

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

N770760681

<b>FACILITY:</b> Shelby Foam Systems, a Division of Magna Seating		<b>SRN / ID:</b> N7707
<b>LOCATION:</b> 6200 26 MILE RD, SHELBY TWP		<b>DISTRICT:</b> Warren
<b>CITY:</b> SHELBY TWP		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Linda Moore , EH&S Specialist		<b>ACTIVITY DATE:</b> 10/28/2021
<b>STAFF:</b> Rem Pinga	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> On-site Inspection		
<b>RESOLVED COMPLAINTS:</b>		

On October 28, 2021, I conducted an on-site inspection at Shelby Foam Systems, a Division of Magna Seating of America, Inc. The facility is located at 6200 26 Mile Road, Shelby Township, Michigan 48316. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), the administrative rules, the Renewable Operating Permit (ROP) No. MI-ROP-N7707-2018, Permit to Install (PTI) No. 303-06F, and the area source MACT, 40 CFR Part 63 Subpart OOOOOO. During the pre-inspection meeting, I met with Ms. Linda Moore, EH&S Specialist, and facility contact. Ms. Moore accompanied me during the walk-through inspection.

To comply with the COVID-19 Emergency AQD Field Inspection Guidance Update (June 2020), the inspection was announced and scheduled. I entered the facility wearing face mask, face shield, safety glasses, hard hat, and safety shoes. Following AQD guidance, I obtained recordkeeping information through email prior to the inspection. During inspection, I requested additional information which were emailed to me by Ms. Moore.

ROP No. MI-ROP-N7707-2018 contained federally enforceable restrictions on the single and aggregate Hazardous Air Pollutants (HAPs) emissions to be considered as a synthetic minor permit for HAPs. The facility obtained Permit to Install (PTI) No. 303-06F on 10/16/2019 to modify EU-Anti-Squeak into a total of 4 spraybooths: two 3-sided spraybooths, one enclosed spray system over the belt, and one back-up 3-sided spraybooth in case the over the belt spray system fails.

The facility manufactures seat cushions used in the production of automotive seats. The facility is now operating 3 shifts per day (0700 to 1530 hours, 1500 to 2330 hours, and 2300 to 0730 hours) and 6 to 7 days per week for all the lines. Per Ms. Moore, the facility shut down on March 20, 2020 due to the Covid-19 pandemic, but it has returned back to 3 shifts from late FY2020. The seat cushion is produced by injecting/mixing polyol, polymeric diphenylmethane diisocyanate (MDI), and some additives into a lid and bowl type molding press and allow for chemical reaction to occur for about 3 to 4 minutes to form the product.

Per ROP No. MI-ROP-N7707-2018 (B) SOURCE-WIDE CONDITIONS (VI.1, 2 & 3), the facility kept records of individual and aggregate monthly HAP(s) emission rates and monthly 12-month rolling total emission rates through September 2021. Per ROP No. MI-ROP-N7707-2018 (B) SOURCE-WIDE CONDITIONS (I.1 & I.2), the facility's highest monthly 12-month rolling total aggregate HAPs emission rate in 2021 occurred in September 2021 at 0.518 ton and below both the individual HAP permit limit of 9.5 tpy as well as the aggregate HAPs permit limit of 24.5 tpy. Chlorobenzene showed the highest monthly 12-month rolling total individual HAP emission rate at 0.198 ton/year for January 2021.

During the walk-through inspection, I observed the RT Line, the CF Line, and the Anti-Squeak process operating. EU-RTLine utilizes a mold release solvent to help release the seat cushion product from the mold. The mold release solvent contains volatile organic compounds (VOCs) and Hazardous Air Pollutants (HAPs). The EU-RTLine comprises of 32 individual carriers (3molds/carrier) that are lined up in an oval shaped conveyor system similar to a race track (hence RT line). The line is divided into 2 work stations in succession, wherein, designated manual HVLP applicators spray mold release solvent and/or paste wax to the mold, prior to injection of polyol/MDI mixture. The bowl is sprayed in the first station while the lid is sprayed in the second station. The plastic components are mixed at the spray gun and poured into the bowl through robotic applicators during the foam application stage. After the lid is closed, the process undergoes a chemical reaction, under high pressure, to form the polyurethane cushion/foam product for bench seat and back seat production. The entire production cycle occurs for about 6.0 to 6.5 minutes. The line has an exhaust ductwork system at the back to capture any potential air emission releases and exhausted through 4-24" Diameter stacks (SV-RTLine-02...05), as required in ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (VIII). The line also has an additional exhaust stack, SV-RTLine-01, for heat release only.

Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (I.1), the facility's monthly 12-month rolling total VOC emission rate from January 2021 through September 2021 was highest in June 2021 at 31.3 tons per year (tpy). This VOC emission rate was in compliance with the permit limit of 102 tons/year. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (I.2), the facility's monthly 12-month rolling total Hydrocarbon Naphtha emission rate from January 2021 through September 2021 was highest in June 2021 at 5.032 tpy and less than the 18.7 permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (II.1), the facility's spray mold release (PU11353) VOC content was reported at 6.0 lb./gallon and less than the 6.2 lb./gallon permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (II.2), the paste wax (PU11183) VOC content was reported at 4.4 lb./gallon and less than the 5.1 lb./gallon permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (III.1 & 2), the facility appeared to be capturing and disposing waste materials in

an acceptable manner and containers of VOC/HAP containing materials and waste materials were covered at all times during inspection. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (IV), I observed airless manual applicators were used to spray the mold release during the walk-through inspection. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (V), the facility obtains data sheet from the mold release and wax manufacturer and utilizes formulation data to calculate for emissions. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (VI), the facility keeps records of mold release and paste wax VOC contents, raw materials usage, and calculations of monthly and monthly 12-month rolling total VOC emission rates for EU-RTLine. Per ROP No. MI-ROP-N7707-2018 (C) EU-RTLine (VII), the facility submits the annual and semi-annual compliance/deviation ROP Report Certification timely.

The EU-CFLine comprises of 24 individual lid and bowl type molds arranged in a circular carousel (hence the carousel line). This line produces seat cushion/foam for bucket seat production. The process is similar to the EU-RTLine process except for the use of airless spray guns for mold release applications and negative pressure. Each mold press has a filtered exhaust duct at the top connected to the 36 inches diameter exhaust stack, as required in ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (VIII.1). This is a common stack that is also utilized by the anti-squeak line. The facility replaced the HVLP guns with the airless spray guns in December 2011 and submitted documentation that the airless spray guns have better transfer efficiency than HVLP guns per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (IV.1). Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (I.1), the facility submitted records showing the monthly 12-month rolling total VOC emission rate from January 2021 through September 2021 was highest in June 2021 at 13.3 tpy and in compliance with the permit limit of 47 tons/year. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (I.2), the facility monthly 12-month rolling total Hydrocarbon Naphtha emission rate from January 2021 through September 2021 was highest in June 2021 at 2.137 tpy and in compliance with the permit limit of 8.7 tpy. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (II.1), the facility's spray mold release VOC content was reported at 6.0 lb./gallon and less than the 6.2 lb./gallon permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (II.2), the paste wax VOC content was reported at 4.4 lb./gallon and less than the 5.1 lb./gallon permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (III.1 & 2), the facility appeared to be capturing and disposing waste materials in an acceptable manner and containers of VOC/HAP containing materials and waste materials were covered at all times during the walk-through inspection. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (V), the facility obtains data sheet from the mold release and wax manufacturer and utilizes formulation data to calculate for emissions. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (VI), the facility keeps records of mold release and paste wax VOC contents, raw materials usage, and calculations of monthly

and monthly 12-month rolling total VOC emission rates for EU-CFLine. Per ROP No. MI-ROP-N7707-2018 (C) EU-CFLine (VII), the facility submits the annual and semi-annual compliance/deviation ROP Report Certification timely.

Under PTI No. 303-06F, EU-Anti-Squeak consists of spraybooths used to coat the underside of select parts to prevent friction noise between the automotive seat frame and the foam cushion. The parts are coated in spraybooths consisting of two 3-sided spraybooths line and an enclosed spray system over the belt. The Anti-Squeak emission unit also includes another idle 3-sided spraybooths line which is only used if the enclosed spray system over the belt fails. During walk-through inspection, I observed one 3-sided spraybooths and the over the belt spray system installed and operating. The seat cushions/foams from EU-RTLine and EU-CFLine are inspected, trimmed, sanded, repaired, and packaged for shipment to customers. An anti-squeak water-based emulsion is applied to the foam prior to packaging and shipment to customers. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (I.1), the facility submitted records showing the monthly 12-month rolling total VOC emission rate from January 2021 through September 2021 was highest in September 2021 at 0.010 tpy and in compliance with the permit limit of 1.0 tpy. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (II.1), the Anti-Squeak material VOC content was reported at 0.017 lb./gallon and in compliance with the permit limit of 0.04 lb/gallon. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (III.1, 2, & 3), I observed that the facility appeared to be capturing and disposing waste materials in an acceptable manner and spent filters were disposed properly in a closed container. I observed VOC containing material containers covered during the walk-through inspection. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (IV.1 & IV.2), I observed filters in place for the spraybooths and without gaps. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (V.1), the facility utilized manufacturer's formulation data to calculate for emissions. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (VI), the facility keeps records of coating VOC content, gallons of coating used and calculations of monthly and monthly 12-month rolling total VOC emission rates for EU-Anti-Squeak. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (VII), the facility submits the annual and semi-annual compliance/deviation ROP Report Certification timely. Per ROP No. MI-ROP-N7707-2018 (C) EU-Anti-Squeak (VIII), this emission unit shares a stack (SV-CFLine) with EU-CFLine.

