

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

P0810
Manila

P081039422

FACILITY: Brose New Boston Inc.		SRN / ID: P0810
LOCATION: 23400 Bell Road, NEW BOSTON		DISTRICT: Detroit
CITY: NEW BOSTON		COUNTY: WAYNE
CONTACT: Jeniffer Brautigam , Environment Liason		ACTIVITY DATE: 04/17/2017
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: Minor
SUBJECT: Site review to evaluate existing operations at the New Boston facility		
RESOLVED COMPLAINTS:		

SRN: P0810
Source Name: Brose New Boston Inc.
Facility Address: 23400 Bell Road, MI 48164
Inspection Date: April 17, 2017
Reason for Inspection: Self-Initiated Inspection
AQD Inspector: Nazaret Sandoval
Source Contact: Thorsten Kathöfer, Project Lead Extension
 Jeniffer Bräutigam, Environmental New Boston

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BACKGROUND INFORMATION

Brose is a family-owned company whose core business is the production of mechatronic components and systems for the automotive industry. The company is a global supplier of technology for vehicle doors and lift-gates; adjustment systems for front and rear seats and electric motors and drives. Brose has three locations in Michigan: Brose North America, Inc., the company's regional headquarters which is located in the city of Auburn Hills; Brose in Jefferson, Inc. located in Warren, produces doors and closure systems; and Brose New Boston, Inc. located at 23400 Bell Road, New Boston, MI 48164 which is the subject of this inspection and it is described below.

Brose New Boston Inc. started operations around September of 2014. The current products include door modules, seat structures and drives for power lift gates. The facility has a light assembly operation on site, but there are plans for an expansion. The scope of the expansion project was described to the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) in early 2017. Brose plans to add a laser welding and an electro-coating (e-coating) line for the steel seat rails at the New Boston site. E-coating is a method of painting that uses electrical current to deposit the paint. The project is being launched from their headquarters in Germany.

In late February 2017, AQD Permit Section staff contacted AQD Detroit District Office (AQD Detroit) and requested information about the current operations at Brose New Boston, Inc. (Brose). AQD Permit Section wanted to know if a State Registration Number (SRN) had been assigned to the facility and if the source had a permit to operate. In addition, AQD Permit Section provided information about the expansion project. On the same week, in February 2017, AQD Detroit received an email from Ms. Jessie Richmond, EHS Specialist for Brose North America, Inc. requesting guidance with respect to the state regulations applicable to their operations.

The inspection conducted on April 17, 2017 was initiated to answer some of the question raised by Brose, and to verify if the existing equipment / operations at their New Boston facility are exempt from state permitting. The eligibility of Permit to Install (PTI) exemptions for the equipment proposed by the expansion project is not within the scope of this inspection. In addition, we will evaluate the applicability of federal regulations to the existing processes and/or equipment.

INSPECTION NARRATIVE

On April 17, 2017 at about 8:30 AM I arrived at Brose to conduct a site inspection. I was received by Ms. Jeniffer Bräutigam, Environmental New Boston. Mr. Scott Siebarth, Brose New Boston Facility Manager, joined our conversation and guided the tour of the facility.

After the introductions, I handed out a copy of the AQD "Permit to Install Exemption Handbook" (last updated in January 2017) and I informed Brose's representatives that the main purpose of the site inspection was to evaluate if the existing operations at the New Boston location are exempt from the requirement to obtain a Permit to Install (PTI). The permit to install exemptions are listed under R 336.1280 to R 336.1291 of the Michigan Air Pollution Control Rules (Michigan Rules 280 - 291).

Before starting the tour Ms. Bräutigam provided a copy of the layout for the existing building. The sources of air emissions were identified. The plan showed existing natural gas heating units and their exhaust stacks. The layout also showed the area of the building that would be extended and the estimated location of the new stacks after the project expansion. The stacks and vents for the expansion project were also depicted in the flow diagram of the proposed paint line - See Appendix A.

As we walked through the different sections of the building Mr. Scott Siebarth explained the facility operations. I observed various light assembly lines and quality control areas but there were no in-plant air emissions or venting out. Then, as we walked to the west side of the building there were several infrared tube heaters hanging from the ceiling. There was a total of twelve (12) of them, all the way from north to south by the location of the dock doors. In the same "west area", there were two bigger vent units, one on the north side and the other on the south side. I was told that those were heating units of the "Cambridge Series". Mr. Siebarth indicated that there were two more Cambridge heating units at the other side on the main floor, for a total of four (4) higher capacities heater. All the space heaters use natural gas as combustible. There was a total of sixteen (16) stacks for the gas heating units. All the listed exhausted stacks are identified in the layout included in Appendix A.

