

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating
PERMIT ID: F-23-047

Schneider Electric USA, Inc.
1601 Mercer Road
Lexington, KY 40511

November 16, 2023
Nathan Cox, Reviewer

Source ID: 21-067-00041
Agency Interest #: 1098
Activity ID: APE20230001

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SECTION 1 - SOURCE DESCRIPTION

SIC Code and description: 3613, Switchgear and Switchboard Apparatus.

Single Source Det. Yes No If Yes, Affiliated Source AI:

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category:

County: Fayette

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No

If yes, list which pollutant(s):

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

Schneider Electric USA, Inc. (Schneider Electric) conducts a variety of industrial processes including electroplating, painting, stamping, molding, and assembly.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-23-047

Activity: APE20230001

Application Received: 6/26/2023

Application Complete: 10/18/2023

Permit Action: Initial Renewal Significant Rev. Minor Rev. Administrative

Construction/Modification Requested? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action

- Schneider Electric USA Inc. has requested a renewal of their Conditional Major Operating permit.

F-23-047 Emission Summary		
Pollutant	2022 Actual (tpy)	PTE F-23-047 (tpy)
CO	-	16.3
NOx	-	20.2
PT	-	12.6
PM ₁₀	-	12.6
PM _{2.5}	-	12.6
SO ₂	-	0.2
VOC	42.48	111.6*
Lead	-	9.55E-05
Greenhouse Gases (GHGs)		
Carbon Dioxide	-	22877
Methane	-	0.4
Nitrous Oxide	-	0.04
CO ₂ Equivalent (CO ₂ e)	-	22901
Hazardous Air Pollutants (HAPs)		
Combined HAPs:	-	0.50

* Note: Emissions limited by federally-enforceable emission limitations to ensure the source remains below major source thresholds.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Point #01 & 02 Boilers				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.40 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO ₂	1.68 lbs/MMBtu	401 KAR 59:015, Section 5(1)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
<p>Initial Construction Date: 3/2006</p> <p>Process Description: Two (2) boilers. each are as described below Cleaver Brooks, CBLE 500 HP Rated Capacity: 20.4 MMBTU/hr fuel input (each) Fuel: Natural Gas</p> <p>Applicable Regulations: 401 KAR 59:015, New Indirect Heat Exchangers, applicable to indirect heat exchangers having a heat input capacity greater than one (1) million BTU per hour (MMBtu/hr) commenced on or after April 9, 1972 (401 KAR 59:015, Section 2(1)).</p> <p>401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c to 60.48c (Subpart Dc), Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units is applicable since the boilers were installed after June 9, 1989 and have a rated capacity of more than or equal to 10 MMBtu/hr and less than or equal to 100 MMBtu/hr.</p> <p>Comments: Allowable emissions for the new unit are calculated using 401 KAR 59:015, Section 3(1) using the total rated heat input capacity of all affected facilities at a source which is 40.8 mm BTU/hr.</p> <p>401 KAR 63:002, Section 2(4)(jjjjj) 40 C.F.R. 63.11193 to 63.11237, Tables 1 to 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources is not applicable since the facility burns only natural gas in these units.</p> <p>401 KAR 63:002, Section 2(4)(iiii) 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD), <i>National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters</i> is not applicable since the facility is not a major source of HAPs.</p>				

Emission Point #03 Electrodeposition Coating Operation				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	Source-wide 90 tpy	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12-month rolling total
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & MSDS	Assumed based on material supplied in application
Opacity	20 percent	401 KAR 59:010, Section 3(1)	N/A	Weekly monitoring and recordkeeping

Initial Construction Date: 1978

Process Description:

This line consists of a nine stage pretreatment system, a 20,000 gallon E-Coat tank, a two stage post rinse and a bake oven. The bake oven has two natural gas fired burners rated at 2.5 MMBtu/hr each and is responsible for curing the anodic acrylic paint.

Applicable Regulations:

401 KAR 59:010, *New process operations*. This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances.

Comments:

The primary coating is a resin/pigment combination with shades added for color. The only hazardous air pollutant present as reported in the EDS is formaldehyde listed at 0.01%. Three chemicals are added to the E-Coat tank-side; butyl cellosolve, diisopropanolamine and ester alcohol. Butyl cellosolve, although a glycol ether, was delisted as a hazardous air pollutant by the EPA. The maximum coating usage for the potential to emit calculations is based on the maximum processing rate of metal to be coated for the line, which is 297 ft²/min or 156,103,200 ft²/yr. In 2012 the facility coated 34,179,417 ft², which is 22% of the potential. At the maximum potential, 244 lb/hr of coating material would be used.

Emission Points #04, #05, #07 - Plating Lines (JPS-117, PL-118 and PL-119)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	Source wide 90 tpy	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & MSDS	Assumed based on material supplied in application
Opacity	20 percent	401 KAR 59:010, Section 3(1)	N/A	Weekly monitoring and recordkeeping

Initial Construction Date: See Below

Electroplating Lines

Emission Point	Description	Construction Commenced	Control Device
7	JPS-117, plating line (not subject to WWWWWW)	1992	None
4	PL-118 (WRL) Tin plating, copper plating.	1998	None
5	PL-119 (WBL) Tin plating, copper plating	2000	None

Electroplating Lines Exhaust Points

Emission Point	Description
EU-96	EF-1; Plating Tanks Sulfuric Acid Exhaust (for all 3 lines)
EU-97	EF-2; Plating Tanks General Exhaust (Copper plating and Zincate) (WRL-118 & WBL-119)
EU-98	EF-3; Plating Tanks Nitric Acid Exhaust (for all 3 lines)
EU-99	EF-4; Plating Tanks Alkalines Exhaust (for all 3 lines)

Process Description:

The facility uses electrodeposition to coat the metal units.

Applicable Regulations:

401 KAR 59:010, *New process operations*. This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

Emission Points #04, #05, #07 - Plating Lines (JPS-117, PL-118 and PL-119)

401 KAR 63:002, Section 2(4)(uuuuu) 40 C.F.R. 63.11504 to 63.11512, Table 1 (Subpart WWWWWW), *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations* is applicable to a plating or polishing facility that has emissions of compounds of one or more of the metals cadmium, chromium, lead, manganese, and nickel. This regulation is applicable to EP04 and EP05 since the pretreatment material contains one of the target HAPs (nickel) above the specified concentration.

401 KAR 63:020, *Potentially hazardous matter or toxic substances* is applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality. 401 KAR 63:020 applies to EP07 (JPS-117 plating line) only because EP07 is not subject to 40 CFR 63 Subpart WWWWWW.

Comments:

Previously scrubbers were installed to prevent the deposition of material in the parking lot. During upset conditions, small chunks of deposited material in ducts had the potential to be pulverized by fan blades and subsequently emitted. These units were not considered pollution control devices and after changes to the process and ventilation, the issues have been resolved and scrubbers have been taken offline.

A review was performed of the ingredients of all chemicals used in the three plating lines. The copper and tin coating baths do not contain any target metal HAPs subject to WWWWWW. The product Zincate 330 by Benchmark Products Inc. is used in Tank 57 for EP04 and Tank 19 for EP05. The facility pretreats the metal parts with a Zincate 330 bath to chemically adhere a layer of zinc to the parts to enable them to be coated with tin or copper. The target concentration of nickel in these two tanks is 4% which is above the 0.1% listed in the Plating and Polishing NESHAP for area sources found in 40 CFR Part 63 Subpart WWWWWW. This pretreatment process subject to WWWWWW is electroless. EP07 (JPS-117 plating line) does not contain this product or any other product that would cause it to be subject to subpart WWWWWW.

The new exhaust points constructed in 2021. This is merely a reconfiguration of ductwork and results in no new emissions.

Emission Point #06 Cummins Fire Pump

Initial Construction Date: 7/1987

Process Description:

137 HP Diesel Pump (V-378-F2)

Rated Capacity: 7.4 gal/hr

Primary Fuel: Diesel

Applicable Regulation:

401 KAR 63:002, Section 2(4)(eee) 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* is applicable because the unit is a stationary RICE located at an area source of HAP emissions upon which construction commenced prior to June 12, 2006.

Comments:

The facility utilizes a 1987 Cummins diesel fire pump for fire protection.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

N/A

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of VOC emissions	401 KAR 52:030, <i>Federally-enforceable permits for nonmajor sources</i>	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010, <i>New process operations.</i>	EP 03, EP 04, EP 05, EP 07
401 KAR 59:015, <i>New indirect heat exchangers.</i>	EP 01, 02
401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c to 60.48c (Subpart Dc), <i>Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units</i>	EP 01, 02
401 KAR 63:020, <i>Potentially hazardous matter or toxic substances.</i>	EP 03, EP 07
401 KAR 63:002 Section 2(4)(eee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ) <i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.</i>	EP 06
401 KAR 63:002, Section 2(4)(uuuuu) 40 C.F.R. 63.11504 to 63.11512, Table 1 (Subpart WWWW), <i>National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations</i>	EP 04, EP 05

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 52:030, <i>Title V Permits.</i>	Source-wide

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

N/A

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*

The Division for Air Quality (Division) has performed modeling using SCREEN View on October 24, 2023 of potentially hazardous matter or toxic substances (2-Butoxy Ethanol, Formaldehyde, Hexane Nitric Acid, Sodium Hydroxide, Sulfuric Acid) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

N/A

SECTION 5 - PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-13-042	Initial	APE20130003	10/10/2013	1/2/2014	Initial Construction Permit	N/A
F-13-042 R1	Revision	APE20140001	11/3/2014	11/10/2014	Administrative Amendment	N/A
F-18-036	Renewal	APE20180001	8/2/2018	12/8/2018	Renewal Permit	N/A
F-18-036 R1	Revision	APE20210002	5/19/2021	8/23/2021	Add new exhaust units (EU 96, 97, 98 & 99) to existing electroplating lines	N/A

SECTION 6 – PERMIT APPLICATION HISTORY
None.

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds