



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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UNITED TECHNOLOGIES CORPORATION )
PRATT & WHITNEY )
NORTH BERWICK, MAINE )
A-453-71-T-R/A (SM) )
DEPARTMENTAL
FINDING OF FACT AND ORDER
AIR EMISSION LICENSE
RENEWAL/AMENDMENT

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 Control, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Pratt & Whitney (P&W), located on Route 9 in North Berwick, has submitted an application to renew and amend their air emission license. Major activities at the facility involve manufacture and overhaul/repair of aircraft engine parts. The amendment to Pratt & Whitney's air license updates the current equipment at the facility after the removal of several units. It also addresses the facility's conversion from burning #6 fuel oil to natural gas.

The following summarizes the changes that have been made since the issuance of the last renewal air license (A-453-71-R-R/A) issued June 5, 2007. These updates include the changes per Amendment #1 (A-453-71-S-A) issued September 9, 2008 along with several updates as mentioned below.

- The combustion of No.6 fuel oil in the three facility boilers (Emission Unit IDs 446708, 446709, and 446517) was discontinued in 2011. The remaining fuel oil in the storage tanks was either burned in 2011, or sold. The storage tanks were taken out of service in November 2011. The fuel oil piping was removed from the boilers so that there is no longer the capability of burning #6 fuel oil. The list of fuel burning equipment (Section B of this license renewal) has been amended to reflect that the three boilers are now only capable of burning natural gas.
Since the facility discontinued burning #6 fuel oil prior to May 20, 2011, the facility is not subject to the 40 CFR Part 63 Subpart JJJJJ (Area Source Boiler MACT) and thus did not submit an initial notification. Also, since the facility only fires natural gas, it has

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requested to drop the requirement to operate the Continuous Opacity Monitor (COM) system for Boiler #3, as described in greater detail in Section II.

- Due the firing of only natural gas at the facility, Pratt & Whitney has requested the total licensed allowed ton per year emissions from the facility to be reduced to a level below 06-096 CMR 137 reporting.
- The two 2.8 MMBtu/hr space heaters in the CSRS building (Emission Unit ID's R471848 and R471849) were replaced with three smaller space heaters. They have been removed from the Section B Fuel Burning Equipment list in this license renewal. Since the new, smaller replacement space heaters are each rated at 0.45 MMBtu/hr, they are classified as insignificant sources per 06-096 CMR 115 Appendix B.
- Three Ceramic Coater Booths 4, 5, and 6 (Emission Unit ID's 537184, 538098, and 538099) were modified such they use only hydrogen and no longer use natural gas. The natural gas is used to fire a separate heater to raise or maintain the temperature of the part to a certain level. Unlike the use of hydrogen, the use of natural gas requires a separate burner and these have been removed from Booths 4, 5, and 6. These units (Booths 4, 5, and 6) are now considered insignificant per 06-096 CMR 115 Appendix B and will be removed from the license. Booths 1, 2, and 3 have the capability to use both natural gas (to heat the part) and hydrogen and therefore remain as licensed sources.
- The old Fire Pump #2 (Emission Unit ID R446786) was replaced by a new Fire Pump #2 (Emission Unit ID 479069) and the old Fire Pump #1 (Emission Unit ID R471848) was abandoned in place. These changes were addressed in Air Emissions License Amendment, A-453-71-S-A, issued September 9, 2008 which incorporated the applicable requirements of the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart III.
- In the current air emissions license (A-453-71-R-R/A), all diesel-fired units were shown as combusting fuel oil with a sulfur content of 0.05% by weight. This value has been changed in this renewal air emissions license to 0.0015% by weight to reflect new licensing requirements and that the sulfur content of the fuel delivered at the facility is limited to 15 ppm.
- The emergency generators are subject to the 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)*. The facility will meet the applicable requirements for these units based on the age and size of the engines and the facility status as an area source of HAP.

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- The existing license shows Emission Unit ID E250096 (Stack # 100 F01 00-17) on the Section D Process Equipment list. This is a vent for a flammable cabinet located outside of the ORO Rubber Room. Further investigation has shown that this vent actually exhausts back into the facility and not outside as previously concluded. This source has thus been removed from the air emissions license.
- The following equipment was removed since the issuance of the last air emissions license:

Equipment	Pollution Control	Root Stack Identification Number *
Ceramic Coater Booth 4	HEPA Filter	100 S29 11-00
Ceramic Coater Booth 5	HEPA Filter	100 S25 27-00
Ceramic Coater Booth 6	HEPA Filter	100 S25 19-00
Fire Pump #1 (abandoned in place)	None	810 SWC 14-25
Fire Pump #2 (old – replaced)	None	800 SWC 12-25
Space Heater #1 - CSRS	None	100 SWC 05-49
Space Heater #2 - CSRS	None	100 SWC 311-47
Adhesive Bond Flammable Cabinet	None	100 F01 00-17

\* The first three digits represent the building number, the next three digits represent the building support column, the next two digits represent the number of feet in the easterly direction, and the last two digits represent the number of feet in the northerly direction.

B. Emission Equipment

Pratt & Whitney is licensed to operate the following air emission units listed in Tables 1 and 2:

**TABLE 1  
 FUEL BURNING EQUIPMENT**

Emission Unit ID	Type of Equipment (boiler, furnace, engine, etc.)	Maximum Design Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type (and % sulfur)	Date of Manufacture	Stack #	Control Device
446708	Boiler #1	30	30,000 cf/hr	Natural Gas	1963	100 B19 29-30	N/A
446709	Boiler #2	24	24,000 cf/hr	Natural Gas	1978	100 B19 12-28	N/A

