



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 and Section 22a-174-3a of the Regulations of Connecticut State Agencies.

Owner/Operator: CT State Dept. of Education Regional
Vocational-Technical School System

Address: 25 Industrial Park Road, Middletown, CT

Equipment Location: Stratford School for Aviation Maintenance
Technicians Sikorsky Memorial Airport/Great Meadow
Airport, Stratford, CT

Equipment Description: Aerospace Engine Test Cell No. 2 Consists of
Unit #1-Westinghouse J34-WE-36A, Unit #2-Pratt &
Whitney PT6a Turboprop, and Unit #3-Reciprocating
Interior Combustion Prop Engines

Permit Number: 0123

Town/Premises Numbers: 178/231

Permit Issue Date: December 08 2005

Expiration Date:

/s/Gina McCarthy
Gina McCarthy
Commissioner

12/8/05
Date

PERMIT FOR FUEL BURNING EQUIPMENT

**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
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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 A [Units 1 & 2] and Aviation Gas [Unit 3]
2. Maximum Fuel Consumption over any Consecutive Twelve (12) Month Period: 1,000 gallons per unit
3. Fuel Sulfur Content (% by weight, dry basis): 0.3 [Jet Fuel A] and 0.05 [Aviation Gas]
4. Maximum Hours of Continuous Operation: 4 hr. during a 8 hr. period

B. Design Specifications

1. Maximum Fuel Firing Rate(s): 24 gal/hr [Jet Fuel A];
21 gal/hr [Aviation Gas]
2. Maximum Gross Heat Input (MM BTU/hr): 3.425 [Unit 1],
7.625 [Unit 2], and 2.450 [Unit 3]
3. Minimum Stack Height (ft): 12
4. Minimum Exhaust Gas Flow Rate (acfm): 5,336 [Units 1 & 2];
2,000 [Unit 3]
5. Stack Exit Temperature (°F): 900
6. Minimum Distance from Stack to Property Line (ft): 10

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 |
| <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 (%): N/A
2. Removal Efficiency (%): N/A
3. Overall Efficiency (%): N/A

FIRM NAME: CT State Department of Education Regional Vocational-Technical School System
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**PART III. CONTINUOUS EMISSION MONITORING REQUIREMENTS AND
ASSOCIATED EMISSION LIMITS**

CEM shall not be required at this time.

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

The permittee shall use a non-resettable totalizing fuel metering device to continuously monitor fuel feed to this permitted source.

B. Record Keeping

1. The permittee shall keep records of annual fuel consumption. Annual fuel consumption shall be based on any consecutive twelve (12) month time period and shall be determined by adding (for each fuel) the current month's fuel usage to that of the previous eleven (11) months. The permittee shall make these calculations within thirty (30) days of the end of the previous month.
2. The permittee shall keep records of the fuel certification for each delivery of fuel 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 make and keep records on premises to determine compliance with the terms and conditions of this permit in accordance with RCSA 22a-174-4. Such records shall be made available upon request by the Commissioner and kept for the duration of this permit or for the previous five (5) years, whichever is less.

C. Reporting

The permittee shall be required to submit reports of monitoring data such as air pollutants, fuels, and operational information on forms furnished or prescribed by the Commissioner. Such forms shall be signed or verified in writing by a ranking corporate officer or managing official with offices located in the state. The signature shall be constitute personal affirmation that such officer has exercised due diligence in verifying the accuracy of the record or report and that, to the best of his knowledge and belief, the record or report is true, complete, and complies fully with applicable state requirements.

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PART V. ALLOWABLE EMISSION LIMITS

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

Unit 1: Westinghouse J34-WE Test Engine

<u>Criteria Pollutants</u>	<u>#/hr</u>	<u>#/MM BTU</u>	<u>TPY</u>
TSP	0.295	0.090	5.90E ⁻⁰³
PM-10	0.283	0.086	5.65E ⁻⁰³
SOx	2.326	0.303	2.08E ⁻⁰²
NOx	0.350	0.107	7.30E ⁻⁰³
VOC	1.104	0.336	2.30E ⁻⁰²
CO	0.785	0.239	1.64E ⁻⁰²
Pb	N/A		

<u>Non-Criteria Pollutants</u>	<u>MASC * (µg/m³)</u>
Sulfuric Acid	1,056

Unit 2: Pratt & Whitney PT6a - Turboprop Test Engine

<u>Criteria Pollutants</u>	<u>#/hr</u>	<u>#/MM BTU</u>	<u>TPY</u>
TSP	0.295	0.090	5.90E ⁻⁰³
PM-10	0.283	0.086	5.65E ⁻⁰³
SOx	2.326	0.303	2.08E ⁻⁰²
NOx	0.350	0.107	7.30E ⁻⁰³
VOC	1.104	0.336	2.30E ⁻⁰²
CO	0.785	0.239	1.64E ⁻⁰²
Pb	N/A		

<u>Non-Criteria Pollutants</u>	<u>MASC * (µg/m³)</u>
Sulfuric Acid	1,056

*Maximum allowable stack concentration adjusted to 4 hours continuous operation.

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Town No: 178

Premise No: 231

Permit No: 0123

Stack No: 02

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PART V. ALLOWABLE EMISSION LIMITS, continued:

Unit 3: Reciprocating Internal Combustion Prop Test Engine

<u>Criteria Pollutants</u>	<u>#/hr</u>	<u>#/MM BTU</u>	<u>TPY</u>
TSP	0.136	0.055	3.24E ⁻⁰³
PM-10	0.132	0.054	3.10E ⁻⁰³
SOx	0.112	0.046	2.66E ⁻⁰³
NOx	2.142	0.874	5.10E ⁻⁰²
VOC	3.108	1.269	7.40E ⁻⁰²
CO	82.74	33.77	1.97E ⁺⁰⁰
Pb	N/A		

<u>Non-Criteria Pollutants</u>	<u>MASC * (µg/m³)</u>
Sulfuric Acid	2,489

Total Emissions from Units 1, 2 and 3:

<u>Criteria Pollutants</u>	<u>#/hr</u>	<u>TPY</u>
TSP	0.702	1.50E ⁻⁰²
PM-10	0.702	1.50E ⁻⁰²
SOx	3.475	4.42E ⁻⁰²
NOx	2.843	6.56E ⁻⁰²
VOC	5.316	1.20E ⁻⁰¹
CO	84.310	2.00
Pb	N/A	

*Maximum allowable stack concentration adjusted to 4 hours continuous operation.

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

1. EPA's AIRS (3/90), SCC 2-04-001-01 Aircraft Engine Testing of a Turbojet Engine.
2. SOx emissions factor are from the percent sulfur content in the fuel.
3. EPA's FIRE 6.23 (reference to AP-42, 9/85), SCC 2-04-004-01 Engine Testing of Reciprocating Internal Combustion Engine firing gasoline fuel.

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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PART VI. STACK EMISSION TEST REQUIREMENTS

Stack emission testing shall not be required at this time.

PART VII. APPLICABLE REGULATORY REFERENCES (The Regulations of Connecticut State Agencies, hereinafter referred to as the Regulations)

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

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. *Noise (for non-emergency use)*

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 Sections 22a-69-1 through 22a-69-7.4 of the Regulations.

C. The permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times. (Applicable if -X- checked)

40 CFR Part 60, Subpart: Db Dc GG A

None

D. The permittee shall limit NOx emissions from the premises to less than 137 lb during any day from May 1st through September 30th of any year.

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.

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PART IX. ADDITIONAL TERMS AND CONDITIONS, continued:

- 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 fifteen 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

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PART IX. ADDITIONAL TERMS AND CONDITIONS, continued:

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; 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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