Air Branch

Air Branch Inspection Report
Unannounced Partial Compliance Evaluation
Spirit AeroSystems
3801 South Oliver
Wichita, KS 67210
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Inspection Date(s):
September 17-18, 2024

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APPENDICES

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INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the partial compliance evaluation (PCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements listed in **Table 1**. The inspection was part of the U.S. Environmental Protection Agency's (EPA) core program.

Table 1. APPLICABLE PERMIT CONDITIONS, REGULATIONS AND STANDARDS

Code of Federal Regulation	Standard Name
40 CFR Part 63	Subpart GG - National Emission Standards for Aerospace Manufacturing and Rework Facilities
40 CFR Part 63	Subpart RRR - National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

Table 2 lists the inspection team members.

Table 2. PROJECT TEAM MEMBERS

Team Member	Organization	Project Role
Charlotte Papp	EPA Region 7, ECAD, Air Branch	Lead inspector
Kyle Youngs	EPA Region 7, ECAD, Air Branch	Field team member

FACILITY CONTACT INFORMATION

Table 3 lists the primary facility contacts in order of contact during the inspection.

Table 3. FACILITY CONTACT INFORMATION

Name, Title	Phone No.	Email Address
Alex Tobia, Environmental Manager	316-523-9272	Alex.l.tobia@spiritaero.com
Hannah Samaniego, Environmental Scientist	316-523-2554	Hannah.e.samaniego@spiritaero.com

FACILITY OVERVIEW

According to the facility staff, the facility was initially constructed in 1915 and has changed ownership numerous times since then. Most recently in 2005, the facility was purchased by Spirit AeroSystems, LLC (Spirit) who are the current owners and operators. The facility manufactures and paints aircraft components. They operate 24 hours a day, 7 days a week, and employ approximately 11,000 staff.

The last onsite compliance monitoring activity at the facility was on September 4, 2024, and consisted of a full compliance evaluation (FCE) inspection conducted by the Kansas Department

of Health and the Environment (KDHE). KDHE completed a Title V certification review on January 22, 2024.

According to EPA's Enforcement and Compliance History Online (ECHO) website, there has been no formal or informal enforcement at this facility for at least the past five years.

According to Spirit's Title V operating permit issued by KDHE on December 17, 2018, the facility is subject to the regulations and standards subject to review during this inspection as noted in **Table 1.**

FACILITY OPERATIONS SUMMARY

The facility manufactures and paints aircraft components. Raw stock (primarily aluminum sheets) is brought to the facility. Maskant is applied when necessary, and the material is stretched, pressed, chemically or laser etched, and/or cut per the part specifications. According to Mr. Tobia, there are approximately 40 paint booths throughout the facility. These booths apply primers, topcoats, and specialty coatings. Some components are assembled onsite, including fuselage assembly. Scrap aluminum is shredded in the aluminum shredder and sent offsite for beneficial reuse. There are several sandblast booths onsite used for material conditioning. Emissions from the milling tanks located in the Manufacturing Process Facility (MPF) building are captured via the building's HVAC system. Paint booths are equipped with filters and downdraft/negative pressure that directs the airflow through the filters. Certain paint booths, including buildings CAMO 1 and CAMO 4, have emissions pulled through filters and brought to a set of thermal oxidizers for further control of emissions. Spray gun cleaning is performed via the disassembly method in paint mix rooms. Solvent used for cleaning is collected and disposed of as hazardous waste. There are no large-scale de-painting operations onsite. Scrubbers and dust collectors are used to control emissions from shot blast units.

FIELD ACTIVITIES SUMMARY

I arrived at the facility on September 17, 2024, at 7:47 a.m. and completed a drive by surveillance inspection. I did not observe visible emissions. I made entry at the security office and introduced myself and Mr. Young, presented my credentials, and provided my business card to Mr. Alex Tobia. I was given a facility safety briefing by Mr. Tobia. I conducted an opening conference at 8:10 a.m. during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA, specifically, to determine compliance with the regulations and standards listed in **Table 1**. I explained that after asking for some general business information, I would observe work practices, process units with associated control equipment, and also, review associated records demonstrating compliance with the regulations. I explained to Mr. Tobia that the facility would have an opportunity to make a claim

of business confidentiality at the end of the inspection and provided him with a Confidential Business Information (CBI) form. Mr. Tobia did not make a claim of confidentiality (**Appendix A**).

The inspection team was given a facility tour by Mr. Tobia. I was asked to wear the following PPE for general site safety: hard hat, safety glasses, hearing protection, and steel-toed boots.

Measurement activities are described in the **Measurement Activities** section below.

The site tour began with the skin arrival and maskant application area. We continued to the milling tanks and saw various paint booths and blasting booths in the MPF and Materials Buildings. We observed the aluminum shredder, then broke for lunch at approximately 11:15 a.m. We returned to the facility at 12:15 p.m. The site tour recommenced with the CAMO 1 building and then the CAMO 4 building. We observed the master mixing room and then spray booths in IPB 4, CAMO 3, IPB 2 and IPB 1. I observed an operator cleaning a spray gun in an IPB 4 paint mix room. We returned to the conference room at approximately 3:00 p.m. and departed for the day shortly after.

We arrived on site on day 2 (September 18, 2024) at 7:39 a.m. We discussed records in the conference room and observed live data from various control devices.

I conducted a closing conference with the facility members listed in **Table 3**. I provided the facility with copies of the Small Business Resources Information Sheet, and a Receipt for Documents (**Appendix B**). I requested copies of the records as indicated on the Receipt for Documents be sent to me digitally via a OneDrive folder by October 18, 2024. On October 18, 2024, the facility uploaded the final records to the OneDrive folder.

We departed the facility at 9:18 a.m.

Measurement Activities

Kyle Youngs conducted field measurements during the onsite inspection under my direction. **Table 4** summarizes field measurement and field sampling activities.

All environmental measurement activities were performed in accordance with the EPA Region 7 quality system. We followed manufacturer and EPA processes for instrument calibration; instrument calibration was documented via an internal equipment database.

Table 4 summarizes field measurement activities.

Table 4. FIELD MEASUREMENT ACTIVITIES

Location Identifier	Date(s) and Time	Method and/or Procedure[1], and Equipment	Measurer Name
See video log	See video log	**Region 7 procedure:** *FLIR ThermaCAM™ GasFindIR, GF320, and Similar Infrared Cameras*, **Equipment:** Teledyne FLIR, Model No GF320, Serial No. 44401229	Kyle Youngs
[1] The current version of each procedure, at the time of the investigation, was followed.			

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions, and field activities were documented in the field records. All photographs are attached as **Appendix C**. I made the following observations during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

40 CFR Part 63 Subpart GG:

I reviewed VOC/HAP content documentation (primarily Safety Data Sheets [SDS]) for cleaning solvents, primers, topcoats, and specialty coatings used at the facility, and likewise, reviewed calculations of HAP/VOC emitted per unit volume of coating. All documentation reviewed appears complete and to demonstrate compliance.

I requested and reviewed SDS and vapor pressure information for all cleaning solvents used at the facility. The solvents appear to be appropriate and have vapor pressures of under 45 mmHg per requirements in 40 CFR 63.744(b)(2).

I requested and reviewed differential pressure data for all dry particulate filters subject to Subpart GG requirements. This information was provided and appears complete and to demonstrate compliance.

I requested records of temperature readings taken to demonstrate compliance with the facility's Regenerative Thermal Oxidizers (RTOs). The facility responded with the below:

> *Spirit AeroSystems' Wichita facility operates four regenerative thermal oxidizers (RTOs) to control VOC and volatile HAP emissions from coating operations inside of the fuselages in the three bays of the CAMO1 booth (EU-2309K-P1) and the one bay of the CAMO4 booth (EU-2297F-B7). The temperature in both sides of the catalyst bed of each of these four RTOs is continuously monitored by a thermocouple for each side. These thermocouples send a signal to the main paint bay controller that the RTO is ready for use if the temperature for both is above the set minimum of 1500F. If the temperature of one or both thermocouples reads below 1500F, the RTO is set to alarm and none of the coating bays can use it to begin operations. The same thing happens if the RTO that is supporting an ongoing coating operation falls below 1500F; the RTO goes into alarm, and the bay that was using that RTO shuts down.*

Spirit AeroSystems' Wichita facility also operates one catalytic oxidizer to control the VOC and volatile HAP emissions from coating operations inside of the Hand Spray Maskant Booth (EU-2280J-MSK1). The temperature of the desorber and oxidizer are continuously monitored by a thermocouple. If the temperature of the desorber falls below the low temperature set point of 300 degrees, below the normal operating temperature (desorber:325F-375F, oxidizer:640F-660F), an alarm is sent to the hand spray booth and the booth shuts down.

Spirit had made some changes to the data gathering and storage of the CAMO1 and CAMO4 RTOs and the Hand Spray Maskant Booth when the third RTO was installed for CAMO1 in 2018. During this change, the data storage of the RTO temperatures was interrupted, so historical temperature data for the RTOs is not available. There were no instances of the CAMO RTOs or the Hand Spray Maskant Booth operating without the interlock system operating in the previous 5 years.

I observed live data from the CAMO 1 and CAMO 4 RTOs while onsite, and they were both within the specified temperature ranges. There were very little emissions from the RTO stacks visible with the FLIR camera which suggests they are operating with complete combustion.