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446517	Boiler #3	52	52,000 cf/hr	Natural Gas	1990	100 B20 20-30	N/A
R46249	Emergency Generator #1	0.6	563 cf/hr	Natural Gas	1963	100 T37 06-34	N/A
446784	Emergency Generator #2	1.0	7.04 gal/hr	Diesel, 0.0015%	1979	941 SWC 01- 09	N/A
446785	Emergency Generator #3	0.9	6.5 gal/hr	Diesel, 0.0015%	1979	500 SWC 83- 55	N/A
R46250	Emergency Generator #4	0.6	563 cf/hr	Natural Gas	1963	100 S09 06-00	N/A
446783	Emergency Generator #5	0.9	6.75 gal/hr	Diesel, 0.0015%	1979	Portable	N/A
479069	Fire Pump #2	1.3	9.5 gal/hr	Diesel, 0.0015%	2008	800 SWC 12- 25	N/A
529407	Ceramic Coater Booth 1	1.68	1,680 cf/hr	Natural Gas	1987	100 S29 05-00	HEPA Filter
529408	Ceramic Coater Booth 2	1.68	1,680 cf/hr	Natural Gas	1987	100 S29 27-00	HEPA Filter
529409	Ceramic Coater Booth 3	1.68	1,680 cf/hr	Natural Gas	1987	100 S29 15-00	HEPA Filter
478156	Evaporator	1.04	1,150 cf/hr	Natural Gas	2003	100 B31 09-18	N/A

TABLE 2  
 PROCESS EQUIPMENT

Emission Unit ID	Type of Equipment	Date of Manufacture	Date of Installation	Stack # <sup>1</sup>	Control Device
540709	Pyrolysis Oven	1996	1997	100 H08 06-10	Afterburner
540708	Pyrolysis Oven	1996	1997	100 F22 12-19	Afterburner
400231 <sup>2</sup>	Pyrolysis Oven	2003	To be determined	To be determined	Afterburner
E250304	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 B01 00-14	N/A
E250005	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 C01 00-07	N/A
E250316	Room Vent/ ORO Rubber Room	1997	1997	100 C01 00-13	N/A
E250007	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 D01 00-26	N/A
E250747	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 D01 00-39	N/A
E250016	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 E01 00-35	N/A
E250014 E250587	Compactor / Cabinets/ ORO Rubber Room	1997	1997	100 D01 00-20	N/A
E250095	Adhesive Bond Station/ ORO Rubber Room	1997	1997	100 D01 00-13	N/A

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E250975	Room Vent/ ORO Rubber Room	1997	1997	100 C01 00-25	N/A
477048	Acid/Alkali Tank	2000	2000	100 G32 08-32	Scrubber
477047	Acid/Alkali Tank	2000	2000	100 G32 08-22	Scrubber
477046	Acid/Alkali Tank	2000	2000	100 G32 08-10	Scrubber

1 The first three digits represent the building number, the next three digits represent the building support column, the next two digits represent the number of feet in the easterly direction, and the last two digits represent the number of feet in the northerly direction.

2 This is a new pyrolysis oven previously licensed however not installed. Section II of this license provides more detail and covers the BACT analysis.

The tables listed above have been updated. Some previously licensed equipment have been removed including Emergency Fire Pump #1 (R46254) and three ceramic coater booths (537184, 528098, and 538099).

#### C. Insignificant Emission Sources

Pratt & Whitney operates several other boilers, propane heaters, and processes at the facility, each under 1.0 MMBtu/hr heat input capacity or categorically exempt per 06-096 CMR 115, Appendix B. These processes, boilers, and heaters are mentioned only for inventory purposes and will not be included in short term emission rate calculations. These units are not listed in the license and do not need to be included in the facility's fuel use limit. A complete list of these units can be found in Pratt & Whitney's air license application received March 5, 2012.

#### D. Application Classification

The application for Pratt & Whitney includes the installation of new equipment, therefore, the license is considered to be an amendment and renewal of current licensed emission units. The license was processed per the requirements of 06-096 CMR 115 of the Department's regulations. Pratt & Whitney is not requesting an increase in the annual fuel use limit or increases in process emissions, therefore, the facility-wide ton per year emissions will not increase. In fact, with the switch to natural gas fired in the boilers the facility has requested to reduce the annual facility-wide licensed allowed ton per year emissions for all criteria pollutants.

With the fuel use limit on the boilers, the operating hours restriction on the emergency generators and current licensed limits on the process, the facility is licensed below the major source thresholds and is considered a synthetic minor. All new units included in this license are subject to Best Available Control Technology (BACT).

## 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 *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

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. Boilers

Pratt & Whitney operates three main boilers for the facility's heat, steam, and hot water needs. Boiler #1 is rated at a maximum design capacity of 30 MMBtu/hr and manufactured in 1963, Boiler #2 is rated at 24 MMBtu/hr and manufactured in 1978, and Boiler #3 is a 52.4 MMBtu/hr boiler which was installed in 1990. Due to its size and year of installation, Boiler #3 is subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

All three boilers had been previously licensed to fire both #6 fuel oil and natural gas, however, now all three units will only fire natural gas. The capability to fire #6 fuel oil has been removed. Based on the firing of natural gas, the comparing of similar sized boilers at other facilities, and an annual fuel limit capping the natural gas use per year, emissions from these boilers meet BPT. No additional pollution control equipment is warranted at this time.

In 2011, P&W discontinued the use of #6 fuel oil in the boilers and has removed the associated pumps and piping. The only available source of fuel for the boilers is natural gas. Due to the size and age of Boiler #3, it is subject to 40 CFR Part 60, Subpart Dc.

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Pursuant to 40 CFR Part 60.47c, facilities combusting coal, oil, or wood must implement a Continuous Opacity Monitor System (COMS). Natural gas is now the sole fuel fired in Boiler #3, with all the piping and tanks associated with fuel oil burning no longer operational. Per 40 CFR Part 60.45b, "the permitting authority may exempt owners or operators of affected facilities burning only natural gas from the opacity monitoring requirements". The Department does not believe particulate matter or opacity will be an issue from firing natural gas in Boiler #3, therefore, the requirement for P&W to operate the COMS on Boiler #3 will be dropped upon issuance of this air license renewal.

1. A summary of the BPT analysis for Boilers #1, #2, and #3 is the following:
  - P&W will limit the maximum combined amount of natural gas fuel fired in Boilers #1, #2, and #3 to 229,687,500 cubic feet based on a 12-month rolling total.
  - Chapter 103 regulates PM emission limits. The PM<sub>10</sub> limits are derived from the PM limits.
  - NO<sub>x</sub> emission limits are based on data from similar #6 oil-fired boilers of this size and age.
  - CO and VOC emission limits are based upon AP-42 data dated 9/98.
  - Visible emissions from each boiler (Boilers #1, #2, #3) shall not exceed 10% opacity on a six (6) minute block average basis, except for no more than two (2) six (6) minute block averages in a 3-hour period.

