P0810
MANUAL

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

P081048085

FACILITY: Brose New Boston Inc.		**SRN / ID:** P0810
LOCATION: 23400 Bell Road, NEW BOSTON		**DISTRICT:** Detroit
CITY: NEW BOSTON		**COUNTY:** WAYNE
CONTACT: Steven Haws , Production Engineering and Maintenance		**ACTIVITY DATE:** 03/11/2019
STAFF: C. Nazaret Sandoval	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Targeted Inspection FY 2019		
RESOLVED COMPLAINTS:		

SRN: **P0810**

Source Name: Brose New Boston Inc.

Facility Address: 23400 Bell Road, MI 48164

Inspection Date: 3/11/2019

AQD Inspector: Nazaret Sandoval

Brose New Boston Contact: Steven Haws, Production Engineering Maintenance

Other Attendees (Brose): Heige Walter, Surface Technology – Brose Germany
Yolanda Watts, Paint Technologist at New Boston

B + M Surface Systems: Johann Schlitt, Project Manager Surface Systems
Germany Equipment Rep. Martin Kühnel, Project Manager Surface Systems

Email / Phone Number: Steven.Haws@brose.com 734 551 9571

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1. COMPANY BACKGROUND

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., which is the company's regional headquarters 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.

Brose New Boston Inc. (the facility) started operations around September of 2014. The current products include door modules, seat structures and drives for power lift gates. The facility had an on-site light assembly operation but after an expansion occurred in 2018 there has been an addition of a laser welding area and an electro-coating (e-coating) line for the steel seat rails. E-coating is a process where a metal part is immersed in a water-based solution containing a paint emulsion. An electric voltage is applied to the part causing the paint emulsion to condense onto the part.

The facility currently operates 3 shifts in the production lines from 6:00 AM to 2:00 PM, 2 PM to 10 PM and 10 PM to 6 AM; Monday through Friday. The number of shifts for the coating line will be tied to the production line with 3 operators and 1 paint technician in every shift. In

addition, there will be one technologist, one person for maintenance (electrical & mechanical) and one lab technician during the day-shifts. In case of increased customer demands, operation can be increased to 3 shifts, 7 days a week.

2. COMPLAINTS/COMPLIANCE HISTORY

Since the last inspection on 4/17/2017 AQD has not received citizen complaints attributed to the operations at the facility nor has it issued violations notices.

3. PROCESS DESCRIPTION AND EQUIPMENT

A flow diagram in the appendix shows the coating line components and the ancillary equipment/process.

The overall system consists of a pretreatment unit, the electro-deposition coating process (E-Coat), the E-coat dryer, and the ultrafiltration process which recovers the unused paint from the E-Coat line. The emission from the E-coat are controlled using a thermal post combustion unit (TNV in the diagram).

The pretreatment unit consist of various stages; degreasing, rinsing, iron- phosphate and final rinse. This process, which will take about 8.5 minutes total, has nine zones; two (2) degreasing zones using alkaline aqueous solution, three (3) cascade rinse stages, one (1) film-forming procedure using iron- phosphate and three (3) final rinses stages including a flushing with DI water at the exit.

The electro-deposition coating process uses an overhead monorail system to move parts through the coating process. Parts are hung on racks and sent through the parts washer and then run through the zinc phosphate rinse (which improves adhesion of the e-coat) and then rinsed. Parts are then dipped into an e-coat tank followed by a rinse tank that removes the residual emulsion from the part and recycles it back to the paint tank by ultrafiltration. The E-coated parts are cured by heat and the curing time and temperature is determined by the E-coat chemistry, epoxy, acrylic, etc. In general, the temperature in the curing oven is set around 320ºF for curing, holding times are around 15 minutes and about 30 minutes for the oven time. Afterwards, the parts are cooled down in the cooling zone, unloaded, and shipped out. The emissions from the e-coat line are controlled and exhausted through stacks on the roof. Wastewater generated in the coating processes is run through a wastewater treatment system prior to discharge to the city sewer system.