ROP No. MI-ROP-N7707-2018 also included EU-RULine for a new line to produce foam bench seat cushions and backs for automotive applications. During walk-through inspection, this line remains uninstalled. Although this emission unit was included in the ROP, the 18 months installation deadline from the permit to install issuance (PTI No. 303-06E dated 06/23/2017) was over, per General Conditions No. 2 of PTI No. 303-06E. This permit is now superseded by PTI No. 303-06F. I discussed this

situation with Ms. Moore and informed her that the facility needs to apply for a new permit to install if they decide to install EU-RULine in the future.

ROP No. MI-ROP-N7707-2018 contained an emission unit, EU-EMERGEN, for a 1120 kilowatts (kW) diesel-fueled emergency generator. The generator falls under the category of compression ignition (CI) reciprocating internal combustion engine (RICE) that shows a model year of 2013 and has a displacement of 2.7 liters/cylinder. EU-EMERGEN is subject to 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, as a new RICE located at an area source of HAP emissions. An affected source that meets any of the criteria in paragraphs 40 CFR 63.6590(c)(1) through (7), must meet the requirements of 40 CFR Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII, for CI engines. During the walk-through inspection, I verified that the emergency generator is a 1474 Brake Horsepower (BHP), diesel fired Caterpillar RICE.

The AQD has on record several data about the engine. A notice was received on 4/22/2014 for date of installation and startup at 01/03/2014. The engine's rated heat input calculates to about 3.75 MMBtu/hr., thus exempt from permit to install requirements per AQD Administrative Rule R 336.1285 (g) (the rated heat input is less than 10 MMBTU/hr). As an emergency generator, the facility is not required to submit initial notification. The engine is V12 and has a total displacement of 32 liters thus falls under < 30 li/cyl displacement category subject to §60.4205(b) and §60.4211(c) compliance requirements. A USEPA Certificate of Conformity with CCA of 1990 for the same Caterpillar Engine was submitted to meet and as substitute for testing requirements of emission limits.

Per ROP No. MI-ROP-N7707-2018 (C) EU-EMERGEN (IV.2), I observed the non-resettable hour meter at 270.2 hours. Ms. Moore took a photo of the hours meter while we were at the generator site and sent to me via email.

Per ROP No. MI-ROP-N7707-2018 (C) EU-EMERGEN (III & VI), the facility conducts once a year tune-up through an outside contractor, bi-weekly inspection and 20 minute maintenance runs, and twice per year general inspection of the generator by the outside contractor. Per ROP No. MI-ROP-N7707-2018 (C) EU-EMERGEN (I.1), the NMHC + NO<sub>x</sub> certified value for the engine was 4.93 g/kW-hr and less than the 6.4 g/kW-hr permit limit, as reported in the last inspection report. Per ROP No. MI-ROP-N7707-2018(C) EU-EMERGEN (I.2), the CO certified value for the engine was 0.13 g/kW-hr and less than the 3.5 g/kW-hr permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-EMERGEN (I.3), the PM certified value for the engine was 0.018 g/kW-hr and less than the 0.20 g/kW-hr permit limit. Per ROP No. MI-ROP-N7707-2018 (C) EU-EMERGEN (II.1 & VI.3), facility submitted diesel fuel certification from supplier dated 11/15/2017 showing Sulfur content of 15 ppm and minimum Cetane Index of 40. Ms. Moore mentioned that the same fuel is used to fire the engine. Per ROP No. MI-ROP-N7707-2018 (C) EU-

**EMERGEN (III.4 & VI.3), facility submitted records showing beginning and ending operating dates, hours of operation for non-emergency and emergency runs, and description of use. For FY2021, the facility total run time through October 20 2021 showed 44.8 hours which included 27 hours run time for emergency. If you prorate to December 2021, the total run time will still be less than the 50/100 hours limit for non-emergency operation per year.**

**The RO permit included FG-Coldcleaners, for any parts washer installed after July 1, 1979 that is exempt from permit to install requirements per AQD Rule R 336.1285(r)(iv) or R 336.1281(h). Per ROP No. MI-ROP-N7707-2018 (D) FG-Coldcleaners, the facility has one parts washer that uses non-halogenated solvent. The facility keeps records of equipment dimensions, vapor pressure, quantity used, type of solvent used, etc. It has an air/vapor interface of less than 10 square feet (36"x18"). During the walk-through inspection, I observed the cover was closed. I observed safety/operating instructions posted by the cover. The solvent used was replaced from Super Agitene 141 to Safety Kleen Premium Solvent.**

**Per ROP No. MI-ROP-N7707-2018(D)FG-MACTOOOOOO, the facility submitted the initial/compliance notification requirements dated 8/11/2008. The company showed compliance with the applicable requirements of the standard by certifying that methylene chloride was not used at the facility. Submitted records also showed no methylene chloride in the mold release agent, paste wax, etc.**

**Overall, I did not observe any noncompliance issues during the inspection.**

NAME

DATE 11/03/2021

SUPERVISOR