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use both on a monthly and 12 month rolling total basis. Documentation shall include the type of fuel used and quantity.

3. 40 CFR Part 63 Subpart JJJJJ

Boilers #1, #2, and #3 fire only natural gas and are therefore not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ).

C. Plating Room

Pratt & Whitney operates a chemical surface treatment system (CSTS) for cleaning and plating operations. The CSTS portion of the manufacturing process treats various steel and titanium based alloy parts by immersion in chemical solution baths. Evaporation losses from these baths are collected and transported to air pollution control equipment

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before being exhausted to atmosphere. A separate building was constructed to house the CSTS scrubbers and fans in 2000.

The CSTS consists of four chemical treatment lines corresponding to the following processes:

- Wax/Dewax Line (line 1) for masking and unmasking parts before and after plating steps.
- Nickel Plating Line (lines 2 & 3) for nickel plating and nickel stripping of nickel-based, cobalt-based, steel, and stainless steel parts.
- Cleaning Line (line 4) for pickling of heat and corrosion resistant steels, acid cleaning of titanium and descaling and cleaning of steel.

Each process line contains the required tanks, pumps, filters and miscellaneous equipment to perform the necessary surface treatment operation. Parts are submerged in the process tanks for pre-determined time intervals, and then moved to the next stage of processing using automated hoists.

The CSTS includes push-pull tank ventilation, a tank vent collection system, mist eliminators at select tanks, and wet scrubbers to control emissions from tank vent gases and vapors. This equipment works in an integrated fashion, as a pollution control system, to achieve pollutant reductions consistent with BPT.

Based on testing, the mist eliminator pads and packed bed absorbers will be operated under the following conditions (as determined by the manufacturer) to ensure that the equipment operates at its maximum efficiency:

- The scrubber liquor will have a pH of 6.0-13.0
- Pressure drop across the pad from 0.5 to 4.0 inches of water
- Pressure drop across the packing bed from 1 to 5 inches of water

D. Metallizing Booths

Pratt & Whitney currently has several metallizing booths in operation. Each metallizing booth can perform one of the following specific functions: plasma spray, flame spray, abradable seal spray, or ceramic coating spray. The differences between these processes are minor. Each of the metallizing booths that perform a specific function can be slightly modified to perform another function. Three of the booths have the ability to burn natural gas for the application of ceramic type coating to substrates. These booths have a firing rate greater than 1 MMBtu/hr and therefore are not considered insignificant.

E. Emergency Generators and Fire Pump

Pratt & Whitney operates five emergency generators (Emergency Generator #1-#5) and one fire pump (Fire Pump #2) that are listed in Table 1. These emergency generators and fire pump will each operate less than 500 hours/year for emergency power needs and are equipped with an hour meter to record total hours of operation. The emergency generators and fire pumps shall combust natural gas or diesel fuel oil with a maximum fuel sulfur content of 0.0015% (15 ppm) by weight.

A summary of the BPT analysis for the facility's emergency generators is the following:

1. The emergency generators shall fire natural gas or diesel fuel with a maximum sulfur content not to exceed 0.0015% by weight.
2. The emergency generators 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 generator operating hours.
3. 06-096 CMR 106 regulates fuel sulfur content, however in this case a BPT analysis for SO<sub>2</sub> determined a more stringent limit of 0.0015% was appropriate and shall be used.
4. 06-096 CMR 103 regulates PM emission limits (0.12 lb/MMBtu). The PM<sub>10</sub> limits are derived from the PM limits.
5. NO<sub>x</sub>, CO, and VOC (4.41 lb/MMBtu, 0.95 lb/MMBtu, and 0.36 lb/MMBtu, respectively) emission limits are based upon AP-42, Table 3.3-1 dated 10/96.
6. Visible emissions from each emergency generator shall each not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.
7. Emissions from each generator shall not exceed the following, based on the largest diesel generator operating at 1.0 MMBtu/hr:

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator (each)	0.12	0.12	0.1	4.4	1.0	0.4

40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the emergency generators listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP

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source and are not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements.

Emergency Definition:

Emergency stationary reciprocating internal combustion engine (RICE) is defined in 40 CFR Part 63, Subpart ZZZZ as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Stationary RICE used for peak shaving are not considered emergency stationary RICE. Stationary RICE used to supply power to an electric grid or that supply non-emergency power as part of a financial arrangement with another entity are not considered to be emergency engines, except as permitted under §63.6640(f).

§63.6640(f) limits maintenance checks and readiness testing of the units to 100 hours per year. Emergency stationary RICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.

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40 CFR Part 63, Subpart ZZZZ Requirements:

	<b>Compliance Dates</b>	<b>Operating Limitations* (40 CFR §63.6603(a) and Table 2(d))</b>
Compression ignition (diesel, fuel oil) units: (Gen #2, #3, #5)	No later than May 3, 2013	<ul style="list-style-type: none"> <li>- Change oil and filter every 500 hours of operation or annually, whichever comes first;</li> <li>- Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first;</li> <li>- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary</li> </ul>
Spark ignition (natural gas, propane) units: (Gen #1, #4)	No later than October 19, 2013	<ul style="list-style-type: none"> <li>- Change oil and filter every 500 hours of operation or annually, whichever comes first;</li> <li>- Inspect spark plugs every 1000 hours of operation or annually, whichever comes first;</li> <li>- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary</li> </ul>

\* Note: Due to the 500 hour operation limit on each generator, the inspections and oil/filter changes shall be performed annually to meet the requirements of 40 CFR Part 63, Subpart ZZZZ.

The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or P&W shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

The generators shall each be limited to 100 hours/year for maintenance and testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another

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entity). A maximum of 15 hours per year (of the 50 hours/year) may be used as part of a demand response program. [40 CFR §63.6640(f)(1)]

P&W shall keep records that include maintenance conducted on the five emergency generators and the hours of operation of each engines recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generators are used for demand response operation, P&W must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR §63.6655(e) and (f)]

Fire Pump #2

P&W installed a diesel powered emergency fire pump (Fire Pump #2 rated at 1.3 MMBtu/hr) which was licensed through Air Emissions License, A-453-71-S-A, issued September 10, 2008. Fire Pump #2 (manufactured in 2008) is a Patterson Model split-case fire pump and will meet the definition of emergency generator per state and federal rules.

