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	Pratt & Whitney Division of Raytheon Technologies Corporation
Address	1 Aircraft Road, Middletown, CT 06457
Equipment Location	1 Aircraft Road, Middletown, CT 06457
Equipment Description	61 MMBtu/hr Natural Gas and No. 2 Oil ultra-low sulfur distillate (ULSD) Fired Watertube Boiler
Town-Permit Numbers	104-0157
Premises Number	0007
Stack Number	120
Permit Issue Date	
Expiration Date	None

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Betsey C. Wingfield
Deputy Commissioner

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

Pratt & Whitney Division of Raytheon Technologies Corporation operates a 61 MMBtu/hr dual-fuel Rentech D-Type boiler at their Middletown facility. The boiler will be used for process steam and building heat.

B. Equipment Design Specifications

1. Fuel Types: Natural Gas; No. 2 Oil (ULSD)

2. Maximum Fuel Firing Rates (MCF/hr, gal/hr): 59.454 (gas); 428 No. 2 Oil (ULSD)

3. Maximum Gross Heat Input (MMBtu/hr):
   a. 61 (gas), based on 1000 Btu/ft^3
   b. 59 No. 2 Oil (ULSD), based on 140,000 Btu/gal

C. Control Equipment Design Specifications

1. Low NOx Burner and Flue Gas Recirculation
   a. Make and Model: JZHC/Coen RMB (Rapid Mix Burner)
   b. Guaranteed NOx Emission Rate (lb/MMBtu): 0.011 (gas); 0.090 No. 2 Oil (ULSD)

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D. Stack Parameters

1. Minimum Stack Height (ft): 112.5

2. Minimum Exhaust Gas Flow Rate (acfm): 16,914[1]

3. Minimum Stack Exit Temperature (°F): 292[1]

4. Minimum Distance from Stack to Nearest Property Line (ft): 900

Note 1· Firing natural gas at maximum capacity

PART II. OPERATIONAL CONDITIONS

A. Equipment

1. Maximum Fuel Consumption over any Consecutive 12 Month Period:
   a. Gas: 520.819 MMscf
   b. No. 2 Oil (ULSD): 1,231,304 gal

2. The Permittee shall be permitted to burn No. 2 Oil (ULSD) only during periods of:
   a. Periodic testing of No. 2 Oil (ULSD), maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year; or

b. Gas curtailment and supply interruption by the natural gas provider.

3. Maximum No. 2 Oil (ULSD) Sulfur Content (% by weight, dry basis): 0.0015

4. The Permittee shall comply with the inspection and tune-up requirements in accordance with 22a-174-22e(i).

PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

A. Criteria Pollutants

1. Natural Gas

Pollutant	lb/MMBtu
PM_{10}	0.0074
$PM_{2.5}$	0.0074
SO_2	0.0006
NOx	0.011
VOC	0.0054
CO	0.037
Pb	4.9 E-07

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2. No. 2 Oil (ULSD)

Pollutant	lb/MMBtu
PM_{10}	0.0167
$PM_{2.5}$	0.011
SO_2	0.0015
NOx	0.09
VOC	0.0014
CO	0.039
Pb	9.0 E-06

B. Maximum Allowable Annual Emissions

Emission limits are combined worst case for each pollutant for this unit using either natural gas or No. 2 Oil (ULSD) or a combination thereof:

Pollutant	Tons/Year
PM_{10}	2.74
$PM_{2.5}$	2.74
SO_2	0.24
NOx	9.6
VOC	1.1
CO	9.9
Pb	8.5E-04

C. 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]

D. Opacity

This equipment shall not exceed 10% opacity during any six minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9.

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

1. Natural Gas
   - *VOC, SO_2, $PM_{10/2.5}$, Lead: AP-42 Fifth Edition Volume I, Chapter 1.4, Table 1.4-2 (July 1998)*
   - *NOx: Latest Stack Test Data*
   - *CO: Guaranteed Vendor Emissions Factor*

2. No. 2 Oil (ULSD)
   - *$PM_{10/2.5}$, VOC, SO_2, Lead: AP-42 Fifth Edition Volume I, Chapter 1.4, Table 1.4-2 (July 1998)*
   - *CO: Guaranteed Vendor Emissions Factor*
   - *NOx: Latest Stack Test Data*
   - *Opacity: Stack Test Data (No. 2 Oil [ULSD])*

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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 continuously monitor fuel consumption using a non-resettable totalizing fuel meter for each fuel.

2. The Permittee shall perform inspections of the burners and flue gas recirculation system as recommended by the manufacturer.

B. Record Keeping

1. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption for each fuel. The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) 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 maintain records of the sulfur content of the No. 2 Oil combusted and the quantity purchased for combustion. A written certification or a written contract with a fuel supplier is sufficient to satisfy this requirement if the certification or contract identifies:

(1) The name of the fuel seller;
(2) The type of fuel purchased;
(3) The sulfur content of the fuel purchased; and
(4) The method used to determine the sulfur content of the fuel purchased.

3. The Permittee shall calculate and record the monthly and consecutive 12 month PM, PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, and Lead emissions in units of pounds or 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. 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 of all of No. 2 Oil (ULSD) firing. The records shall contain the following information:
   a. Hours of operation;
   b. Reason for operation; and
   c. Notice of natural gas curtailment or supply interruption from fuel supplier, if applicable.

5. The Permittee shall keep records of monthly, cumulative monthly, and calendar year hours of operation on No. 2 Oil (ULSD) during periods of periodic testing of liquid fuel, maintenance, or operator training. The cumulative monthly records shall be determined by adding the current month's hours to the hours of the previous months in such calendar year. The Permittee shall make these calculations within 30 days of the end of the previous month.

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6. The Permittee shall make and keep records of all maintenance and tune-up activities for this unit in accordance with 22a-174-22e(j)(2).

7. The Permittee shall make and keep records of all inspections of the burners and flue gas recirculation system.

8. The Permittee shall keep records of manufacturer written specifications and recommendations for operation and maintenance.

9. The Permittee shall comply with the applicable record keeping requirements of RCSA Section 22a-174-22e(j).

10. 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

1. The Permittee shall comply with the applicable reporting requirements of RCSA Section 22a-174-22e(k).

2. The Permittee shall comply with the record keeping and reporting requirements in 40 CFR §60.48c.

3. The Permittee shall notify the commissioner in writing of any exceedance of an operating parameter, and shall identify the cause or likely cause of such exceedance, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows:

a. For any hazardous air pollutant, no later than 24 hours after such exceedance commenced; and
b. For any other regulated air pollutant or operating parameter, no later than ten days after such exceedance commenced.

4. The Permittee shall notify the commissioner in writing of any malfunction of the boiler or the air pollution control equipment. Permittee shall submit such notification within ten days of the malfunction. The notification shall include the following:
   a. a description of the malfunction and a description of the circumstances surrounding the cause or likely cause of such malfunction; and
   b. a description of all corrective actions and preventive measures taken and/or planned with respect to such malfunction and the dates of such actions and measures.

5. The Permittee shall notify the commissioner, in writing, of the date of commencement of construction and the date of the initial startup of this equipment. Such written notifications shall be submitted no later than 30 days after the subject event.

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 at www.ct.gov/deep/stacktesting.

B. Initial stack testing shall be required for the following pollutants:

☒ NOx (both fuels) ☒ Opacity (No. 2 Oil [ULSD] only)

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C. The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate, but not later than 180 days after initial startup. The Permittee shall submit test results within 60 days after completion of testing.

D. For testing being conducted pursuant to 40 CFR Part 60, the test report shall be submitted within 180 days after the initial startup date or within 60 days after reaching maximum production rate. [40 CFR §60.8(a)]

E. Recurrent stack testing for NOx shall be conducted within five years from the date of the previous stack test. Recurrent testing for Opacity shall be in accordance with 40 CFR §60.47c(a)(1) and shall follow the applicable schedule in 40 CFR §§60.47c(a)(1)(i) through (a)(1)(iv), where "calendar month" includes any day within such month.

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

PART VI. OPERATION AND MAINTENANCE 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 and maintain this equipment, air pollution control equipment, and monitoring 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 properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

PART VII. SPECIAL REQUIREMENTS

A. The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times.

Title 40 CFR Part 60, Subparts Dc and A

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

B. The Permittee shall comply with all applicable sections of the following National Emission Standards for Hazardous Air Pollutants at all times.

Title 40 CFR Part 63, Subparts DDDDD and A

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

C. Premises Emissions Summary

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1. On January 1st of each calendar year, if the potential emissions of NOx and/or VOC from the premises are equal to or greater than 25 tons per year per pollutant, then for such pollutant(s), the Permittee shall:
   a. Monitor NOx and/or VOC emissions, as applicable, from the premises for such calendar year.
   b. Calculate and record annual NOx and/or VOC emissions, as applicable, from the premises for such calendar year, in units of tons. The Permittee shall make these calculations on or before February 1st of the following year with respect to the previous calendar year. Such records shall include a sample calculation(s).
   c. If actual NOx and/or VOC emissions, as applicable, from the premises are equal to or greater than 25 tons for such calendar year, the Permittee shall submit to the commissioner, on or before March 1st of the following year, an annual emissions summary with respect to the premises for the previous calendar year. Such summary shall be submitted on forms prescribed or provided by the commissioner.

2. A Permittee is exempt from Part VII.C.1 requirements of this permit if, on January 1st of the subject year, the premises was operating in accordance with any of the following:
   a. A valid Title V permit issued pursuant to RCSA section 22a-174-33;
   b. RCSA section 22a-174-33a; or
   c. RCSA section 22a-174-33b

D. The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]

E. 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 Sections 22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

F. The Permittee shall resubmit for review and approval a Best Available Control Technology (BACT) analysis if such construction or phased construction has not commenced within the 18 months following the commissioner's approval of the current BACT determination (i.e., the date of this permit) for such construction or phase of construction. [RCSA §22a-174-3a(j)(4)]

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 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.

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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; Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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