GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: Jeng-Hon Su

FROM: Ginger Payment

DATE: August 8, 2023

Facility Name:	**Chromalloy Georgia**
AIRS No.:	285-00060
Location:	LaGrange, GA (Troup County)
Application #:	28925
Date of Application:	June 27, 2023

Background Information

Chromalloy Georgia (hereinafter the "facility") is an existing turbine engine repair facility that specializes in aerospace coatings located at 1664 Lukken Industrial Drive West in LaGrange (Troup County). Permit No. 3724-285-0060-S-03-0 was issued on January 19, 2023 for the operation of the facility, the construction and operation of a new oven, the removal of scrubbant pH for scrubber SC4 since it is a dry scrubber, removal of all references to baghouses and cartridge filters due to dismantling these control devices and an increase to the VOC emission limit.

Turbine engine parts are received from customers by the shipping and receiving department. After being received, parts are inspected to determine if repairs can be made. Once inspection is completed and parts are deemed repairable, they are advanced to the appropriate process. Turbine engine parts that were previously coated are routed to the strip line to remove the existing coating prior to application of the new coating. Parts that were not previously coated are routed directly through the coating process.

- Strip Line- This process is used to remove existing coatings from parts prior to performing repairs or applying new coating. Different chemical stripping solutions are used depending on the type of coating being removed from the parts. After sitting in the required stripping solution, parts then go through a rinse made up of heated and non-heated rinse water tanks. Emissions from the stripping operation exhaust to a packed wet bed scrubber SC1 which uses sodium hydroxide as the scrubbant to control HCl acid emissions.

- Plating Line- Some parts are chemically coated and are processed through the plating line. Before being processed through the chemical coating line, parts go through a cleaning process. Cleaning is accomplished by using a combination of grit blasting and chemical cleaning. Parts are submerged in a chemical cleaning solution and then thoroughly rinsed using both heated and non-heated rinsing water tanks. Emissions from the plating operation exhaust to a packed wet bed scrubber SC3 which uses sodium hydroxide as the scrubbant to control HCl acid emissions.

- A-12 Cementation & Packing Operation- Parts are packed in an aluminum powder mixture, sealed, and then placed in a coating oven. Once the powder mixture reaches a specific temperature the

powder mixture goes through a chemical reaction that results in the deposition of a thin aluminum coating on the parts exterior.

- Spray Coating- Parts designated to receive surface coatings are sent to one of 2 spray coating booths to receive spray coating. Coated parts are then placed into curing ovens.

Purpose of Application

Application No. 28925 was submitted on June 27, 2023 to request the replacement of existing Scrubbers SC1 and SC3 with a new packed bed scrubber (SC5). Because there are no proposed emission units and there is no increase in emissions, a public advisory was not issued for this application.

Updated Equipment List

Emission Units		Associated Control Devices	
Source Code	**Description**	**Source Code**	**Description**
LA1	Laboratory Vent Hood	N/A	Uncontrolled
Conversion Room			
OV9	Curing Oven	N/A	Uncontrolled
OV14	Curing Oven	N/A	Uncontrolled
OV52	Burnout Oven	N/A	Uncontrolled
SB2	Spray Booth	N/A	Waterfall Closed Loop
SB3	Conversion (Coating) Booth	SC4	Scrubber
Plating Preparation			
SS1	Potassium Permanganate Process Tank	SC5*	Scrubber
SS1-RT	Potassium Permanganate Rinse Tank	SC5*	Scrubber
SS2	HCl Process Tank	SC5*	Scrubber
SS2-RT	HCl Inhibited Rinse Tank	SC5*	Scrubber
SS3	Sodium Hydroxide Process Tank	N/A	Uncontrolled
SS3-RT	Hot Water Rinse	N/A	Uncontrolled
SS4	Alodine 1200 Process Tank	N/A	Uncontrolled
ART	Alodine Rinse Tank	N/A	Uncontrolled
GB1	Grit Blasting Operation	N/A	Cannister Filter Exhausting to Indoor Air
GB2	Grit Blasting Operation	N/A	Cannister Filter Exhausting to Indoor Air

Emission Units		Associated Control Devices	
Source Code	**Description**	**Source Code**	**Description**
GB3	Grit Blasting Operation	N/A	Cannister Filter Exhausting to Indoor Air
Plating Room			
E2	Hot Water Rinse	SC5*	Scrubber
CS1	Coating Strip	SC5*	Scrubber
EH1	Electroless Nickel Plating	N/A	Uncontrolled
EH2	Electroless Nickel Plating	N/A	Uncontrolled
EH3	Electroless Nickel Plating	N/A	Uncontrolled
N8-1HRT	NR8-1 Hot Water Rinse	N/A	Uncontrolled
N8-1	Nickel Electroplating	N/A	Uncontrolled
N8	Nickel Plating	SC5*	Scrubber
EN5-1HRT	EN5-1 Rinse Water	N/A	Uncontrolled
EN5-1	Nickel Strike Electroplating	SC5*	Scrubber
EN3-1RT	N3-1 Rinse Water	N/A	Uncontrolled
EN3-1	HCl	SC5*	Scrubber
N3-1RT	N3-1 Rinse Water	N/A	Uncontrolled
N3-1	Alkali Clean	SC5*	Scrubber
N3	Alkali Clean	SC5*	Scrubber
EN3RT	N3 Rinse Water	N/A	Uncontrolled
EN5	Nickel Strike Electroplating	SC5*	Scrubber
EN5RT	EN5 Rinse Water	N/A	Uncontrolled
N8HRT	N8 Rinse Water	N/A	Uncontrolled
N8RT	N8 Hot Water Rinse Tank	N/A	Uncontrolled
EN5-1	Nickel Strike Electroplating	SC5*	Scrubber
E3	Electroless Nickel Plating	SC5*	Scrubber
E4	Electroless Nickel Plating	SC5*	Scrubber
E3/E4 RT	E3 & E4 Rinse Tank	N/A	Uncontrolled
DW1	Dewax	N/A	Uncontrolled
A3	Chemical Clean	SC5*	Scrubber
AQ1	Chemical Clean	SC5*	Scrubber
AQ2	Water Rinse	SC5*	Scrubber
AQ3	Hot Water Rinse	SC5*	Scrubber

Emission Units		Associated Control Devices	
Source Code	**Description**	**Source Code**	**Description**
Small Engine Repair Room #1			
GB4	Grit Blasting Operation	N/A	Cannister Filter Exhausting to Indoor Air
SB1	Anti-gallant Spray Booth	N/A	Filters
Stripping Room			
CS1	Coating Strip	SC5*	Scrubber
CS2	Rinse Water	SC5*	Scrubber
CS6	Hot Water Rinse	SC5*	Scrubber
CS6-RT	Rinse Water	SC5*	Scrubber
CS6 RT2	Rinse Water	SC5*	Scrubber
C1	Coating Strip	SC5*	Scrubber
C3	Coating Strip	SC5*	Scrubber
SD4	Rinse Tank	SC5*	Scrubber
C6	Coating Strip	SC5*	Scrubber
SD5	Rinse Tank	SC5*	Scrubber
C8	Coating Strip	SC5*	Scrubber
SD6	Rinse Tank	SC5*	Scrubber
SD7	Rinse Tank	SC5*	Scrubber
MS-1	Braze Strip	SC5*	Scrubber
MS-1 RT	Rinse Water	SC5*	Scrubber
MS-3	Braze Strip	SC5*	Scrubber
S3	Nickel Strip	SC5*	Scrubber
In-Between Room			
OV11	AB1250 Burnout Oven	N/A	Uncontrolled
Abrasive Blasting & Cleaning			
GB5	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB6	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB7	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB8	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB9	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB10	Grit Blasting Machine	N/A	Cannister Filter Exhausting to Indoor Air
Post Coat & Clean Room			
D1	Chemical Clean	N/A	Uncontrolled
D2	Chemical Clean	N/A	Uncontrolled

Emission Units		Associated Control Devices	
Source Code	**Description**	**Source Code**	**Description**
D3	Chemical Clean	N/A	Uncontrolled
D4	Rinse Water	N/A	Uncontrolled
D5	Rinse Water	N/A	Uncontrolled
D6	Chemical Clean	N/A	Uncontrolled
OV80	Post Coat Oven	N/A	Uncontrolled
A-12 Prep Room (Machining Room)			
GB11	Shot Peening Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB12	Shot Peening Machine	N/A	Cannister Filter Exhausting to Indoor Air
GB13	Shot Peening Machine	N/A	Cannister Filter Exhausting to Indoor Air
OV13	Burnout Oven	N/A	Uncontrolled
A-12 Cementation & Pack Room			
AP1	Blending & Packing	N/A	Exhausts to Indoor Air
OV1	Coating Oven	SC2	Scrubber
OV2	Coating Oven	SC2	Scrubber
OV3	Coating Oven	SC2	Scrubber
OV4	Coating Oven	SC2	Scrubber
OV7	Coating Oven	SC2	Scrubber
OV8	Coating Oven	SC2	Scrubber
OV10*	Coating Oven	SC2	Scrubber
Fluorescent Penetration Room			
FP1	Spray Booth	N/A	Uncontrolled
OV12	Oven	N/A	Uncontrolled