NSPS Generator Requirements (40 CFR Part 60, Subpart III)

The federal regulation 40 CFR Part 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to Fire Pump #2 since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart III, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

Emergency Definition:

Emergency stationary internal combustion engine is defined in 40 CFR Part 60, Subpart III as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

40 CFR Part 60, Subpart III Requirements:

The fire pump shall be certified by the manufacturer, meeting the emission standards for new non-road compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]

The diesel fuel fired in the fire pump shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 CFR §60.4207(b)]

A non-resettable hour meter shall be installed and operated on the fire pump. [40 CFR §60.4209(a)]

The fire pump shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by P&W that are approved by the engine manufacturer. P&W may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

The fire pump shall be limited to 100 hours/year for maintenance and testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). [40 CFR §60.4211(f)]

No initial notification is required for emergency engines. [40 CFR §60.4214(b)]

#### Best Practical Treatment (BPT)

A summary of BPT analysis, which incorporates the NSPS requirements, for Fire Pump #2 (1.3 MMBtu/hr) is the following:

1. Fire Pump #2 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.
2. Fire Pump #2 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Fire Pump #2 shall be limited to 500 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
3. Fire Pump #2 shall be equipped with a non-resettable hour meter.
4. PM, CO, and NO<sub>x</sub> + VOC emission limits are based on emission limits set forth in 40 CFR 60, Subpart III.
5. P&W shall operate and maintain Fire Pump #2 in accordance with the manufacturer's written instructions. P&W shall not change settings that are not approved in writing by the manufacturer.
6. Visible emissions from the Fire Pump #2 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.
7. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu
Fire Pump #2	PM	0.12

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #2	0.2	0.2	0.1	5.7	1.2	0.5

F. Pyrolysis Process/ Bake-off

P&W uses pyrolysis ovens in the course of manufacturing, overhauling and repair of parts returned from the field. The ovens are an integral part of the manufacturing and overhaul process. Operation of the ovens is noncontinuous, commonly referred to "batch" cycles where parts are accumulated prior to starting the oven or performing the heat treatment. Three important functions are performed in these ovens:

1. removal of inaccessible maskant coating that was used to protect the part during manufacturing,
2. removal of rubber products. The rubber product is used in the engine in various capacities such as dampening agents, air path seals, etc. A part of the overhaul process is to remove the rubber and replace with new rubber as the part is being repaired,
3. final step in the manufacturing of a metallic abradable coating.

Manual and machine removal is done prior to placing the parts into the oven. Oven controls are strictly monitored to accomplish the required heat treatment to perform the above functions. Basic metal considerations are an integral part of the oven cycle times. It is important to assure proper engineering function is not compromised while reducing the organic material (maskant, abradable, or rubber product) to ash.

The ovens incorporate secondary combustion chambers to reduce the particulate and hydrocarbon emissions from the primary chamber. The secondary combustion chamber will burn auxiliary fuel to elevate the temperature of the exhaust gas from the primary chamber. The secondary chamber will, like the primary chamber, be fueled with natural gas. In order to assure proper performance of the secondary combustion chamber, the secondary chamber has been designed to assure a minimum residence time of 0.5 seconds at 1300°F. The secondary combustion chamber, when designed and operated in accordance with the license conditions will constitute BPT as defined in 06-096 CMR 100 of the Department's regulations

G. Adhesive Bonding Stations

At the adhesive bonding stations, acetone and isopropyl alcohol (2-propanol or IPA) are manually used for cleaning purposes for the application of rubber to parts. The solvents are

stored in quart containers and applied to the parts using cotton swabs. Some solvent evaporates to the workroom air from the open containers and during the cleaning operation. The workspace is ventilated to keep acetone and IPA concentrations low by the use of 12 exhaust vents which have a combined flow rate of approximately 65,000 ACFM.

An analysis of the operation was performed to simulate a worst case scenario of production in the adhesive bonding area. The control techniques of thermal incineration and activated carbon adsorption were evaluated. One common device to serve the 12 vents was assumed since it provided the most conservative cost estimate.

Based on the cost of these add-on technologies and the relatively low emissions from the operation, the Department does not consider adsorption/incineration control cost effective and is therefore unreasonable for this application. Current operating practices at P&W, using small amounts of solvent and only what is needed, represent BPT for the adhesion bonding area.

#### H. Cleaning Tanks

P&W has implemented pollution prevention efforts over the past 20 years that have eliminated halogenated solvent vapor degreasers. P&W has installed alkaline cleaning to replace the use of solvent degreasing. The vented tanks will contain a low concentration of alkali solution heated to a maximum temperature of approximately 180°F. The cleaning product that Pratt & Whitney plans to use is an aqueous alkaline solution with no VOCs based on the manufacturer's Material Safety Data Sheets (MSDS).

Wet packed bed scrubbers are not economically justifiable for controlling the low emissions of weak alkaline from the cleaning tanks. Data from the RACT/BACT/LAER Clearinghouse, found similar processes that did not require a scrubber and considered mist eliminators to be BACT. To meet BPT, P&W has installed and operates a chevron blade mist eliminator and a mesh pad mist eliminator near the ventilation hoods servicing each of the tanks.

#### I. Evaporators

The evaporators will be used to perform dewatering of machine coolant. The ENCON 96 unit at 1.04 MMBtu/hr is the only evaporator with a heat input capacity greater than 1.0 MMBtu/hr. The ENCON 96 unit is not considered insignificant and therefore needs to be licensed and is subject to BPT. Based on the potential emissions associated with a natural gas burning unit of this size, no add-on control technology would be economically justified. BPT will be the use of natural gas and good combustion and maintenance performance. The natural gas used in these units will be included for calculation of the total facility-wide natural gas use. Because of the size, there are no short-term emission limits for these units. Visible emissions from the natural gas fired ENCON 96 evaporator shall not exceed 10% opacity on a 6 minute block average.