I requested records of water flow rate for each conventional waterwash system used to comply with requirements of this subpart. The facility responded with the below:

Spirit AeroSystems' Wichita facility operates one spray booth, designated EU-2278M-B23, that is controlled by a conventional waterwash system that is interlocked with the booth ventilation and spray gun air feed. This system is fed water from two pumps, each fitted with a Bailey Fischer & Porter MAG-XM flowmeter. If one or both flowmeters reads below a flowrate of 900 gpm with the booth set to "Run" mode, the flowmeter will send a signal to the booth control to alarm and shut the booth down. This flow rate interlock exempts this booth from the requirement to record water flow rate for the waterwash system.

I requested and received documentation of the chemical milling maskant control device efficiency and recovery calculations. My initial review of the documentation did not find any issues with compliance.

40 CFR Part 63 Subpart RRR:

The facility operates an aluminum shredder onsite. Scrap aluminum is taken to the shredder, and shredded aluminum is taken offsite for disposal. The shredder operates with an interlock system that will automatically shut off the system if coolant levels are below the required level.

I observed active shredding and saw the sensors used to detect the coolant level in the unit. The system appeared to be robust and in compliance. The facility has had no occurrence in the past five years of the shredder operating with the coolant level outside of the prescribed limits.

Other regulations:

Per the facility's Compliance Assurance Monitoring (CAM) Plan, the facility is required to keep water level records and pressure records to the three venturi scrubbers located onsite. I requested and reviewed these records, and they appeared complete and to demonstrate compliance.

Similarly, the facility is required to monitor the pressure for dust collectors CE-DC3 and CE-DC6 which control emissions from blast booths. The pressure records for both units appeared complete and to demonstrate compliance.

Potential Finding 1: Primer residue on floor outside of paint booths
Observation Summary: Bright green paint drips were visible throughout the facility near paint booths.
Citation: 40 CFR 63.745(b)
Evidence: Appendix C- Field Photographs 47-50; Field Notes
Description of Observation: While on the site tour, I noticed bright green drips and splatters of paint on the floor. This is the color of the facility primer. These splatters were most noticeable in the MPF building tracking away from paint booths. Some drips continued in a line for 20-30 feet, suggesting a leaking paint can or piece of equipment. I likewise saw the outline of shoe prints in bright green, suggesting an individual had stepped in primer and had tracked it across the floor as they were walking away from the paint booth. Photos 47-50 demonstrate an example of this issue in a different building. Due to the sensitive nature of the parts being manufactured, I avoided taking photos on the floor of the MPF building so as to not capture the parts anywhere in the photos. It is unclear at this time whether these drips and splatters are from recent incidences of spilled primer or if they are the accumulation of spills from several years. If the former, the facility should be handling material in such a way as to minimize spills, per 40 CFR 63.745(b). If the latter, it could be considered good air pollution control practice to clean up these spills as they occur, both to reduce fugitive emissions coming from the volatilizing primer and to reduce worker exposure to potential emissions as they walk throughout the facility.

Potential Finding 2: Open/overflowing hazardous waste container
Observation Summary: A hazardous waste container was seen overflowing/open during the site tour.
Citation: 40 CFR 63.748(a)(2)
Evidence: Appendix C- Field Photograph 15

Potential Finding 2: Open/overflowing hazardous waste container
Description of Observation: The facility is required to store all waste that contains organic HAP in closed containers. During our site tour, I observed a hazardous waste container that was overflowing with material, and thus was not able to be kept closed. When I brought this to Mr. Tobia's attention, he immediately took action to compact the waste and secure the lid of the container closed. The facility is also subject to RCRA regulations that are potentially relevant to this observation.

Potential Finding 3: Spray gun cleaning area is kept open when not in use
Observation Summary: The vats/areas used for disassembled spray gun cleaning are not kept closed at all times when not in use.
Citation: 40 CFR 63.744(c)(3)
Evidence: Appendix C- Field Photographs 40-44; Field Notes
Description of Observation: During our site tour, I observed a technician disassemble and clean his spray gun at the end of his shift. The facility uses the disassembled spray gun cleaning method specified in 40 CFR 63.744(c)(3). Per this option, the facility must "Disassemble the spray gun and clean the components by hand in a vat, **which shall remain closed at all times except when in use**. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components" The spray gun cleaning was thorough, and all solvent used was collected and deposited into a hazardous waste container. However, the vat used for this process, located in the paint mixing rooms, was open before the cleaning started, and remained open after the cleaning was finished. Similar vats in other paint mixing rooms where no spray gun cleaning was occurring were open throughout the facility during our site tour. Additionally, liquids collected from the vat are captured via a drain into a container. While on the site tour, I observed a container that contained presumably used solvent, located under the vat drain that had been left sitting open for an undetermined amount of time. Likewise, inside the vat I saw containers of solvent with parts and cleaning equipment soaking in the solvent with the hood to the vat open. Signs posted above the cleaning area suggest that the facility uses the enclosed system compliance option specified in 40 CFR 63.744(c)(1). However, the configuration of the system and steps taken to clean the spray guns more closely follow the disassembly method.

End of report.