CONSTRUCTION PERMIT SUMMARY REPORT

Company Name: ABB Installation Products Inc. File Number: 54-0047 EPS Initials: JMRh

Permit Number(s): 981278 Source Point Number(s): 14, 16

Application Received (date): March 28, 2023 Application Complete (date): May 4, 2023

Air Quality Analysis Performed? Yes☐ No☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

ABB Installation Products Inc. (ABB) operates two existing electroplating lines permitted under operating permits 076626 (Source 14, Unique ID #17161) and 078709 (Source 16, Unique ID #05081). The electroplating lines include a variety of process tanks containing various aqueous solutions of cleaners, rinse waters, non-cyanide alkaline zinc electroplating solution, and trivalent chromium conversion coatings. Four wet, packed-bed scrubbers control emissions from the tanks specified in the table below.

Source (Unique Source ID #)	**Tank Nos.**	**Tank Processes**	**Control Equipment ID**	**Scrubber Air Flow Rating (cfm)**
54-0047-14 (Unique Source ID #17161)	2, 3, and 4	Pre-soak Clean, Soak Clean, Electroclean	Unique Source ID #17161, Scrubber #1	51,460
	7A and 7B	Acid Dip		
	10A through 10G	Alkaline Zinc	Unique Source ID #17161, Scrubber #2	76,255
	14A and 14B	Chromate Conversion	No Controls	--
54-0047-16 (Unique Source ID #05081)	2 and 3	Soak Clean, Electroclean	Unique Source ID #05081, Scrubber #2	37,900
	6A and 6B	Acid Dip		
	9A through 9G	Alkaline Zinc	Unique Source ID #05081, Scrubber #1	76,255
	13A and 13B	Chromate Conversion	No Controls	--

This permit modification would allow ABB to modify the acid solution used in the acid tanks for both electroplating lines. ABB has requested flexibility to use either a sulfuric acid solution or an aqueous hydrogen chloride solution (HCl) in the acid tanks. Since HCl is a pollutant of concern under Tennessee's Ambient Air Quality Standards, the Division was required to evaluate the sources potential air quality impact. Based on the uncontrolled potential to emit HCl and stack conditions, the Division determined that HCl emissions modeling would not be required.

Both electroplating lines include two chromate conversion coating tanks that contain plating and polishing metal HAP. Therefore, both emission sources are subject to 40 CFR 63, Subpart WWWWWW – National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations.

Rules Analysis

Title V☐ Cond. Major☐ Minor☒ Source category listed in 1200-3-9-.01(4)(b)1(i)? Yes☐ No☒

Reason for PSD:	New source above ____ TPY	☐	Sig. increase in ____ emissions	☐	N/A ☒
Applicable NSPS:	40 CFR Part 60, Subpart ____	☐	State Rule 1200-3-16-. _____	☐	N/A ☒
Applicable NESHAP:	40 CFR Part 61, Subpart ____	☐	State Rule 1200-3-11-. _____	☐	N/A ☒
Applicable NESHAP:	40 CFR Part 63, Subpart 6W	☒	State Rule 1200-3-31-. _____	☐	N/A ☒

Other Applicable State Rules

PM Emissions:	1200-3-	07	-.	01(5)	☒	N/A ☐	NO_x Emissions:	1200-3-	____	-.	_____	☐	N/A ☒
SO_2 Emissions:	1200-3-	____	-.	_____	☐	N/A ☒	Lead Emissions:	1200-3-	____	-.	_____	☐	N/A ☒
CO Emissions:	1200-3-	____	-.	_____	☐	N/A ☒	HCl Emissions:	1200-3-	07	-.	.07(2)	☒	N/A ☐
VOC Emissions:	1200-3-	____	-.	_____	☐	N/A ☒	_____ Emissions:	1200-3-	____	-.	_____	☐	N/A ☐

Visible Emissions from Source not to exceed 20 % opacity per Method 9 (Rule 1200-3- 05 -.03(6))

Comments: _____

_____

Emission Summary

Permit Number: 981278

Source Status: New☐ Modification☒ Expansion☐ Relocation☐ **Permit Status:** New☒ Renewal☐

PSD☐ NSPS☐ NESHAPs☒ **Previous Permit Number:** **Construction** _____ **Operating** 076626 078709

	Pounds/Hour			Tons/Year				Date of Data	Applicable Standard
	Actual	Potential	Allowable	Actual	Potential	Allowable	Net Change		
Source 54-0047-14: Electroplating Line									
PM[a, b]		0.0016	0.00835		0.0070	0.0366	--	03/27/2023 09/28/2017	TAPCR 1200-03-07-.01(5)
SO_2							--		
CO							--		
VOC							--		
NO_X							--		
HAP[c] (HCl)		0.21			0.88	0.88	+0.88	03/27/2023 09/28/2017	TAPCR 1200-03-07-.07(2)
Source 54-0047-16: Electroplating Line									
PM[a, b]		0.0016	0.0075		0.007	0.033	--	03/27/2023 09/21/2018	TAPCR 1200-03-07-.01(5)
SO_2									
CO									
VOC									
NO_X									
HAP[c] (HCl)		0.20			0.88	0.88	+0.88	03/27/2023 09/21/2018	TAPCR 1200-03-07-.07(2)

*Source of data: The modification application dated March 27, 2023, and the construction applications dated September 28, 2017, and September 21, 2018.

a) The potential particulate matter emissions are calculated based on emission factors generated by an AP-42 equation that converts hard chromium electroplating emission factors into emission factors for alternative metal electroplating processes [AP-42, Chapter 12.20, Hard Chromium Electroplating, Equation (2)].
b) Due to the high exhaust flow rates from the scrubbers, allowable particulate matter emission rates based on 0.02 grains per dry standard cubic foot of exhaust gas [TAPCR 1200-03-07-.04(1)] would be significantly higher than either sources potential to emit particulate matter. Pursuant to TAPCR 1200-03-07-.01(5), ABB has agreed to allowable particulate matter emission rates of 0.00835 and 0.0075 pounds per hour for sources 14 and 16, respectively (agreement letter dated August 22, 2023).
c) The HCl emissions are based on the evaporation rate of a 14 wt% aqueous solution of HCl at 25°C with a 2,000 fps maximum air velocity across the surface of each acid tank.

PERMITTING PROGRAM: JMRh DATE: August 25, 2023