I requested a summary with the list of the existing space heater units and their maximum input rate in Btu per hour. The table is attached to this report in Appendix B. The list includes all the heaters cited above plus the office roof top units. These are top "Carrier" units located on the roof of the building's office area. I did not inspect them, but according to the information provided by Brose, there are a total of eight (8) office roof top units. The estimated heat input rate for the additional natural gas fired space heater units to be installed at the facility after the expansion is also included in the summary but they will not be considered in the analysis presented in this report because they are not currently installed.

The facility has a part cleaner that uses a water based solvent. I asked for the Safety Data Sheet (SDS) for the chemical compound used in the cleaning operations. A copy is included

in Appendix C. The commercial name of the compound is Bio-Circle L. According to the "Physical / Chemical" properties in the SDC, this is a liquid soluble in water with "zero" VOC contain. Per Section 15 of the SDC – Regulatory Information, this chemical is not a Hazardous Air Pollutant (HAP) under the CAA.

Before the conclusion of the facility tour, near 10:30 AM, I asked if they had boilers and/or emergency generators. There are not boilers, but there is an emergency generator. Mr. Siebarth (Facility Management-Brose New Boston) brought us to the location of the generator, which is outside on the north-east of the building. I asked for the manufacturer's specifications for the emergency generator. A copy of the generator's technical specifications was provided by Mr. Siebarth via email on 4/18/2017 (see Appendix D). At this point, Mr. Siebarth left the group to continue with his daily work, and Ms. Bräutigam accompanied me during the rest of the inspection activities.

The activities described below, although not directly related to the objective of the inspection conducted on April 17, 2017 were carried out by the AQD inspector to clarify some issues regarding permit requirements affecting the expansion project.

Mr. Thorsten Kathöfer, who leads the New Boston Project expansion, joined us at about 11:00 AM. He wanted to clarify the applicability criteria for the "General Permit to install Coating Line (s) Emitting up to 10 tons per year of VOCs" (hereafter, General Permit); which have been previously discussed with AQD Permit Section. I suggested to contact DEQ/AQD Permit Engineer, Vrajesh Patel and see if he was available for a conference call. We contacted Mr. Patel and he joined us in the meeting via phone. Mr. Patel explained in detail the applicability criteria and the conditions that sets the basis to qualify for the Coating Line (s) General Permit. Mr. Patel answered Mr. Kathöfer's questions and indicated that AQD Permit Section does not make recommendations about the type of permit a company should or shouldn't select. It would be the company's responsibility to evaluate each one of the requirements and decide if the new e-coating operations meet the criteria for the General Permit. All the information about the permit options available had been provided to the company in previous email communications. Mr. Patel offered his availability for questions.

After the lunch break (at about 1 PM) I met one-on-one with Ms. Bräutigam. I wanted to provide some guidance with respect to the type of evaluation AQD conducts to determine applicability of the "Permit to Install Exemptions" for the existing equipment. I also discussed the potential to emit (PTE) concept. The Potential to emit (PTE) is the maximum amount of air contaminants that a facility could possibly emit when each piece of equipment operates at 100 percent of its design capacity; each piece of equipment operates 24 hours per day, 365 days per year; materials that emit the most air contaminants are used 100 percent of the time; and air pollution control equipment is turned off.

To finalize our meeting, I examined some of the relevant issued related to the permit application that were discussed during in the conference call with Mr. Patel and I showed Ms. Bräutigam the General Permit format and the type of information and records that Brose New Boston would be expected to maintain if a General Permit is issued for the installation of the e-coating line

I left the facility at about 4:00 PM.

APPLICABLE REQUIREMENTS

State Regulations:

The AQD within the DEQ ensures that Michigan's air remains clean by regulating sources of air pollutants to minimize adverse impact on human health and the environment.

The AQD enforce the requirements of the Administrative Rules, (Michigan Air Pollution Control Rules) under the authority 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).

Pursuant to R 336.1201 (Rule 201) of Part 2 – “Air Use Approval” of the Air Pollution Control Rules, a person must obtain a permit to install for the installation, construction, reconstruction, relocation or modification of any process or process equipment, which may emit any air pollutant regulated by title I of the clean air act and its associated rules, or any air contaminant. There are some exemptions to Rule 201, which are listed in R 336.1280 to R336.1291.

