

Statement of Basis  
Continental Aerospace Technologies, Inc.  
(Manufacture of Airplane Engines/Parts)  
503-0002  
Major Source of Carbon Monoxide

Introduction

On January 28, 2020, Continental Aerospace Technologies, Inc. (Continental) submitted a Title V Major Source Operation Permit renewal application for the manufacture of airplane engines and parts (SIC # 3724). Final information to complete the application was received on April 2, 2020. Continental is located in Mobile, Alabama.

Facility processes consist of shotblasting operations, paint spray booth operations, solvent cleaning operations, and engine test cell operations. Late in 2019, Continental finished a new building and began moving existing equipment, installing new equipment, and retiring old equipment. This process will be complete by December 2021. Most processes will be installed and operating by December 2020. The facility also has two small boilers that operate exclusively on natural gas. These will operate past the renewal date and be shutdown sometime in 2020.

During the previous Title V permit term, air construction permits were issued for the following processes.

- (X003) Shot Peen Machine(s) with Bag System(s)
- (X003) Polishing Machine(s) with Cyclone Dust Collector(s)
- (X004) Engine Test Cell(s)
- (X005) Paint Booth(s)
- (X007) Solvent Cleaning Operations
- (X050) Plating Line(s)
- (X051) Gasoline Dispensing Operation(s)
- (X052) 300 KW Diesel Fired Emergency Generator
- (X053) 125 KW Natural Gas Fired Emergency Generator

The requirements of these permits will be incorporated into this Title V renewal.

There are three abrasive blasting operations (003) units using steel shot and grit that exhaust to baghouses (EP-03, EP-19) at Continental. These baghouses vent to the inside of the facility. These consist of: Shot Peen Machine 511: Threads (EP-03) with Clemco 1648 w/Jet DC-1200VX Bag System, Shot Peen Machine 512: Cylinders (EP-03) with Clemco 1648 w/Jet DC-1200VX Bag System, and Shot Peen Machine: Camshafts (EP-19) with Clemco 2452 w/Jet DC-1200VX Bag System. Continental has Polishing (M476) and Grinding (H534, H646) and Sanding operations (EP-06) w/ Grizzly (G0849) Cyclone Dust Collectors (008). These operations also vent to the interior of the facility and will not begin operation in the Blue Marlin facility until December 2020. Continental's current Polishing/Grinding Operations with

Cyclone(s)/ Dust Collector(s) will continue to operate until December 2020 and these operations vent to the outside currently.

The preceding units are used as follows: Aircraft engine parts (gears, rocker arms, connecting rods, etc.) are placed on a rotary table that continually rotates past a discharge point where steel shot, glass beads, or plastic beads are hurled by a rotating wheel onto the parts. This process removes heat scale and machining burrs. Fractured steel shot, plastic beads, and scale particles are exhausted from the units into a control device, and then exhausted inside the building. Similarly, aircraft engine parts are polished using polishers, sanders, grinders, and buffers. This process removes heat scale and machining burrs and abrasive materials and scale particles are exhausted from the units into a control device then exhausted.

Continental has five paint spray booths (005) that are used to coat or touch up engine parts (EP-07, EP-15, EP-22). These consist of: Primer Painting Booth (M842), Black and Gold, Titan (M945), two Touch-up Booths, and Crankcase Paint Booth. Continental also uses mineral spirits in solvent dip tanks and test cell solvent wash stations to clean engine parts (EP-10). Currently there are approximately 35 solvent dip tanks and solvent wash stations (007) at this facility.

Continental performs regular and experimental tests in the 12 test cells (004) (3 regular production test cells (EP-09) in the Blue Marlin Building (installing two engines presently, emissions based on 3 engines) and 9 experimental test cells (EP-23) in Building 26) on site. There are two operating scenarios used to test engines during either simulated 1.5-hour flights for production engines or longer periods for simulated flights on experimental engines. The engines are tested in “idle”, “take-off”, “climb-out”, and “approach” for varying lengths of time, depending on the scenario. They utilize either Aviation Gasoline or Jet A fuel. These fuels and other liquids are stored in various storage tanks utilized in the list of insignificant activities.

Continental has several plating operations that treat the various metals used in their engine production. These operations are incorporated into the Nickel Plating Line (050) (EP-21), Zinc Plating (EP-11), and Alodine Chromate Conversion Line (EP-12). There will also be a Sn Plating- Crankshaft Propeller Flanges (Titan and Legacy) and Copper Cyanide Plating that will be classified as an insignificant source. Some of the other plating operations have been outsourced since the last Title V revision and the recent move to the new building. The Zinc Plating and Copper Cyanide Plating will be operational until the outsourcing is completed about December 2020.

Continental also has a couple of emergency generator engines for emergency power. The new electric powered fire-pump is not permitted.

Volatile organic compounds (VOCs) from the organic solvents in the paint, paint thinners, and cleaning solvents, are regulated criteria air contaminants emitted to the atmosphere by the surface coating and cleaning of engine parts. The facility has a potential to emit less than 100 TPY of VOC and thus is not subject to any coating requirements under 335-3-6. The surface coating operations are also a source of hazardous air pollutants (HAPs), as listed in Appendix G of the ADEM Air Regulations.

Potential emissions of Carbon Monoxide from the engine test cells exceed the major source threshold of 100 tons per year. Therefore, Continental is considered a major source for Title V. No other criteria pollutants are emitted in sufficient quantities, actually or potentially, to exceed the major source threshold of 100 tons per year.

Continental did have the potential to emit more than 250 TPY of CO from their existing engine test cells both before and after their recent move. Continental has requested a 245 TPY limitation for CO in previously issued Air Permit 503-0002-X004 that will be incorporated into this Title V renewal. Therefore, Continental is considered a synthetic minor source for PSD purposes.

The potential HAP emissions from the coating and cleaning operations do not exceed the Title III and Title V major source thresholds. The HAP emission thresholds for a major source are 10 tons for a single HAP and 25 tons for a combination of any HAPs. Continental is an area source of HAPs.

For each emission source and insignificant activity identified in the permit application, Continental has calculated potential emissions, identified source emission limitations, and/or operating limitations. These emission sources and insignificant activities, including source emission limitations and operating limitations as stated, and the related potential emissions are described in the permit application.

Continental's Nickel Plating Line (050) (EP-21), Zinc Plating (EP-11), and Alodine Chromate Conversion Line (EP-12) and Gasoline Dispensing Operations (051) (EP-14), rolling stock tank, are subject to federal Area Source National Emission Standards for Hazardous Air Pollutants (Area Source NESHAP). Sources EP-21 and EP-12 are subject to the Area Source NESHAP for Plating and Polishing Operations, 40 CFR Part 63 Subpart WWWW for plating operations involving tanks containing one or more of these HAP metals: Manganese, Cadmium, Nickel, Lead, and Chromium. Continental complies with this regulation by using tank covers and best management practices. Source EP-14 is subject to the NESHAP for Source Category: Gasoline Dispensing Facilities, 40 CFR Part 63 Subpart CCCCC for a 1,000 gallon auto gasoline storage tank with a maximum annual throughput of 2,032 gallons/year.

Continental has a mobile 300 KW diesel fired Reciprocating Internal Combustion Engine (RICE) (052) used for emergency power purposes that is subject to 40 CFR Part 63 Subpart ZZZZ (EP-16). This regulation requires certain best management practices for compliance. Continental has a 125 KW natural gas fired Reciprocating Internal Combustion Engine (RICE) (053) used for emergency power purposes that is subject to 40 CFR Part 63 Subpart ZZZZ. This regulation requires RICE units less than 500HP located at area sources to comply with NSPS (JJJJ). The 125 KW RICE shows compliance with a manufacturer certification of this unit.

Continental is not subject to the NESHAP for Source Category: Industrial, Commercial, and Institutional Boilers for Area Sources, 40 CFR Part 63 Subpart JJJJJ, because of the firing of natural gas only in these boilers.

#### Emissions

Continental has the following actual and potential emissions for criteria pollutants.

Pollutant	Potential Emissions TPY
Particulate	27
PM10	27
Particulate condensate	1.5
Sulfur dioxide	1.3
Nitrogen oxides	17
Carbon monoxide	537 (245)
Volatile organic compounds	62
Total HAPs	15
CO2e	503

The following is a list of all of the facility's sources (individual emissions units) which will be part of the facility's Title V Major Source Operating Permit:

<b>Permit Unit No.</b>	<b>Description of Unit</b>
001	Natural Gas Fired Boiler #1 – 5.2 MMBtu/hr
002	Natural Gas Fired Boiler #2 – 5.2 MMBtu/hr
003	Shotblast Operation(s) with Baghouse(s)
004	Engine Test Cell Operations (Experimental and Production)
005	Paint Spray Operations with Oven(s)
007	Solvent Cleaning Operations
008	Polishing/Grinding Operation(s) with Cyclone(s)/Dust Collector(s)
050	Plating and Polishing Operations
051	Gasoline Dispensing Operations
052	Diesel Fired 300 KW Reciprocating Internal Combustion Engine Operations
053	Natural Gas Fired 125 KW Reciprocating Internal Combustion Engine Operations

### **Monitoring of Emissions**

Continental maintains records of monthly VOC-containing materials usage and analysis. These will be maintained for five years and be available for inspection upon request for Title V fee purposes.

The shot-blast operations are subject to opacity and particulate standards. Weekly observations of visible emissions are sufficient to indicate compliance with the particulate standards. If emissions that are greater than normal are noted at any time, corrective action to minimize emissions will be taken within 24 hours, followed by an additional observation to confirm that emissions are reduced to normal. Records of weekly observations and any corrective actions will be retained for at least five years.

Continental has two 5.2 MMBtu/hr natural gas-fired boilers to provide process heat and space heat. The boilers shall be restricted to burning natural gas for fuel, with no permitted back-up fuel. Due to the size of the boilers and the type of fuel used for firing, opacity and particulate limits will be met by the inherently clean nature of the fuel itself. Therefore, no further monitoring of opacity or particulate will be required. Due to the burning of natural gas in the boilers, SO<sub>2</sub> generation is expected to be minimal. Therefore, no monitoring of SO<sub>2</sub> will be required.

The proposed monitoring is the same as in the existing Title V Permit. This monitoring has been shown to be sufficient in the past and, therefore, no change to the monitoring is needed. CAM is not applicable because potential uncontrolled emissions of criteria pollutants do not exceed 100 tons per year on any one unit with control device(s).

### **Permitting Fees**

Title V major sources are subject to operating permit fees which charge the facility a yearly amount based on the actual emission rate of pollutants for the previous year.

### **Affected States Notification**

Notification of the proposal of this major source operating permit will be sent to all affected states bordering Alabama.

### **Recommendations**

I recommend that the attached permit be issued to Continental.

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Kevin Fulmer  
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April, 2020