J. Parts Washers

P&W operates several parts washers throughout the facility. Most of the units operate with soap detergent, however, at the time of this application 4 units at the maintenance shop operate with mineral oil. P&W will operate all applicable parts washer in accordance with 06-096 CMR 130 (as amended) *Solvent Cleaners*, and records shall be kept documenting compliance.

K. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

L. General Process Emissions

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period.

M. Facility Emissions and Fuel Use Caps

The three main boilers (Boilers #1, #2, and #3) have recently been converted to burn only natural gas. Total ton per year emissions have decreased significantly with the conversion of the main boilers to burn only natural gas. Fuel usage is restricted for the boilers to 230,000,000 cubic feet of natural gas per year, based on a 12-month rolling total. The emergency diesel generators and fire pump can fire up to 500 hours per year each.

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

(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boilers (#1, #2, #3)	1.0	1.0	0.1	11.6	9.8	0.7
Emergency Generators and Fire Pumps	0.2	0.2	0.1	5.9	1.3	0.5
Emissions from process equipment including; nitric acid, ceramic coating areas, & adhesive bonding stations	0.5	0.5	1.1	7.4	4.5	23.7

<b>Total TPY</b>	<b>1.7</b>	<b>1.7</b>	<b>1.3</b>	<b>24.9</b>	<b>15.6</b>	<b>24.9</b>
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Pratt & Whitney also has a federally enforceable license limit on HAP emissions:

<u>Pollutant</u>	<u>Tons/year</u>
Any Single HAP	9.9
Total of all HAP	24.9

Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through ‘Tailoring’ revisions made to EPA’s *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO<sub>2</sub>e).

Based on the facility’s fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, P&W is below the major source threshold of 100,000 tons of CO<sub>2</sub>e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

**III. FEDERAL REGULATIONS**

A. 40 CFR Part 63, Subpart GG

40 CFR Part 63, Subpart GG *National Emission Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Facilities* applies to facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components and that are major sources as defined in § 63.2. P&W is considered a minor source which has accepted federally enforceable emission limits to be considered a “synthetic minor”, therefore, the facility is not subject to 40 CFR Part 63, Subpart GG.

B. 40 CFR Part 63, Subpart WWWW

P&W is subject to 40 CFR Part 63, Subpart WWWW *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*. The P&W affected areas that apply to this Subpart are the nickel plating line and three nickel plating tanks. The fume hood for each tank is equipped with a composite mesh pad and all the fume hoods exhaust into a packed bed scrubber with a mesh pad mist eliminator. The

facility also has 19 thermal spray booths each of which are equipped with a fabric filter baghouse and a HEPA filter. The current control for these processes represents the compliance method chosen to meet the subpart. P&W will continue to meet all applicable requirements of 40 CFR Part 63, Subpart WWWWWW.

C. 40 CFR Part 63, Subpart HHHHHH

P&W reviewed the applicability of 40 CFR Part 63, Subpart HHHHHH *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*. The facility reviewed the Subpart's applicability "checklist" and specifically does not use methylene chloride for any of its paint stripping activities nor does the facility use spray guns for painting operations. Therefore, P&W determined that 40 CFR Part 63 Subpart HHHHHH does not apply to its current operations.

D. Aerospace CTG

Pratt & Whitney is subject to the Aerospace Control Technique Guideline (CTG) (EPA-453/R-97-004 dated December 1997). This CTG is intended to supersede any potential applicability of the Miscellaneous Metal Part and Products CTG (RACT) requirements for manufacturing and rework operations of aerospace vehicles and components. Therefore, by meeting the Aerospace CTG, P&W is meeting the requirements of 06-096 CMR 129 for the surface coating of miscellaneous metal parts and products. P&W shall meet the VOC limits in the Aerospace CTG as specified in Condition (25) of this Order.

As part of the CTG, the following recordkeeping guidance may be used for units which are subject to enforceable emission restrictions as required by this renewal license. The Department may approve alternative record keeping where the record keeping methods below are inappropriate for a unit.

1. Fuel Burning Equipment including space heaters

For fuel burning equipment with or without control, records shall include the following:

- quantity of fuel consumed per month,
- heat content of fuel, and
- the lb/MMBtu air emission factor for each pollutant and indicate whether or not control was considered into the air emission factor

Depending on the fuel type utilized, the records for each fuel type shall be in the following units of measure:

FUEL TYPE	QUANTITY	HEAT CONTENT
gaseous fuel	scf/month	MMBtu/scf

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For process emission equipment which also burns fuel, records shall be kept as required by each section of the CTB for both the emissions associated with the combustion of the fuel and the emissions associated with the process itself.

2. Emergency Generators and Fire Pumps

For emergency generators and fire pumps, records shall include the following:

- hours of operation per month (hr/month), documenting less than 500 hours per year on a 12 month rolling total basis,
- maximum gallon per hour firing rate capacity per generator (gal/hr),
- the MMBtu per gallon heat content of the fuel (MMBtu/gal),
- the % sulfur content of the fuel by weight, and
- a lb/MMBtu air emission factor for each pollutant and indicate if the factor is with or without the consideration of a control device.

NOTE: The sole function of an emergency generator is to provide back-up power when electrical power from the local utility is interrupted and the engine must operate less than 500 hours per year.

3. Process Emissions

For process emissions with or without control, records shall include the following:

- quantity in pounds of processed material per month or the quantity in numbers of finished product per month (i.e. gal/month or finished product/month),
- pounds of emission per processed material or finished product air emission factor for each pollutant (i.e. lb pollutant/gal or lb pollutant/finished product), and indicate if the factor is with or without the consideration of a control device, and
- the % control efficiency for each pollutant, if control equipment is used.

For process emission equipment, which also burns fuel, records shall be kept as required by each section of the CTG for both the emissions associated with the combustion of the fuel and the emissions associated with the process itself.

The use of materials in the bond stations (solvents, silicones, lubricants, etc.), the use of solvents in the hand-wiping operations, the use of the maskant in the maskant operations, and the use of the alkaline cleaner in the tank lines are all based on disbursement data from the on-line chemical management system. The usages of the hydrofluoric acid, hydrochloric acid, and nickel compounds in the tank lines are determined from actual usage logsheets maintained by the plating department.