Brose at New Boston, Inc. started operations in 2014. However, the facility had not been identified as a source of air pollution and it did not have a State Registration Number (SRN) in the Michigan Air Compliance Enforcement System (MACES). In other word, this is a new source that came to our knowledge due to the future expansion of its operations.

According to Brose, the existing equipment and operations in New Boston are exempt from the AQD PTI requirements dictated by Rule 201. The focus of this evaluation is to verify the applicability of the following Michigan Pollution Control Rules to the existing operations:

R.336.1282 – Permit to install exemptions; furnaces, ovens, and heaters.

Specifically, Rule 282(2)(b)(i), which refers to fuel burning equipment used for space heating burning sweet natural gas and the equipment has a rated capacity of not more than 50,000,000 Btu per hour.

R 336.1285 – Permit to install exemptions; miscellaneous

Specifically, Rule 285(2)(g), which refers to internal combustion engines that have less than 10,000,000 Btu per hour maximum heat input.

R 336.1281 – Permit to install exemptions; cleaning, washing and drying equipment.

Specifically, Rue 281(2)(k), which refers to aqueous based part washers.

The exclusion from exemptions and the scope of permit exemptions are listed in Rules 278 and 278a respectively. In other words, all the cited exemptions are only applicable if the facility demonstrates compliance with the provisions cited under Rules 278 and 278a. (See Appendix E)

The applicability of the cited permit exemptions and/or the exclusion from exemptions to the Brose operations is discussed later under section titled “Compliance Evaluation”.

Federal Regulations:

In addition to the State Regulations, a facility must comply with federal requirements.

The U.S. EPA promulgates New Source Performance Standards (NSPS) in an effort to regulate new sources of air pollution and ensure that those sources pollute less than the older ones they replace. The NSPS typically places limits on the emission of air pollutants such as carbon monoxide, sulfur dioxide, and particulate matter, and requires performance testing,

recordkeeping, reporting, and monitoring. NSPS are applicable to over 75 categories of industrial emission units.

The U.S. EPA also promulgates National Emission Standards for Hazardous Air Pollutants (NESHAP), which are nationally uniform standards oriented towards controlling air pollutants that appear on the U.S. EPA list of HAPs. U.S. EPA had identified over 150 categories of sources that emit HAPs and that should be regulated.

The list of regulated HAPs is published by the EPA and currently includes 187 HAPS
<https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>

A major source of HAP means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAPs

An area source of HAP emissions is a source that is not a major source.

In 2014, Brose New Boston, Inc. installed a diesel-fueled emergency generator equipped with a stationary internal combustion compression ignition engine.

An emergency generator is a generator whose sole function is to provide back-up power when electric power from the local utility is interrupted. Emissions occur only during emergency situations, and for a very short time, to perform maintenance checks and operator training. Emergency generators can emit large amounts of air pollutants when they are running. The main HAPs emitted from diesel combustion are formaldehyde, acetaldehyde, acrolein, methanol and PAH. However, HAPs emissions are negligible when they are compared with the emission of criteria pollutants. The main criteria pollutants emitted are NOx, CO, VOC and particulate matter (PM). The criteria pollutant of concern (the criteria pollutant emitted in greatest quantity) in diesel fired engines is NOx.

The federal regulations applicable to stationary engines are:

- New Source Performance Standards (NSPS) for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE), 40 CFR part 60 subpart IIII (NSPS IIII)
- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR Part 63 subpart ZZZZ (NESHAP ZZZZ or RICE MACT)

The emission standards and the applicable requirements cited on the regulations mentioned above are for different types of engines, sizes, and services at major and at areas sources of air pollutants.

NSPS Subpart IIII

Establishes minimum requirements for new or modified compressed ignition (diesel-fired) engines with requirements based on size, type, and date of manufacture. Diesel-fired emergency generators are subject to the NSPS Subpart IIII (40 CFR 60.4200) if:

- Commence construction (date the engine is ordered by the owner or operator) after July 11, 2005 and the engine is manufactured after April 1, 2006 and is not a fire pump; or

- Modify (a change to any engine that causes an increase in the ability to emit any pollutant regulated under this subpart) or reconstruct (an existing source such that the cost of the new components is greater than 50% of the cost of a comparable new unit) after July 11, 2005.

The evaluation of the NSPS Subpart IIII requirements that are applicable to the emergency generator at Brose are discussed later in this report under section titled "Compliance Evaluation".

NESHAP Subpart ZZZZ (RICE MACT)

Emergency generators have limited requirements under this subpart, depending on date of construction and size. Newer emergency generators that fit the categories cited below (40 CFR 63.6585) should meet the requirements of this part by meeting the requirements listed for the compressed ignition engines CI ICE in NSPS Subpart IIII.

No further requirements apply for such engines under this part.

- Site rating (maximum manufacturer's design capacity at engine site conditions) is less than or equal to 500 horsepower, located at a major source of HAPs (10 tons/year of single HAP or 25 tons/year of combination of HAPs), with construction or reconstruction commencing on or after June 12, 2006; or
- Located at an area source with construction or reconstruction commencing on or after June 12, 2006.

This regulation will not be discussed further because RICE engines constructed on or after June 12, 2006 are subject to the requirements of the NSPS IIII, which will be discussed later in this report. The AQD has not accepted delegation for MACT ZZZZ as it applies to area sources.

If Brose is planning to use solvents or coatings containing HAPs, AQD recommends obtaining a PTI for federally enforceable limits for HAPs before the start-up of the new coating line. The permit would restrict the facility's potential to emit HAPs to less than the major source threshold to opt out of the NESHAP Subpart MMMM and/or the ROP (Renewable Operating Permit) program. The PTI would apply to all process equipment at the source including exempt equipment.

COMPLIANCE EVALUATION

To verify the applicability of the exemptions to Rule 201 cited in the previous sections of this report, AQD used the information provided by Brose New Boston (attached in Appendix B and Appendix D) and evaluated compliance with the requirements of the cited exemption rules.

R.336.1282

Natural Gas Fired Space Heaters (Existing)

The total (existing) maximum input rate is about 13,159,800 Btu per hour, as shown below:

Twelve (12) Dock Door Infrared Tube Heaters - 1,395,000 Btu / hour

Eight (8) Office Roof Top Units – 1,404,800 Btu / hour

Eight (8) Main Shopfloor Heating Units – 10,360,000 Btu / hour

The maximum input rate (13,159,800 Btu per hour) is less than the limit of 50 Million Btu per hour required to be exempt from permitting under Rule 282(2)(b)(i).

AQD did not collect information about the potential emissions from the existing space heaters; therefore, compliance with the provisions of Rule 278 will be evaluated during a future inspection.

R 336.1285

Emergency Generator

To evaluate permit exemption under Rule 285(2)(g), we need to know the maximum heat input of the ICE serving the emergency generator.

The existing generator is a "Kohler Model 800REOZMD" Diesel Engine Generator set 810 kW @ 0.8 PF, 60 Hz, Three Phase, 277/480 Volt. According to the Engine Specifications, (see Appendix D) the engine is a 4-Cycle, Turbocharged Mitsubishi Model No. S12A2-Y2PPAW-2 with a displacement of 2.83 liters per cylinder. The engine has a maximum of 1,207 BHP at the rated 800 rpm. The maximum engine's fuel consumption at 100 % load for Standby Service is 67.4 gallons per hour (gph). The Kohler Power System is Tier 2 EPA – Certified for Stationary Emergency Applications.

Using 67.4 gph - the maximum engine's fuel consumption at 100 % load, and a high heating value for Diesel equal to 140,000 Btu per gallon of diesel; the maximum heat input rate is estimated to be:

$140,000 \text{ BTU per gallon} \times 67.4 \text{ gallon per hour} = 9,436,000 \text{ BTU per hour.}$

The result is below 10,000,000 Btu per hour - the maximum heat input for the equipment to be exempt under Rule 285(2)(g).

In addition, to qualify for the exemption, the emissions of air pollutants (tons per year) from the generator can't exceed the "significant emission levels" referenced in Rule 278, which are listed below:

Carbon monoxide - 100 tons per year

Nitrogen oxides - 40 tons per year

Sulfur dioxide - 40 tons per year

Particulate matter (TSP) - 25 tons per year

Particulate less than 10 microns (PM-10) - 15 tons per year

Volatile organic compounds - 40 tons per year

Lead - 0.6 tons per year

For emergency generators, Brose should use 500 hours of operation per year and emission data from the manufacturer of the equipment to estimate the emissions and compare the calculations with the limits cited above. None of the limits should be exceeded.

