



Connecticut Department of

**ENERGY &
ENVIRONMENTAL
PROTECTION**

**BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator	Devon Power LLC
Address	734 Naugatuck Avenue, Milford, CT 06461
Equipment Location	734 Naugatuck Avenue, Milford, CT 06461
Equipment Description	Pratt & Whitney FT4A-8LF Black Start Gas Turbine Generator (Unit 10)
Town-Permit Numbers	105-0026
Premises Number	14
Stack Number	1
Modification Issue Date	March 22, 2017
Prior Permit Issue Date	August 8, 1985 (Permit to Operate)
Expiration Date	None

/s/ Anne Gobin for
Robert J. Klee
Commissioner

March 22, 2017
Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. DESIGN SPECIFICATIONS

A. General Description

Devon Power LLC operates a Pratt & Whitney FT4A-8LF black start peaking power combustion turbine at the Devon Power LLC Milford, CT generating plant. The unit operates only on ultra-low sulfur distillate fuel oil.

B. Equipment Design Specifications

1. Turbine
 - a. Maximum Fuel Firing Rate (gal/hr):
 $X = -4.1099(Y) + 2122.4$
Where,
X = fuel flow in gallons/hour
Y = Ambient Temperature (°F)

C. Stack Parameters

1. Minimum Stack Height (ft): 40
2. Minimum Stack Exit Dimension (ft): 13' x 9'7"; 12.6' Equivalent Diameter
Where:

D_{eq} = Equivalent Diameter

L = Length

W = Width

$$D_{eq} = 2 \sqrt{\frac{L \times W}{\pi}}$$

3. Minimum Distance from Stack to Property Line (ft): 370

PART II. OPERATIONAL CONDITIONS

A. Equipment

1. Turbine
 - a. Fuel Type: Ultra-Low Sulfur Distillate Oil (ULSD)
 - b. Maximum Fuel Consumption over any Consecutive 12 Month Period (gal): 1.06×10^6
 - c. Maximum Distillate Fuel Oil Sulfur Content (% by weight): 0.0015

PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time, as determined in accordance with the applicable averaging periods defined in Part III of this permit or as specified in an approved stack test protocol.

A. Steady State (50%-100% Load) at ISO conditions

1. Criteria Pollutants

a. Ultra-Low Sulfur Oil Firing (HHV = 0.135 MMBtu/gal):

Pollutant	lb/MMBtu	Tons/yr
PM _{10/2.5}	1.2E-02	0.86
SO ₂	1.5E-03	0.11
NO _x	0.74	53.7
VOC	4.1E-04	0.03
CO	3.3E-03	0.24
Pb	1.4E-05	1.0E-3

B. Hazardous Air Pollutants

This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [STATE ONLY REQUIREMENT]

C. Opacity

This equipment shall not exceed 20% opacity during any six minute block average as measured by 40 CFR 60, Appendix A, Reference Method 9.

D. Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

- NO_x: Most recent stack test data
- SO_x: Calculated from 0.0015% S or less in fuel oil
- PM_{10/2.5}, CO, VOC, Pb: AP-42, Tables 3.1-1 and 3.1-2a, dated 04/00.

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

1. The Permittee shall comply with the monitoring requirements as set forth in RCSA Section 22a-174-4, and RCSA Section 22a-174-22. Continuous Monitoring shall be required for the following operational parameters and enforced on the following basis:

Operational Parameter	Averaging Times	Units
Fuel Consumption	Continuous	gal/hr (oil)

2. The Permittee shall use individual non-resettable totalizing fuel metering devices or billing meters to continuously monitor fuel feed to the turbine.

B. Record Keeping

1. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption. The consecutive 12 month fuel consumption shall be determined by adding the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
2. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by the equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.
3. The Permittee shall calculate and record the monthly and consecutive 12 month PM₁₀/PM_{2.5}, SO₂, NO_x, VOC, CO, and Pb emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. NO_x emissions shall be calculated using the latest approved stack test results. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
4. The Permittee shall make and keep records pursuant to RCSA Sections 22a-174-19a(c), 22a-174-22, and 22a-174-22e.
5. The Permittee shall keep records, when the turbine or gas generator is changed for routine maintenance, to include the following:
 - a. The date the turbine or gas generator was changed,
 - b. The reason for the change,
 - c. Documentation that the replacement turbine or gas generator is the same make and model number, and
 - d. Documentation that the replacement turbine or gas generator does not result in an increase in emissions, the emission of any new air pollutants, or an increases in the electrical output of the turbine.
6. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

C. Reporting

The Permittee shall submit all required reports to the Commissioner as required pursuant to RCSA Sections 22a-174-19a(j).

PART V. STACK EMISSION TEST REQUIREMENTS

- A. Stack emission testing shall be performed in accordance with the [Emission Test Guidelines](#) available on the DEEP website.

Stack testing shall be required for the following pollutant(s):

NO_x

Stack test results shall be reported as follows: all pollutants in units of lb/MMBtu.

- B. Recurrent stack testing shall be performed within five years from the previous stack test for NO_x emissions.
- C. For the purposes of stack testing the maximum fuel firing rate may be calculated using the following equation:

Maximum Fuel Firing Rate (gal/hr):

$$X = -4.1099(Y) + 2122.4$$

Where,

X = fuel flow in gallons/hour

Y = Ambient Temperature (°F)

PART VI. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with good engineering practice and industry standards.
- B. The Permittee shall operate and maintain this equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.
- C. The Permittee shall immediately institute shutdown of the turbine in the event a malfunction cannot be corrected within three hours.

PART VII. SPECIAL REQUIREMENTS

The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSEA Sections 22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

PART VIII. ADDITIONAL TERMS AND CONDITIONS

- A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B. Any representative of the DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.
- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.