It is assumed that all material volatile organic compounds (excluding acetone which is an exempt VOC) are emitted during application in the bond stations and handwiping operations. For the glycol ethers, hydrofluoric acid, hydrochloric acid, and nickel compounds used in the tank lines, it is assumed that approximately five percent of the

quantities added to replenish routine processing losses are evolved from the process solution and that approximately 99 percent of the captured liquid particulate is removed by the scrubbers. Note that it is assumed that there are no emissions associated with any material added to make up a new tank solution after a tank dump. There is no VOC or HAP associated with the use of the maskant that is subsequently burned off in the pyrolysis ovens.

4. Fugitive Emissions

For fugitive emissions, to the extent that they can be quantified, records shall contain the duration in hours per month of the fugitive event (hr/month) and a pound per hour air emission factor for each pollutant (lb emission/hr duration).

5. Other Emission Sources

For other emission sources, records shall include the following:

- the hours of operation per month or the quantity of processed material per month,
- an air emission factor in pounds per hour for each pollutant or a pound of emission per processed material air emission factor for each pollutant, and indicate if the factor is with or without consideration of a control device, and
- the % control efficiency for each pollutant, if control equipment is used.

6. Control Equipment

For control equipment of the above emission units, the following records shall be maintained which demonstrate the effectiveness of the control equipment:

- a) For baghouses, the records shall be a maintenance log recording the date and location of all bag failures as well as all routine maintenance procedures.
- b) For:

- |                  |                                       |
|------------------|---------------------------------------|
| 1) wet scrubbers | 4) electrostatic precipitators (ESPS) |
| 2) cyclones      | 5) water sprays                       |
| 3) filters       |                                       |

and any other control equipment, records shall be a maintenance log recording the date and reasons for all emission upsets as well as all routine maintenance procedures.

#### IV. AMBIENT AIR QUALITY ANALYSIS

P&W previously submitted an ambient air quality analysis for air emission license A-453-73-G-A/R issued March 5, 1996 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, and
- will not violate applicable ambient air quality standards, or increment standards either alone or in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-453-71-T-R/A, 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 M.R.S.A. §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. [06-096 CMR 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. [06-096 CMR 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. [06-096 CMR 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-A. [06-096 CMR 115]

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- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 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. [06-096 CMR 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. [06-096 CMR 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. [06-096 CMR 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. [06-096 CMR 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.
- [06-096 CMR 115]

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- (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.
- [06-096 CMR 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. [06-096 CMR 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 emissions 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. [06-096 CMR 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. [06-096 CMR 115]

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**SPECIFIC CONDITIONS**

**(16) Boilers #1, #2, and #3**

**A. Fuel**

Total fuel use for Boilers # 1, #2, and #3 shall not exceed 230,000,000 cubic feet of natural gas per year, based on a 12-month rolling total. [06-096 CMR 115, BPT]

**B. Emissions shall not exceed the following:**

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1, #2, #3 (each)	PM	0.12	06-096 CMR 115, BPT

**C. Emissions shall not exceed the following: [06-096 CMR 115, BPT]**

Equipment	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	1.5	1.5	0.1	3.0	2.5	0.2
Boiler #2	1.2	1.2	0.1	2.4	2.0	0.2
Boiler #3	2.6	2.6	0.1	5.1	4.3	0.3

[06-096 CMR 115, BPT]

**D. Visible emissions from each boiler shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]**

**E. Boiler #3 is subject to 40 CFR Part 60, Subpart Dc and shall comply with all applicable requirements including, but not limited to, the following:**

1. P&W shall record and maintain records of the amounts of each fuel combusted during each day or, if applicable, monthly records with fuel certifications. The licensee shall calibrate, operate, and maintain an O<sub>2</sub> trim system and fuel use meter (manual daily recordings) for Boiler #3. [40 CFR §60.48c(g)]
2. P&W shall submit to EPA and the Department semi-annual reports. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each 6-month period.
3. The following address for EPA shall be used for any reports or notifications required to be copied to them:

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Compliance Clerk  
 USEPA Region 1  
 5 Post Office Sq. Suite 100  
 Boston, MA 02109-3912

**(17) Cleaning & Plating Operations**

- A. Acid and alkali tanks in the CSTS area shall be controlled by mist eliminator pads and packed bed absorbers. The mist eliminator pads and packed bed absorbers shall be operated under the following restrictions to ensure that the equipment operates at its maximum efficiency:
- The scrubber liquor shall have a pH of between 6.0-13.0
  - Pressure drop across the pad shall be maintained between 0.5 to 4.0 inches of water.
  - Pressure drop across the packing bed shall be maintained between 1 and 5 inches of water.
- B. The periodic monitoring of pH and pressure drop shall be recorded three times a day in a logbook either manually or electronically.

[06-096 CMR 115, BPT]

- (18) Pratt & Whitney currently operates two pyrolysis ovens and is licensed to install an additional pyrolysis oven in the future. When the pyrolysis ovens operate, Pratt & Whitney shall operate the secondary combustion chambers with a minimum residence time of 0.5 seconds at 1300°F. A log shall be kept to document the residence time and temperature when these units are operating. [06-096 CMR 115, BPT]

- (19) The emissions from the metallizing booths and pyrolysis ovens shall be limited to the following:

Equipment	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Metallizing Booths (6)	0.01	0.01	0.01	0.07	0.01	0.01
Pyrolysis Oven (3)	0.01	0.01	0.01	0.15	0.03	0.01

\* Levels presented in the table are for one metallizing booth and one pyrolysis oven

[06-096 CMR 115, BPT]

- (20) The total VOC emissions from the facility shall not exceed 24.9 tons per year based on a 12-month rolling total. The pounds of VOC emissions are calculated by recording the VOC content and quantity of all material used at the facility and then applying emission factors, as warranted. P&W shall maintain records of monthly material disbursements, the

VOC content of each material issued, and any emission factors applied to refine the emission estimates. [06-096 CMR 115, BPT]

- (21) To avoid being subject to 06-096 CMR 140 and the Aerospace MACT, total licensed allowed annual HAP emissions for the facility are limited to:

Pollutant	Tons/year
Any Single HAP	9.9
Total of All HAP	24.9

The pounds of HAP emissions are calculated by recording the HAP content and quantity of all material used at the facility and then applying emission factors, as warranted. P&W shall maintain records of monthly material disbursements, the HAP content of each material issued, and any emission factors applied to refine the emission estimates. [06-096 CMR 115, BPT]

(22) **Emergency Generators #1, #2, #3, #4, and #5**

- A. The generators are each limited to 500 hours per year total operation, based on a 12 month rolling total. Compliance shall be demonstrated by a written log of operating hours for each generator. [06-096 CMR 115]
- B. The fuel oil sulfur content for the emergency generators shall be limited to 0.0015% sulfur. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BPT]
- C. Emissions from each generator shall not exceed the following, based on the largest generator operating at 1.0 MMBtu/hr. [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator	0.12	0.12	0.1	4.4	1.0	0.4

- D. Visible Emissions from each of the diesel generators shall not exceed 20% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [06-096 CMR 101]

E. The Emergency Generators #1, #2, #3, #4, and #5 shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. No later than May 3, 2013, P&W shall meet the following operational limitations for each of the compression ignition emergency generators (Generators #2, #3, & #5):
  - a. Change the oil and filter annually,
  - b. Inspect the air cleaner annually, and
  - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]

2. No later than October 19, 2013, P&W shall meet the following operational limitations for each of the spark ignition emergency generators (Generators #1 & #4):
  - a. Change the oil and filter annually,
  - b. Inspect the spark plugs annually, and
  - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]

3. A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

- a. The generators shall each be limited to 100 hours/year for maintenance and testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). A maximum of 15 hours per year (of the 50 hours/year) may be used as part of a demand response program. These limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §63.6640(f)(1) and 06-096 CMR 115]
- b. P&W shall keep records that include maintenance conducted on the five generators and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency

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and how many hours spent for non-emergency. If the generators are used for demand response operation, P&W must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR §63.6655(e) and (f)]

5. The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or P&W shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(23) **Back-up Diesel Fire Pump #2:**

- A. The Fire Pump #2 is limited to 500 hours per year total operation, based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]

- B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Fire Pump #2	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

- C. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Fire Pump #2	0.2	0.2	0.1	5.7	1.2	0.5

- D. Visible emissions from Fire Pump #2 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

- E. The Emergency Fire Pump #2 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:

1. The Fire Pump #2 shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]

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2. The diesel fuel fired in Fire Pump #2 shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]
3. A non-resettable hour meter shall be installed and operated on Fire Pump #2. [40 CFR §60.4209(a)]
4. Fire Pump #2 shall be limited to 100 hours/year for maintenance and testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving or generating income or a financial arrangement with another entity). These limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all engine operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]
5. Fire Pump #2 shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by P&W that are approved by the engine manufacturer. P&W may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

[06-096 CMR 115, BPT, 06-096 CMR 101, & 40 CFR Part 60 Subpart III]

- (24) Pratt & Whitney operates two evaporators used to perform dewatering of machine coolant. The units shall fire only natural gas and the total fuel use shall be included in Pratt & Whitney's current licensed allowed natural gas fuel use limit as specified in Condition (16)(A). Visible emissions from the natural gas fired evaporators shall not exceed 10% opacity on a 6 minute block average. [06-096 CMR 115, BPT]
- (25) Pratt & Whitney is subject to the Aerospace Control Technique Guideline (EPA-453/R-97-004 dated December 1997).
  - (a) Pratt & Whitney shall meet the VOC limits in the following table, taken from the Aerospace CTG: [EPA-453/R-97-004]

TABLE 4-1. SPECIALTY COATINGS VOC CONTENT LIMITS <sup>a</sup> (g/L)<sup>b</sup>

Coating type	Limit
Ablative Coating .....	600
Adhesion Promoter.....	890
Adhesive Bonding Primers:	

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Cured at 250°F or below .....	850
Cured above 250°F .....	1030
Adhesives:	
Commercial Interior Adhesive .....	760
Cyanoacrylate Adhesive .....	1,020
Fuel Tank Adhesive .....	620
Nonstructural Adhesive .....	360
Rocket Motor Bonding Adhesive .....	890
Rubber-based Adhesive .....	850
Structural Autoclavable Adhesive .....	60
Structural Nonautoclavable Adhesive.....	850
Antichafe Coating .....	660
Bearing Coating .....	620
Caulking and Smoothing Compounds.....	850
Chemical Agent-Resistant Coating .....	550
Clear Coating .....	720
Commercial Exterior Aerodynamic	
Structure Primer .....	650
Compatible Substrate Primer .....	780
Corrosion Prevention Compound.....	710
Cryogenic Flexible Primer .....	645
Cryoprotective Coating .....	600
Dry Lubricative Material .....	880
Electric or Radiation-Effect Coating.....	800
Electrostatic Discharge and Electromagnetic	
Interference (EMI) Coating.....	800
Elevated-Temperature Skydrol-Resistant	
Commercial Primer .....	740
Epoxy Polyamide Topcoat .....	660
Fire-Resistant (interior) Coating .....	800
Flexible Primer.....	640
Flight-Test Coatings:	
Missile or Single Use Aircraft.....	420
All Other.....	840
Fuel-Tank Coating.....	720

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High-Temperature Coating .....	850
Insulation Covering .....	740
Intermediate Release Coating .....	750
Lacquer.....	830
Maskants:	
Bonding Maskant.....	1,230
Critical Use and Line Sealer Maskant.....	1,020
Seal Coat Maskant.....	1,230
Metallized Epoxy Coating.....	740
Mold Release.....	780
Optical Anti-Reflective Coating .....	750
Part Marking Coating .....	850
Pretreatment Coating.....	780
Rain Erosion-Resistant Coating .....	850
Rocket Motor Nozzle Coating.....	660
Scale Inhibitor .....	880
Screen Print Ink.....	840
Sealants:	
Extrudable/Rollable/Brushable Sealant.....	280
Sprayable Sealant.....	600
Silicone Insulation Material .....	850
Solid Film Lubricant .....	880
Specialized Function Coating .....	890
Temporary Protective Coating .....	320
Thermal Control Coating .....	800
Wet Fastener Installation Coating.....	675
Wing Coating.....	850

<sup>a</sup> The definitions of the above coatings can be found in Appendix A of the Aerospace CTG.