The emissions calculations for the existing emergency generator were not provided during the inspection; hence, AQD could not evaluate if the provision of Rule 278 were met. This information will be requested during a future inspection. Furthermore, per Rule 278, emissions from equipment installed concurrently are to be grouped and evaluated as a single activity for the purposes of the rule.

R 336.1281

Cleaning Operations

The information provide for the cleaning solvent indicates that Brose is using a water based solvent.

Other Pollutant: Based on the current process and equipment operations, it appears as if the facility is not a source of Hazardous Air Pollutants (HAPs).

Based on existing emission factors, the combustion of natural gas in the space heaters and the combustion of diesel in the emergency generator are not likely to generate HAPs emissions in excess of the major source thresholds.

Federal Regulations:

Appendix F includes a detailed analysis of 40 CFR part 60 Subpart IIII and the standards of performance that are applicable to the stationary CI ICE serving the emergency generator installed at Brose New Boston, Inc. They are summarized here.

To comply with the standards, Brose must meet the following requirements:

1. If the ICE is less than 30 liters per cylinder, the owner/operator must purchase certified units from the manufacturer to meet the applicable engine design emission limits (40 CFR 60.4211(c)). See also 60.4202; emissions in 89.112
2. Install, configure, operate and maintain the engine and control device in accordance with the manufacturers' instructions (40 CFR 60.4211(a)).
3. If operated differently than manufacture's recommendations, must do performance test to show compliance (40 CFR 60.4211(g))
4. Install a non-resettable hour meter (40 CFR 60.4209(a)).
5. Keep records of generator use in emergency and non-emergency service that is recorded through the non-resettable hour meter. Record the time of operation and the reason the engine was in operation during that time (40 CFR 60.4214(b)).
6. Limit maintenance checks and readiness testing to 100 hours per year (40 CFR 60.4211 (e)).
7. Operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of section 40 CFR 60.4211
8. Sulfur contain in diesel shall not exceed the ultralow sulfur diesel standards (ULSD); 15 parts per million sulfur content and minimum cetane index of 40 or max aromatic content of 35% volume (40 CFR 60.4207(b) refer to 80.510(b)).

Brose demonstrated compliance with items 1: The ICE is less than 30 liters per cylinder and although the EPA certificated o conformity for the engine was not provided by Brose, AQD searched the information in the EPA website and found the nonroad CI 2014 Certification for the Engine Family that corresponds to the Generator installed at Brose. Please see Tables in Appendix G. The information matches the Engine Code and all the Engine technical specs that had been provided independently by Brose.

With respect to the EPA certification, EPA has found that the low exhaust emission rates with Tier 2 and Tier 3 engines will be acceptable for Emergency Standby Power (ESP) installations and thus they are exempt from the need to use Tier 4 Interim and Tier 4 Final diesel engines emission standards.

The other requirements cited above were not evaluated during the inspection but they will be investigated in future inspections.

CONCLUSION AND FOLLOW UP

Based on the inspection conducted on April 17, 2017 at Brose New Boston Inc., AQD concludes that the existing operations at Brose are light assembly with a few sources of air emissions involved. Only the space heating equipment and the emergency generator could

potentially produce air pollutants in significant amounts. AQD verified that the cited equipment could be exempt from the permit to install requirements dictated by Rule 201. However, further information is needed to fully demonstrate that the provisions of Rule 278 are met. Brose demonstrated compliance with one of the cited CI ICE applicable requirements for the emergency generator regulated under 40 CFR part 60 Subpart IIII (NSPS IIII). Further information is needed from Brose, to determine compliance with this federal regulation. To complete the evaluation of the standing issues AQD will be conducting another inspection of the facility in the coming year (2018).

Permit Update:

In early May, after various discussions and consultations with AQD Permit Section and District Office staff in relation to the applicable requirements and the permitting process for the e-coat line expansion project at Brose New Boston, the company determined that the proposed e-coat line meet the Applicability Criteria for a Coating Line(s) Emitting Up to 10 tons per year of VOCs and qualified for the "General Permit". AQD Permit Section received a permit application on May 8, 2017 and a General PTI, identified as No. 74-17 was issued to Brose New Boston on May 16, 2017.

The evaluation of the company's compliance with the special conditions cited in the General PTI No. 74-17 will be addressed in a future inspection after the expansion is completed and fully operating. The applicability of Rule 201 exemptions for the equipment and/or processes to be installed as part of the expansion project will be also evaluated when the new e-coating line is fully operating.

NAME A. Andoval

DATE 10/30/17

SUPERVISOR JK