*proposed within current application

Emissions Summary

There are no changes in emissions due to this application.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	**After Mod.**	**Emissions Change**	**Before Mod.**	**After Mod.**	**Emissions Change**
$PM/PM_{10}/PM_{2.5}$	0.186	0.186	--	0.063	0.063	--

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
NOx	2.4	2.4	--	0.83	0.83	--
SO_2	0.015	0.015	--	0.005	0.005	--
CO	2.1	2.1	--	0.70	0.70	--
VOC	<100	<100	--	1	1	--
Max. Individual HAP	<10	<10	--	5.48	5.48	--
Total HAP	<25	<25	--	5.56	5.56	--
Total GHG (if applicable)	2982	2982	--	1018	1018	--

Regulatory Applicability

Permit No. 3724-285-0060-S-01-0 (5/29/2003) revised the HCl emission limits to maintain the potential to emit from the scrubbers at 1.7 lb/hr (on a combined basis). This numerical value was proposed by the applicant in 1990 and serve to provide a reasonable assurance of compliance with the Georgia Air Toxics Guideline. The facility will continue to limit the HCl emissions to 1.7 lb/hr by limiting HCl emissions from Scrubber SC2 to 1.0 lb/hr and from Scrubber SC5 to 0.7 lb/hr. In order to verify the emissions from the scrubbers, a performance test for each scrubber will be required. In addition to testing, the scrubbers will be monitored to ensure that they are operating within the parameters determined the performance tests.

The applicable equipment will continue to be subject to Georgia Rule (b) – *Visible Emissions* and Georgia Rule (e) – *Particulate Emissions from Manufacturing Processes*.

The fuel-burning sources at the facility will continue to be subject to Georgia Rule (g) – *Sulfur Dioxide*.

The facility avoids major source requirements and Georgia Rule (kkk) – *VOC Emissions from Aerospace Manufacturing and Rework Facilities* by limiting the VOC emissions to less than 100 tpy.

Because the HAP emissions are limited to 25/10 tpy, the facility avoids 40 CFR 63 Subpart GG – *National Emission Standards for Aerospace Manufacturing and Rework Facilities*.

Applicable equipment are also subject to 40 CFR 63 Subpart HHHHHH - *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources* and 40 CFR 63 Subpart WWWWWW - *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*.

Permit Conditions

- Condition 2.1 was modified to remove Scrubbers SC1 and SC3 and to add Scrubber SC5. The HCl emission limit for remaining Scrubber SC2 was modified from 0.5 lb/hr to 1.0 lb/hr. The HCl emission limit for SC5 will be 0.7 lb/hr. The total for the scrubbers will remain 1.7 lb/hr of HCl emissions.

- Condition 5.2 was modified to remove Scrubbers SC1 and SC3 and to add Scrubber SC5 from the monitoring requirements for scrubbant recycle flow rate, scrubbant pH and pressure drop.
- Condition 6.2 is a new condition which requires performance testing for new Scrubber SC5 and existing Scrubber SC2. The performance test for the new scrubber will verify that the new scrubber will meet the proposed HCl emission limit. The performance test for the existing scrubber is needed because the existing scrubber has never been tested to verify the performance of the scrubber.
- Conditions 7.3 and 7.6 were modified to remove the term "control efficiency" from the HAP and VOC emission calculations. The facility stated that they do not use control efficiencies for the scrubbers to calculate VOC and HAP emissions. Because the facility does not use control efficiencies, performance testing for scrubbers is not required. If the facility requests to use VOC/HAP destruction efficiencies in the future, performance testing will be required.

Toxic Impact Assessment

Because there is no change in emissions due to this application, a toxic impact assessment was not necessary.

Summary & Recommendations

I recommend issuance of Permit Amendment No. 3724-285-0060-S-03-1 to Chromalloy Georgia which is located at 1664 Lukken Industrial Drive West in LaGrange (Troup County). This amendment allows for the replacement of existing Scrubbers SC1 and SC3 with a new packed bed scrubber (SC5). A public advisory was not issued for this application. The facility will continue to be a synthetic minor source and the SSCP will continue to be responsible for compliance of this facility.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//