<sup>b</sup> Coating limits are expressed in terms of mass (grams) of VOC per volume (liter) of coating less water and less exempt solvent.

- (b) The following coating applications are exempt from the VOC content limits listed in the above table:
- i. Touchup, aerosol, and Department of Defense (DOD) “classified” coatings,
  - ii. Coating of space vehicles,
  - iii. Facilities that use separate formulations in volumes of less than 50 gallons per year subject to a maximum exemption of 200 gallons total for such formulations applied annually.
- (c) Pratt & Whitney shall meet the VOC content limits for primers and topcoats stated in 40 CFR Sections 63.745 (c)(2) and (c)(4) and the VOC content limits for chemical milling maskants (Type I/II) stated in 40 CFR Section 63.747 (c)(2). These requirements do not apply if the facility uses separate formulations of primers, topcoats, and chemical milling maskants (Type I/II) in volumes of less than 50 gallons per year, subject to a maximum exemption of 200 gallons total for such formulations applied annually.
- (d) Pratt & Whitney shall meet the requirements of Section (B.3)(b) “Application Equipment”, Section (B.3)(c) “Solvent Cleaning”, and Section (B.3)(d) “Control Equipment and Monitoring”, as stated in the Aerospace CTG (EPA-453/R-97-004).
- (e) Pratt & Whitney shall maintain the following recordkeeping requirements and use the appropriate test methods per the Aerospace CTG:

i. RECORDKEEPING REQUIREMENTS

Each owner or operator using coatings listed in (B.3)(a) of the Aerospace CTG (EPA-453/R-97-004) shall:

- (1) Maintain a current list of coatings in use with category and VOC content as applied.
- (2) Record coating usage on an annual basis.

Each owner or operator using cleaning solvents required in (B.3)(c) of the Aerospace CTG (EPA-453/R-97-004) shall:

- (1) For aqueous and semiaqueous hand-wipe cleaning solvents, maintain a list of materials used with corresponding water contents.
- (2) For vapor pressure compliant hand-wipe cleaning solvents:
  - (i) Maintain a current list of cleaning solvents in use with their respective vapor pressures or, for blended solvents, VOC composite vapor pressures.
  - (ii) Record cleaning solvent usage on an annual basis.
- (3) For cleaning solvents with a vapor pressure greater than 45 mm Hg used in exempt hand-wipe cleaning operations:
  - (i) Maintain a list of exempt hand-wipe cleaning processes.
  - (ii) Record cleaning solvent usage on an annual basis.

Each owner or operator using control equipment under paragraph (B.3)(d) of the Aerospace CTG (EPA-453/R-97-004) shall record monitoring parameters as specified in the monitoring plan required under (B.3)(d)(2) of the Aerospace CTG (EPA-453/R-97-004). Except for Specialty Coatings, any source that complies with the recordkeeping requirements of the Aerospace NESHAP, 40 CFR 63.752, is deemed to be in compliance with the requirements of this paragraph (B.4).

ii. TEST METHODS

*Coatings*

For coatings which are not waterborne (water-reducible), determine the VOC content of each formulation (less water and less exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, Appendix A. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis. For water-borne (water-reducible) coatings, manufacturer's supplied data alone can be used to determine the VOC content of each formulation.

*Cleaning solvents*

1. For aqueous and semiaqueous cleaning solvents manufacturers' supplied data shall be used to determine the water content.
2. For hand-wipe cleaning solvents required in paragraph (B.3)(c)(1), manufacturers' supplied data or standard engineering reference texts or other equivalent methods shall be used to determine the vapor pressure or VOC composite vapor pressure for blended cleaning solvents.

(26) **Parts Washers**

Parts washers at P&W are subject to *Solvent Cleaners*, 06-096 CMR 130 (as amended).

- A. P&W shall keep records of the amount of solvent added to each parts washer. [06-096 CMR 115, BPT]
- B. The following are exempt from the requirements of 06-096 CMR 130 [06-096 CMR 130]:
  1. Solvent cleaners using less than two liters (68 oz) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
  2. Wipe cleaning; and,
  3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.
- C. The following standards apply to cold cleaning machines that are applicable sources under Chapter 130.
  1. P&W shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 CMR 130]:
    - (i) Waste solvent shall be collected and stored in closed containers.

- (ii) Cleaned parts shall be drained of solvent directly back to the cold cleaning machine by tipping or rotating the part for at least 15 seconds or until dripping ceases, whichever is longer.
  - (iii) Flushing of parts shall be performed with a solid solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure that does not exceed 10 psig. Flushing shall be performed only within the freeboard area of the cold cleaning machine.
  - (iv) The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
  - (v) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the degreaser.
  - (vi) When a pump-agitated solvent bath is used, the agitator shall be operated to produce no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used.
  - (vii) Spills during solvent transfer shall be cleaned immediately. Sorbent material used to clean spills shall then be immediately stored in covered containers.
  - (viii) Work area fans shall not blow across the opening of the degreaser unit.
  - (ix) The solvent level shall not exceed the fill line.
2. The remote reservoir cold cleaning machine shall be equipped with a perforated drain with a diameter of not more than six inches. [06-096 CMR 130]

(27) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

(28) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

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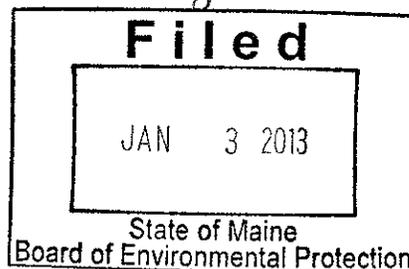
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(29) P&W shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 3 DAY OF January, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Maia Allen Robert Core for  
PATRICIA W. AHO, COMMISSIONER



**The term of this license shall be ten (10) years from the signature date above.**

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 5, 2012

Date of application acceptance: March 12, 2012

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality