



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Essex Furukawa, Fort Wayne, Indiana

FROM: Justin Smith, Environmental Engineer
AECAB (IL/IN)

THRU: Nathan Frank, Section Supervisor
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Essex Furukawa

Facility Location: 1601 Wall Street and 1700 West Swinney Ave, Fort Wayne, Indiana 46802

Date of Inspection: August 20, 2024

EPA Inspector(s):

1. Justin Smith, Environmental Engineer
2. Sasa Dunovic, Environmental Engineer

Other Attendees:

1. Eric Trauner, Regulatory Compliance Manager, Essex Furukawa
2. Bob Distler, EHS Director, Essex Furukawa
3. Paul Karkiewicz, Air Compliance Inspector, Indiana Department of Environmental Management
4. Ryan Waldroup, Engineering Manager, Essex Furukawa (Tour Only)
5. Alan Siebert, Senior Engineer, Essex Furukawa (Tour Only)

Contact Email Address: Eric.Trauner@essexfurukawa.com and Robert.Distler@spsx.com

Purpose of Inspection: To determine compliance with facility's operating permit, T003-43872-00269

Facility Type: Magnet wire manufacturing

Facility Name: Essex Furukawa

Facility Location: 1601 Wall Street and 1700 West Swinney Ave, Fort Wayne, Indiana 46802

Date of Inspection: August 20, 2024

Regulations Central to Inspection: 40 CFR Part 63, Subpart M - National Emission Standards for Hazardous Air Pollutants for Surface of Miscellaneous Metal Parts and Products

Arrival Time: 1:30 PM EST

Departure Time: 5:00 PM EST

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a Small Business
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Essex Furukawa staff unless otherwise noted.

Company Ownership:

In 2020, Essex Magnet Wire and Furukawa Electric Company completed a joint venture. The combined parties started doing business as Essex Furukawa (Essex).

Process Description:

Essex operates both a coating production plant and a magnet wire coating plant located at 1601 Wall Street and 1700 West Swinney Ave respectively.

Coating Production Plant

Raw materials delivered to the facility for coating production are resins and solvents. Resins include polyesters, polyurethanes, and polyvinyl. Solvents include phenols, cresols, xylenes, and aromatic 100s. Solvents are delivered via tanker cars and are stored in the tank farm just east of the coating production plant. The tank farm consists of 24 storage tanks, each with a capacity between 10,000 and 15,000 gallons. There are also two unloading bays. Nitrogen is used to transfer solvents from the tanker cars by creating pressure inside and vapors are displaced to the atmosphere. Resins are delivered in drums and super sacs.

The facility houses seven blend kettles, each with a capacity between 1,000 and 6,000 gallons, and three continuous stirred-tank reactors, each with a capacity between 5,000 and 6,000 gallons. Water cooled condensers are used for the reactors and kettles. A media mill is used to grind beads. A dust collector is used to collect particle emissions from the media mill. Solvents are transferred to the reactors via pumps and pipes, and resins are transferred to the reactors directly from their containers. Reactors run for several hours, with the length depending on the batch being made. Completed

mixtures go through filtration then are dispensed into 400-gallon totes and 55-gallon drums for delivery.

Magnet Wire Coating Plant

Facility receives copper and aluminum rods. Rods are drawn into the desired shape and size and then passed through an annealing oven. The wire goes through flow coating bath and a series of dyes contained within a permanent total enclosure (PTE). The coated wire then goes back through the oven for curing. Essex operates 15 oven lines, and several ovens have an internal oxidizer to control emissions. Ovens that do not have an internal oxidizer have their emissions routed to an incinerator. There are two incinerators at the facility. After wire is cooled, it is assembled into spools for weighing and then prepared for shipment.

Staff Interview:

Essex monitors the facial velocity of air in the PTE to check if the direction of the air flow goes into the enclosure. Approximately 90% of the wire they receive is copper and the remaining is aluminum. Emissions from oven lines identified as Ovens 53 through 57 are routed to the west incinerator, and emissions from oven lines identified at Ovens 58 through 60 are routed to the east incinerator. The temperature for the thermal oxidizers is monitored with two thermocouples and those are calibrated or replaced quarterly. There are three alarm buffers that give warning when the temperature drops close to the 3-hour average minimum temperature limit. Essex stated that they are not required to conduct a performance test on each oven line with internal oxidizers every five years. Instead, they can select a representative oven line for the performance test where the representative oven line is very similar to the other lines that it is representing. A performance test for an oven line would not be repeated until all oven lines in the representative group have been tested. Essex has two distinct oven types with internal oxidizers made by different manufacturers. Copper scrap is melted off-site then returned as copper wire rods.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

EPA observed the outside tank farm, coating production operation, and wire coating operation. EPA utilized a FLIR optical gas imaging (OGI) camera, FLIR GF 320 IF, during the tour. On the roof of the coating production plant, EPA inspectors observed emissions coming from reactor R-2's stack on the FLIR. Essex staff stated that heat is applied to reactor to drive water off and the emissions were potentially water vapors. Thermocouple readings for the thermal oxidizers and incinerators were observed, with the lowest temperature observed as 1395°F (excluding Oven 61 which was down at the time of tour). Essex staff stated that the minimum temperature limit was approximately 1000° F for the thermal oxidizers. The minimum temperature limit for the incinerators was not stated, but there did not appear to be visual indicators of low temperatures on the incinerator control panels.

Facility Name: Essex Furukawa
Facility Location: 1601 Wall Street and 1700 West Swinney Ave, Fort Wayne, Indiana 46802
Date of Inspection: August 20, 2024

Photos and/or Videos: were taken during the inspection and are listed in Appendix A.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- MACT Semi-annual reports submitted in the last three years
- Quarterly deviation and monitoring reports submitted in the last three years
- Emission calculations for the past two years
- Past performance tests for thermal oxidizers
- Results of capture efficiency measurements conducted in the last two years
- 3-hour average temperature records monitored on the incinerators that control emissions from ovens 52-66 for the period of August 1, 2023, to July 31, 2024.

DIGITAL SIGNATURES

Report Author: JUSTIN SMITH Digitally signed by JUSTIN SMITH
Date: 2024.10.09 14:35:39 -05'00'

Section Supervisor: Frank, Nathan Digitally signed by Frank, Nathan
Date: 2024.10.15 16:50:01 -05'00'

APPENDICES

1. Appendix A: Digital Image Log and Digital Video Log

Facility Name: Essex Furukawa

Facility Location: 1601 Wall Street and 1700 West Swinney Ave, Fort Wayne, Indiana 46802

Date of Inspection: August 20, 2024

APPENDIX A: DIGITAL IMAGE LOG AND DIGITAL VIDEO LOG

Inspector Name: Sasa Dunovic

Archival Record Location: [Enf EssexFurukawa IN 24 InspRpt](#)

Image Number	File Name	Date and Time (incl. Time zone and DST)	Latitude and Longitude	Description of Image
1	MOV_3476	8/20/2024 2:41 PM EST	N/A	R-2 stack emissions
2	MOV_3478	8/20/2024 3:29 PM EST	N/A	<i>Confidential Business Information</i>