
South Portland, Maine
A-612-71-F-R (SM)**

**Departmental
Findings 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

FPL Energy Cape, LLC (FPL) of South Portland, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their power generation facility.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Turbine #4	327.6	2,340	#2 fuel oil, 0.3%	4
Turbine #5	327.6	2,340	#2 fuel oil, 0.3%	5
Diesel #4	4.23	30.9	#2 fuel oil, 0.3%	4
Diesel #5	4.23	30.9	#2 fuel oil, 0.3%	5

C. Application Classification

The application for FPL 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 Chapter 115 of the Department's regulations. With the limit on FPL's annual facility's fuel use, 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 Department 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 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. Turbines

FPL operates two turbines at Cape Station in South Portland. These turbines are used as peaking units for the New England Power Pool and as reserve capacity for FPL Energy. The units are both General Electric model MS5000M turbines (Frame 5) rated at 22 MW each.

These turbines were placed into service in 1970 and are therefore not subject to the New Source Performance Standards (NSPS) Subpart GG for stationary gas turbines.

A summary of the BPT analysis for Turbines #4 and #5 (327.6 MMBtu/hr each) is the following:

1. The total fuel use for the facility shall not exceed 2,183,000 gal/year of #2 fuel oil, based on a 12 month rolling total, with a maximum sulfur content not to exceed 0.3% by weight.
2. The turbines shall each 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 turbine operating hours.
3. Chapter 106 regulates fuel sulfur content, however in this case BPT for SO₂ was determined to be a more stringent limit of 0.3% and shall be used.
4. Chapter 103 regulates PM emission limits however in this case BPT for PM was determined to be a more stringent limit of 0.06 lb/MMBtu and shall be used. The PM₁₀ limits are derived from the PM limits.
5. NO_x, CO and VOC emission limits are based on a previous BPT analysis.

6. Visible emissions from the turbines shall not exceed 20% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3 hour period.

C. Diesel Engines

Each turbine is equipped with a 4.23 MMBtu/hr (600 hp) diesel internal combustion engine that is used to start the turbine. These engines run for three minutes to start the turbine and then require a ten minute cool-down period.

A summary of the BPT analysis for Diesel Engines #4 and #5 (4.23 MMBtu/hr each) is the following:

1. The total fuel use for the facility shall not exceed 2,183,000 gal/year of #2 fuel oil, based on a 12 month rolling total, with a maximum sulfur content not to exceed 0.3% by weight.
2. The diesel engines shall each be limited to 100 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all diesel engine operating hours.
3. Chapter 106 regulates fuel sulfur content, however in this case BPT for SO₂ was determined to be a more stringent limit of 0.3% and shall be used.
4. Chapter 103 regulates PM emission limits. The PM₁₀ limits are derived from the PM limits.
5. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
6. Visible emissions from the generators shall not exceed 30% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3 hour period.

D. Annual Emissions

FPL shall be restricted to the following annual emissions, based on a 12 month rolling total. Annual emissions were calculated based on the following:

- 100 hours per year of operation of each diesel engine; and,
- The remainder of the fuel fired in the turbines.

**Total Licensed Annual Emission for the Facility
Tons/year**

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Turbines	9.15	9.15	46.1	96.1	7.7	2.59
Engines	0.05	0.05	0.13	1.8	0.41	0.15
Total TPY	9.2	9.2	46.23	97.9	8.11	2.74

III. AMBIENT AIR QUALITY ANALYSIS

FPL previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this renewal.

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-612-71-F-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 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) Turbines #4 and #5

- A. Fuel use shall not exceed 2,183,000 gallons/year of #2 fuel oil (12 month rolling total) with a maximum sulfur content not to exceed 0.3% by weight. Fuel records, including gallons used and percent sulfur, shall be maintained on a monthly basis, in addition to the 12 month rolling total.
- B. FPL shall limit the turbines to 500 hr/yr of operation each (based on a 12-month rolling total). A log documenting the dates and times of operation of the turbines shall be kept.
- C. Emissions shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Turbine #4	lb/MMBtu	0.06	-	-	-	-	-
	lb/hr	19.66	19.66	98.28	206.39	16.38	5.57
Turbine #5	lb/MMBtu	0.06	-	-	-	-	-
	lb/hr	19.66	19.66	98.28	206.39	16.38	5.57

- D. Visible emissions from the turbines shall not exceed 20% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3 hour period.

(17) Diesel Engines #4 and #5

- A. FPL shall limit the diesel engines to 100 hr/yr of operation each (based on a 12-month rolling total). A log documenting the dates and times of operation for the diesel engines shall be kept.
- B. The diesel engines shall fire #2 fuel oil with a sulfur limit not to exceed 0.3% by weight. Fuel records, including percent sulfur, shall be maintained.
- C. Emissions shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Diesel #4	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.51	0.51	1.27	18.65	4.02	1.48
Diesel #5	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.51	0.51	1.27	18.65	4.02	1.48

D. Visible emissions from the diesel engines shall not exceed 30% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3 hour period.

- (18) FPL 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 MRSA §605).
- (19) **Annual Emission Statement**
In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;
or
- 2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by July 1 or as otherwise specified in Chapter 137.

(20) **Air Toxics Emission Statement**

If FPL exceeds the thresholds for HAPs listed in Appendix A of MEDEP Chapter 137 in an inventory year, in accordance with MEDEP Chapter 137 the licensee shall report, no later than July 1 every three years (2005, 2008, 2011, etc.) or as otherwise stated in Chapter 137, the information necessary to accurately update the State's toxic air pollutants emission inventory by means of a computer program supplied by the Department or a written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437 [MEDEP Chapter 137]

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

FPL shall pay the annual air emission license fee within 30 days of March 31st 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 _____ 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, 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 9, 2005

Date of application acceptance: December 22, 2005

Date filed with the Board of Environmental Protection: _____

This Order prepared by Rachel E. Pilling, Bureau of Air Quality.