

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

A428562436

FACILITY: LORIN INDUSTRIES		SRN / ID: A4285
LOCATION: 1960 S ROBERTS ST, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Rick DeCair , Environmental and Safety Manager		ACTIVITY DATE: 02/23/2022
STAFF: Scott Evans	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: An on-site compliance inspection to assess compliance with air quality regulations.		
RESOLVED COMPLAINTS:		

Introduction

On Wednesday, February 23, 2022, State of Michigan Department of Environment, Great Lakes, and Energy Air Quality Division (AQD) staff member Scott Evans (SE) conducted an on-site unannounced inspection of the Lorin Industries facility located at 1960 S Robert St. in Muskegon, Michigan, in order to assess compliance with Permit to Install (PTI) Nos. 111-97, 363-95, 590-93, 589-93, 127-85, 886-84, and 86-74 as well as all other applicable air quality regulations.

Lorin Industries is an aluminum anodizing facility. Large rolls of aluminum are run through a series of chemical treatments to achieve a final product, which can be cut as needed for the purchaser. There are multiple lines, each equipped to treat the aluminum in different ways as required by purchasers.

Inspection

Upon arrival at the facility, SE observed no visible emissions (VE) or odors during a perimeter view of the facility exterior. When entering the facility, SE was greeted by Environmental Health and Safety Manager Rick DeCair (RD) and Environmental Supervisor Tim Aebig (TA). After a brief discussion of the purpose of the day's visit, a walking inspection was conducted of the facility in which all production lines, including those no longer in operation, the facility cogen unit, and the facility roof were visited. All necessary records to assess compliance with applicable requirements were received by SE electronically to be reviewed remotely at a later date. These records were received on February 28, 2021.

PTI No. 111-97

This permit was applied for on January 6, 1997, and approved by the AQD on April 4, 1997. This permit contains ten special conditions (SC) applicable to four reciprocating natural gas-fired engines and contains opt-out limits for Hazardous Air Pollutants (HAPs) for the stationary source

SC13 requires that total volatile organic compound (VOC) emissions from the equipment not exceed 4.8 pounds per hour (lb/hr) nor 21 tons per year (tpy) based on a 12 month rolling time period. SC14 requires that total carbon monoxide (CO) emissions not exceed 3.8 lb/hr nor 67 tpy based on a 12 month rolling time period. SC15 requires that nitrogen oxides (NOx) emissions not exceed 10.0 lb/hr nor 43.8 tpy based on a 12 month rolling time period. All three of these special conditions were examined via records reviews, which are addressed further below in this report.

SC16 requires that VEs not exceed a 6-minute average of 20% opacity. Upon arrival, VEs were assessed and, as stated above, none were observed.

SC17 requires that the facility verify the lb/hr emission rates each for VOCs, COs, and NOx through testing upon the request of the AQD. In 1997 a stack test was run, which produced the following results:

- VOC emission rate of 0.96 lb/hr.
- CO emission rate of 2.9 lb/hr.
- NOx emission rate of 1.53 lb/hr.

These results demonstrated compliance with the requirements established in SCs 13, 14, and 15. At this time it is believed that these emission rates are accurate, and no new testing is required.

SC18 requires that each engine be equipped with a stack that is 10 inches in diameter that releases exhaust vertically at 45 feet above ground level. These stacks were not measured directly during the inspection for safety reasons, but visual inspection appeared to confirm compliance with that requirement.

SC19 contains three recordkeeping requirements:

- Natural gas usage and engine run hours per week must be recorded.
- Required maintenance conducted every 750 hours of engine runtime must be recorded.
- Records must be available upon request.

As required, these records were provided to the AQD upon request. Analysis of records from the past calendar year (2/23/2021 – 2/23/2022) yielded the following results:

- Weekly records of gas usage for each engine were provided and a copy is included with this report.
- Weekly records of hours of operation for each engine were provided and a copy is included with this report.
- Maintenance records were provided, and copies are included with this report.

These records demonstrate compliance with the associated conditions.

SC20 requires that records be maintained for the engines and the stationary source on a calendar month basis for the 12-month rolling annual emission limits for VOCs, COs, and NOx to demonstrate compliance with SCs 13, 24, and 15. The necessary records were provided for the stationary source and demonstrated the following analyses:

- Highest monthly VOC emissions were 0.77 tons in September of 2021.
- Highest 12-month rolling annual VOC emissions were 8.16 TPY from January 2021 through December 2021.
- Highest monthly CO emissions were 3.50 tons in September 2021.
- Highest 12-month rolling annual CO emissions were 38.65 TPY from January 2021 through December 2021.
- Highest monthly NOx emissions were 3.58 tons in September 2021.
- Highest 12-month rolling annual NOx emissions were 10.32 TPY from January 2021 through December 2021.

These results demonstrate compliance with the recordkeeping requirements as well as the emission limits of SCs 13, 14, and 15.

SC21 requires that Hazardous Air Pollutant (HAP) emissions from the stationary source not exceed 9 tpy based on a 12 month rolling time period for any individual HAP nor 22.5 tpy based on a 12 month rolling time period for aggregated HAPs. Source-wide emission records demonstrating compliance were provided and are discussed below.

SC22 requires that the following records be kept on a monthly basis:

- Individual monthly HAP emissions.
- Aggregate monthly HAP emissions.
- Individual 12-month rolling HAP emissions.
- Aggregate 12-month rolling HAP emissions.

Records were provided and yielded the following results upon analysis:

- The highest individual monthly HAP emissions were 0.38 tons of Formaldehyde in September 2021.
- The highest aggregate monthly HAP emissions were 0.57 tons in September 2021.
- The highest individual 12-month rolling annual HAP emissions were 3.92 TPY of Formaldehyde from January 2021 through December 2021.
- The highest aggregate 12-month rolling annual HAP emissions were 5.89 TPY from January 2021 through December 2021.

These records demonstrate compliance with the recordkeeping requirements of SC22 and the emission limits of SC21.

These engines have additional requirements outside of this permit that are discussed later in the "Other Items" portion of this report.

PTI No. 363-95

This PTI was originally applied for on July 17, 1995 and approved on August 31, 1995. An error was identified at a later date and a supplement to the PTI was approved on November 20, 1995. This permit contains 12 special conditions which are applied to "Line 8" of the facility, which is an anodizing line. The permit includes requirements regarding sulfuric acid emissions, phosphoric acid emissions, nitric acid emissions, and sodium hydroxide emissions. However, a detailed inspection of these requirements and associated equipment was not necessary during the inspection. This line has been inactive for many years with components of the line having been visibly dismantled and rendered inoperable. It was expressed by RD and TA that there are no plans to reactivate the line at this time. RD and TA were informed of the option to request that the permit be voided, and that resuming operation of the line may require a new permit. It was expressed that the facility wishes to void this permit and a formal request will be submitted so that this action can be completed by the AQD.

PTI No. 590-93

This permit was first applied for on July 26, 1993 and approved on September 3, 1993. It contains two special conditions that are applied to a new control scrubber associated with Line 6.

SC15 requires that visible emissions from the anodizing line not exceed an average of 20% opacity for any 6-minute time period. This line was not in operation during the inspection so a VE reading could not be obtained. The requirements were discussed, and the facility is aware of the responsibilities associated with this permit and the associated line.

SC16 requires that the line not be in operation without the associated scrubber being properly installed and operational. The scrubber was properly installed upon observation but was not running at the time as the line was not in use. The facility is aware of the requirements that the scrubber be in use any time the line is in use.

PTI No. 589-93

This permit was first applied for on July 26, 1993, and approved on September 3, 1993. It contains two special conditions that are applied to a new control scrubber associated with Line 1.

SC15 requires that visible emissions from the anodizing line not exceed an average of 20% opacity for any 6-minute time period. This was observed during the inspection and no VEs at the line were seen.

SC16 requires that the line not be in operation without the associated scrubber being properly installed and operational. The scrubber was properly installed and in operation during the inspection as indicated by active flow meters, demonstrating compliance with the condition.

PTI No. 127-85

This permit was first applied for on February 19, 1985 and approved on October 30, 1985. It contains four special conditions that apply to anodizing line 6.

SC10 requires that VEs from the line not exceed an average of 20% opacity for any 6-minute time period. This line was not in operation during the inspection so a VE reading could not be obtained. The requirements were discussed, and the facility is aware of the responsibilities associated with this permit and the associated line.

SC11 requires that the associated wet scrubber (a separate scrubber from the one added for additional control in PTI No. 590-93) be installed properly and in operation while the line is in operation. The scrubber was properly installed upon observation but was not running at the time as the line was not in use. The facility is aware of the requirements that the scrubber be in use any time the line is in use.

SC12 requires that a liquid flow indicator be installed and maintained for the wet scrubber. During the inspection the flow meter was observed to be installed. As the line was not in use, no reading could be taken during the inspection.

SC13 requires that the AQD be notified if significant changes to the raw materials that are used during production that may result in significant changes to emissions. It was discussed that the facility keeps to their standard materials and processes and that no significant changes have occurred since the last inspection. The facility appeared to be compliant with this requirement during the inspection.

PTI No. 886-84

This permit was first applied for on November 6, 1984 and approved on December 7, 1984. It contains six special conditions that apply to anodizing lines 1 and 4.

SC14 requires that VEs from the lines not exceed an average of 20% opacity for any 6-minute time period. This was assessed and no VEs were seen at the lines during the inspection.

SC15 requires that the associated wet scrubbers (separate scrubbers from the one added for additional control in PTI No. 589-93) be installed properly and in operation while the line is in operation. It was confirmed during the inspection that the scrubbers were properly installed and in operation.

SC16 requires that liquid flow indicators be installed and maintained for the wet scrubbers. During the inspection the flow meters were observed to be operational. The readings at the time of viewing were between 1.0 and 1.5 m/s for both scrubbers.

SCs 17 and 18 require that vertical stacks with an exit diameter at 28 inches and 32 feet above ground level be installed for lines 1 and 4 respectively. The stacks were not measured during the inspection for safety reasons, but visual inspection appeared to confirm that the stacks were of required dimensions.

SC18 requires that the AQD be notified if significant changes to the raw materials that are used during production that may result in significant changes to emissions. It was discussed that the facility keeps to their standard materials and processes and that no significant changes have occurred since the last inspection. The facility appeared to be compliant with this requirement during the inspection.

PTI No. 86-74

This permit was first applied for on March 8, 1974 and approved at that time. Later, a supplement to this permit was approved on July 7, 1987. It contains 4 special conditions that are applied to line 5 and its associated scrubber.

SC14 requires that VEs from the lines not exceed an average of 20% opacity for any 6-minute time period. This line was not in operation during the inspection so a VE reading could not be obtained. The requirements were discussed, and the facility is aware of the responsibilities associated with this permit and the associated line.

SC15 requires that the associated wet scrubber be installed properly and in operation while the line is in operation. The scrubber was properly installed upon observation but was not running at the time as the line was not in use. The facility is aware of the requirements that the scrubber be in use any time the line is in use.

SC16 requires that a liquid flow indicator be installed and maintained for the wet scrubber. During the inspection the flow meter was observed to be installed. As the line was not in use, no reading could be taken during the inspection.

SC17 requires that the AQD be notified if significant changes to the raw materials that are used during production that may result in significant changes to emissions. It was discussed that the facility keeps to their standard materials and processes and that no significant changes have

occurred since the last inspection. The facility appeared to be compliant with this requirement during the inspection.

Other Items

The engines covered in PTI No. 111-97 are reciprocating internal combustion engines (RICE) that were installed prior to June 12, 2006, and do not appear to have been modified. As such, they are not subject to New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart JJJJ. These Spark Ignition engines are subject to the RICE Maximum Available Control Technology (MACT) standard 40 CFR Part 63 Subpart ZZZZ. The facility submits annual reports demonstrating compliance with these requirements. The most recent report was submitted on February 2, 2022 and reported no compliance issues. A copy will be included with this report. These engines have associated stacks in order to comply with requirements of dispersion of air emissions. These stacks were not directly measured during the inspection, but a rangefinder was used to approximate the heights of each stack to be around 45 ft. vertically above ground level. It was expressed by the facility as well that all energy produced by this cogen system is used internally and that none is sold for external use.

The facility has two natural gas boilers on site. Both were installed in 1966. One has a BTU rating of ~25 mBTU/hr and the other ~21 mBTU/hr. Since both were installed prior to August 15, 1967 they are grandfathered and are not subject to air permitting requirements. They are also not subject to NSPS 40 CFR Part 60 Subpart Dc as they were installed prior to June 9, 1989. They are not subject to Boiler MACT 40 CFR Part 63 Subpart JJJJJ as they are natural gas fired.

Line 7 at the facility has historically operated under exemption Rule 290. However, the line has since been dismantled and left inoperable. This has been the case for over ten years. As such, no records were required for this equipment.

Conclusions

At the conclusion of this inspection, the facility appeared to be compliant with all requirements outlined in the associated permits to install as well as all other applicable air quality requirements.

NAME Scott Evans

DATE 3/31/2022

SUPERVISOR HH