



STATE OF CONNECTICUT
DEPARTMENT OF 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:	Pratt & Whitney, div. of United Technologies Corp.
Address:	Aircraft Road, Middletown, CT 06457
Equipment Location:	Aircraft Road, Middletown, CT 06457
Equipment Description:	GG-8 Stationary Gas Turbines

Permit Number:	104-0062
Town/Premises Numbers:	104-0007
Original Permit Issue Date:	10/31/1990
Modification Issue Date:	9/23/2002
Expiration Date:	

/s/ Arthur Rocque
Arthur J. Rocque, Jr.
Commissioner

9/23/ 2002
Date

PERMIT FOR FUEL BURNING EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

The conditions on all pages of this permit and attached appendices shall be verified at all times except those noted as design specifications. Design specifications need not be verified on a continuous basis; however, if requested by the Commissioner, demonstration of compliance shall be shown.

PART I. OPERATIONAL CONDITIONS

A. Operating Limits

1. Fuel Type(s): Jet Fuel _____
2. Maximum Fuel Consumption over any Consecutive 12 Month Period:
 259,609 gal.
3. Fuel Sulfur Content (% by weight, dry basis): 0.2
4. Maximum Hours of Operation: Daily: n/a ;Over any Consecutive 12
 Month Period: n/a

B. Design Specifications

1. Maximum Fuel Firing Rate(s): 1901.9 gal/hr or 12,800 lb/hr* _____
2. Maximum Gross Heat Input (MMBTU/hr): 249
3. Minimum Stack Height (ft): 45
4. Minimum Exhaust Gas Flow Rate (acfm): 1,920,000
5. Stack Exit Temperature (°F): 200
6. Minimum Distance from Stack to Property Line (ft): 1600

* The maximum firing rate is defined as the total fuel burned by the total test time.

PART II. CONTROL EQUIPMENT (Applicable if -X- Checked) (See Appendix E for Specifications)

A. Type

- | | |
|---|--|
| <input checked="" type="checkbox"/> None | <input type="checkbox"/> Selective Non-Catalytic Reduction |
| <input type="checkbox"/> Scrubber | <input type="checkbox"/> Selective Catalytic Reduction |
| <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Low NOx Burner (Natural Gas) |
| <input type="checkbox"/> Cyclone | <input type="checkbox"/> Fabric Filter |
| <input type="checkbox"/> Multi-Cyclone | <input type="checkbox"/> Particulate Trap |
| <input type="checkbox"/> Thermal DeNOx | <input type="checkbox"/> Other: |

B. Minimum Efficiency

1. Capture Efficiency (%): _____
2. Removal Efficiency (%): _____
3. Overall Efficiency (%): _____

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**PART III. CONTINUOUS EMISSION MONITORING REQUIREMENTS AND
ASSOCIATED EMISSION LIMITS (Applicable if -X- Checked)**

CEM shall be required for the following pollutant/operational parameters and enforced on the following basis:

<u>Pollutant/Operational Parameter</u>	<u>Averaging Times</u>	<u>Emission Limit</u>	<u>Units</u>
<input checked="" type="checkbox"/> None			
<input type="checkbox"/> Opacity	six minute block		
<input type="checkbox"/> SO _x	3 hour rolling		
<input type="checkbox"/> NO _x	24 hour rolling		
<input type="checkbox"/> CO	1 hour block		
<input type="checkbox"/> CO ₂	1 hour block		
<input type="checkbox"/> O ₂	1 hour block		
<input type="checkbox"/> Temperature	continuous		

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

- When more than one fuel supply tank is to service this source or when multiple sources are supplied by one fuel tank, the Permittee shall use a non-resettable totalizing fuel metering device to continuously monitor fuel feed to this permitted source.
- The Permittee shall monitor the sulfur content of the liquid fuels using either a fuel certification for a delivery of fuel from a bulk petroleum provider or a copy of a 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 or by sampling after each transfer/shipment to the large bulk storage tanks.

B. Record Keeping

- The Permittee shall keep records of monthly and consecutive 12 month fuel consumption. Consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel usage to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
- The Permittee shall keep records of the fuel certification and sampling that include the following information: 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. Records for a current contract shall include the following information: the name of the fuel supplier and type or grade of fuel delivered.

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PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, cont.

3. The Permittee shall keep records on premises indicating continual compliance with all above conditions at all times and shall make them available upon request by the Commissioner for the duration of this permit, or for the previous five (5) years, whichever is less.

PART V. ALLOWABLE EMISSION LIMITS

The Permittee shall not exceed the emission limits stated herein at any time.

<u>Criteria Pollutants</u>	<u>lb/hr</u>	<u>MASC *</u> <u>($\mu\text{g}/\text{m}^3$)</u>	<u>TPY</u>
PM-10	15.2		1.037
SOx	51.4		3.505
NOx	230		15.7
VOC	12		0.819
CO	32		2.184
Pb	0.01444	1.7	0.001

<u>Non-Criteria Pollutants</u>	<u>MASC *</u> <u>($\mu\text{g}/\text{m}^3$)</u>	<u>TPY</u>
Sulfuric Acid	112	0.064

* Maximum allowable stack concentration

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

1. PM-10: Compilation of Air Pollutant Emission Factors, AP-42, fifth edition, Table 3.1-2, page 3.1-4, January 1995.
2. SOx: CTDEP emission factor of 135 S lb/1000 gal for jet fuel, where S is the maximum percent sulfur content by weight).
3. NOx, VOC, CO (for all fuels): P&W annual average emission test data for GG-8 turbines, 6/15/95.
4. Pb: Compilation of Air Pollutant Emission Factors, AP-42, Fifth edition, Table 3.1-7, page 3.1-8, January 1995.
5. H₂SO₄: CTDEP emission factor of 2.45 S lb/1000 gal for jet fuel, where S is the maximum percent sulfur content by weight.

The above statement shall not preclude the Commissioner from requiring other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

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(See Appendix B for General Requirements)

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

 None at this time PM SOx NOx CO VOC Pb Other (HAPs): _____, _____, _____**PART VII. APPLICABLE REGULATORY REFERENCES** (The Regulations of Connecticut State Agencies)

RCSA §§22a-174-3a; 22a-174-18; 22a-174-19; 22a-174-22; 22a-174-29(b)

These references are not intended to be all inclusive - other sections of the Regulations may apply.

PART VIII. SPECIAL REQUIREMENTS

- A.** The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B.** 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 RCSA §§22a-69-1 through 22a-69-7.4.
- C.** The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times. (Applicable if -X- checked) (See Appendix C for Detailed Requirements)

 None40 CFR Part 60, Subpart: Db Dc GG A

- D.** The Permittee shall operate the GG-8 Turbine Engines at X-234 Test Stand in conformance with applicable NOx RACT requirements, as set forth in RCSA §22a-174-22.

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PART IX. 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 DEP 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.

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- 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 Assistant Director; Compliance & Field Operations Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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