The E-Coat process is best described as a cross between plating and painting. As indicated earlier, the electric voltage applied to the part causes the paint emulsion (where the parts are immersed) to condense onto the part. The coating thickness is limited by the applied voltage. As areas of high voltage build a coating, they become insulators thus allowing lower voltage areas to build up. Finally, the interior of a part can be coated since the exterior is fully insulated by the coating.

The E-Coat process is supported by ancillary equipment/processes, as well as utilities service equipment, which include:

- A reverse osmosis (RO) system with automatic fresh water softening. The RO produces the deionized (DI) water required for the final rinse in the pre-treatment unit.
- A wastewater treatment unit that uses a batch method of treatment with a subsequent sedimentation station. A series of holding tanks store the paint-containing wastewater.

- The utility service units consisting of, a natural gas fired boiler and a diesel-powered emergency generator. The steam produced in the boiler is used for heating the process water of the pretreatment baths. The emergency generator will provide electricity to the E-Coat line and to the conveyor system during power outage.

4. INSPECTION NARRATIVE

On March 11, 2019 at about 10:30 AM I arrived at the facility to conduct an inspection. The purpose of the inspection was to evaluate the facility compliance with 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) and the terms and conditions of the General Permit identified as PTI No. 74-17; a permit for coating lines emitting up to 10 tons per year of Volatile Organic compounds (VOC).

I was received by various facility representatives of Brose New Boston who have been identified on the letterhead of this report. After the introductions I stated the purpose of the inspection and identified the topics to be evaluated during my visit. During the opening meeting I asked them to provide a summary of the coating line installation and the operations status, as well as a description of the operations. Then, I went over the regulatory framework explaining the main permit conditions and requirements.

Mr. Steven Haws is the facility liaison for AQD permit compliance, he coordinated the meeting and provided the required records. Mr. Walter led the technical discussion and the plant walkthrough. I was informed that the coating line was fully installed but the operations have not started yet due to delays with the electricity and water connections contracts. Startup was expected within a couple of weeks.

The coating operation process, which I have included in the previous section of this report, was explained in detail by Mr. Walters. He provided a copy of the E-Coat process plan view. The diagram captures the process units installed at the coating complex as well as the stacks and vents locations. A General Site Plan showing the existing and the new expanded welding area was also handed out at the meeting. Copies of both diagrams are in the appendix.

During the explanation of AQD regulatory framework I presented a copy of the permit (PTI No. 74-17). I briefly went over the sections of the permit explaining that the coating line must meet the criteria set forth in the general permit and comply with its terms and conditions. Although the facility has not started operations yet, I stressed the importance of the design/equipment parameters requirements cited on Section VI of the General Permit, which I have incorporated later in this report under the section identified as “Applicable Requirements”. I also discussed the applicable permit exemptions to Rule 201 which are listed in R 336.1280 to R336.1291 of the Michigan Air Pollution Control Rules (Michigan Rules 280 - 291).

In the inspection conducted on 4/17/2017 I evaluated the existing operations and I identified/verified the equipment and processes exempt from the requirement to obtain a Permit to Install (PTI). At that time I requested the facility to prepare a written statement demonstrating the applicability of the exemptions in accordance with Rule 278a(1). The information was handed to me at the inspection meeting in a document titled “Air Permit Exemptions”, which had been prepared by Jeniffer Bräutigam (Brose New Boston). I reviewed the document as part of this inspection. The eligibility of Permit to Install (PTI) exemptions for the equipment installed during the expansion project was also evaluated in this inspection. Both analyses are summarized later in this report.

A walkthrough of the E-Coat line concluded the first section of the inspection. Thereafter, Mr. Shaw contacted the Facility Manager, Mr. Scott Siebarth, and he accompanied us in the afternoon hours. He showed us the expanded office area of the building where a new heat system has been installed to replace the roof-top units that used natural gas. The facility has an emergency generator located outside on the north-east of the building. Mr. Siebarth brought us to the location of the emergency generator, and I checked the hourly meter. One of the maintenance personnel showed us some of their weekly records. Mr. Siebarth indicated that he receives monthly electronic notifications with the records for the generator run-time and alerts of power failures. I requested samples of those records as well as the emergency generator's preventive maintenance records for year 2018. Copies of the requested records were provided by Mr. Haws, via email on 4/1/2019 and are in the appendix.
A copy of the generator's technical specifications as well as the EPA engine certification was provided in the last inspection (see AQD File).

As we walked through the building, I observed the light assembly lines and quality control areas where there are no in-plant air emissions or venting out. We passed the maintenance welding area. Then, to the west side, I observed the existing infrared tube heaters hanging from the ceiling, which remained the same throughout the expansion. There are a total of twelve (12), all the way from north to south by the location of the dock doors. In the same "west area", there are two bigger vent units, one on the north side and the other on the south side. Those are the heating units identified as the "Cambridge Series". There are 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 fuel. There is a total of sixteen (16) stacks for the gas heating units. All the listed exhausted stacks are identified in the layout included in the appendix.

The technical information about the existing space heater units and their maximum input rate in Btu per hour has been provided by Brose New Boston in the "Air Permit Exemption" document, dated 4/26/2017, prepared by Ms. Bräutigam (copy attached)-. The document includes pictures of the two types of heaters. The list included all the heaters cited above plus the office roof top units. However, as indicated earlier, the "Carrier" units located on the roof of the building's office area (a total of eight (8) office roof top units) were removed during the expansion. According to an email from Mr. Haws, dated 04/01/2019, an electric heating system replaced the existing rooftop units that provided heat to the "old" office area. I told Mr. Haws that the cited document should be revised to update the information.

The facility has a part cleaner that uses a water-based solvent. During this inspection I did not check their cleaning operations, but I was told that they continue to use Bio-Circle L, a biodegradable non-VOC/non-HAP solvent. The Safety Data Sheet (SDS) for that solvent was provided in the last inspection and the information was included in Appendix C of the report.

In the closure meeting with Mr. Haws I summarized the pending records (i.e. SDSs for all chemicals used at the E-Coat line, emergency generator runtime records and preventive maintenance field-records, SDS for diesel-fuel). Mr. Haws provided a copy of the Inspection Agreement provided by Kholer listing the preventive maintenance required by the manufacturers. The rest of the records were promptly submitted via email within two weeks after the inspection. I left the facility at about 3 PM.

5. APPLICABLE REQUIREMENTS

5.1- State Regulations

Permit to Install (PTI No. 74-17)

This facility is regulated under a General Permit for Coating Lines emitting up to 10 tons per year of Volatile Organic compounds (VOC) identified as PTI No. 74-17.

The special conditions cited on the general permit PTI No. 74-17 are paraphrased below. Although the conditions were not evaluated during this inspection they have been included here for a future evaluation during a routine inspection once the E-Coat line starts its continuous operation.

FG-COATING

Description: One or more coating lines and all associated purge and clean-up operations, where each coating line is a single series in a coating process and is comprised of one or more coating applicators, any associated flash-off areas, drying areas, and ovens where one or more surface coatings are applied and subsequently dried or cured.

The following conditions apply to FG-COATING:

I. Emission Limits

I.1

The emissions of VOCs from each coating line and purge and clean-up operations associated with the line covered by this general permit shall not exceed 2000 pounds per month. This limit is based on a calendar month.

I.2

The emissions of VOCs from each coating line and purge and clean-up operations associated with the line covered by this general permit shall not exceed 10 TPY. This limit is based on a 12-month rolling time period as determined at the end of each calendar month.

III. Process/Operational Restrictions

III.1

The permittee shall capture all purge/clean-up solvents and waste coatings from all coating applicators used in FG-COATING. The permittee shall store these materials in closed containers and shall dispose of them in an acceptable manner in compliance with all applicable state rules and federal regulations.

IV. Design/Equipment Parameters

IV.1

The permittee shall equip and maintain FG-COATING with high volume-low pressure (HVLP) spray applicators or comparable technology with equivalent transfer efficiency (e.g., electrostatic spray, dip, flow coat, roller, dip-spin).

IV.2

The permittee shall not operate any spray application unless particulate control (dry filters or a water curtain) is installed, maintained and operated in a satisfactory manner.

IV.3. a)

Satisfactory operation of a thermal oxidizer also includes maintaining a minimum combustion chamber temperature of 1400°F and a minimum retention time of 0.5 seconds. In lieu of a minimum temperature, an average temperature of 1400°F based upon a three-hour rolling average may be used.

IV. 4 and VI.1
Satisfactory installation, calibration, maintenance and operation of the thermal oxidizer will include the presence of a temperature monitoring device in the combustion chamber of the thermal oxidizer to monitor and record the temperature on a continuous basis, during operation of the coating line. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval.

IV.5 - NA (This facility does not use Catalytic Oxidizer).

V. Testing/Sampling
1. Within 60 days of notification by the AQD, verification of VOC emissions and VOC content (in pounds per gallon) of any coating, reducer or purge/clean-up solvent, as applied or as received, using federal Reference Test Method 25A, Method 24 or other EPA approved reference method, may be required for continued operation. Verification of the emission rates includes the submittal of a complete report of the test results to the AQD with 60 days following the last date of the test. Upon prior written approval by the AQD District Supervisor, VOC content may alternatively be determined from manufacturer's formulation data. If the Method 25A or Method 24 should differ from the formulation values, the permittee shall use the Method 25A or Method 24 results to determine compliance.

VI. Monitoring/Recordkeeping
VI.2 - NA(This facility does not use Catalytic Oxidizer)

VI.3. The permittee shall keep the following information on a monthly basis for FG-COATING:
3. a) Purchase orders and invoices for all coatings, reducers, and purge/clean-up solvents.
3. b) VOC content, in pounds per gallon, of each coating, reducer and purge/clean-up solvent used.
3. c) Gallons of each coating, reducer and purge/clean-up solvent used and reclaimed.
3. d) VOC mass emission calculations determining the monthly emission rate for each coating line, in tons per calendar month, using the method specified in Appendix B.
3. e) VOC mass emission calculations determining the annual emission rate for each coating line, in tons per 12-month rolling time period as determined at the end of each calendar month, using the method specified in Appendix B.

Proper operation of the thermal oxidizer requires an overall minimum of 76% reduction of VOC emissions to the atmosphere. The permit shall keep all records in the format specified in Appendix B. The permittee shall keep all records and make them available to the Department upon request.

VI. 4
The permittee shall maintain a current listing from the manufacturer of the chemical composition of each coating, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records and make them available to the Department upon request.

VI.5
The permittee shall keep records of the date, duration and description of any malfunction of the control equipment, any maintenance performed, any replacement of catalyst and any testing results.

VI.6
If the measured operating temperature of the thermal oxidizer falls below 1400°F during

operation of FG-COATING, the permittee may demonstrate compliance based upon a three-hour average temperature, by calculating the average operating temperature for each three-hour period which includes one or more temperature readings below 1400°F. The permittee shall keep all records and make them available to the Department upon request.

VI.7. NA (This facility does not use Catalytic Oxidizer).

VIII.1. Stack/Vent Restrictions
The exhaust gases from FG-COATING shall be discharged unobstructed vertically upwards to the ambient air at exit points not less than 1.5 times the building height (from ground level to point of discharge).

IX. Other Requirements
IX.1
The permittee shall not replace or modify any portion of FG-COATING, including control equipment or coatings, nor install additional coating lines (or any portion of, including control equipment or coatings) unless all of the following conditions are met:

IX.1. a) The permittee shall update the general permit by submitting a new Process Information form (EQP5759) to the Permit Section and District Supervisor, identifying the existing and new equipment a minimum of 10 days before the replacement, modification or installation of new equipment.

IX.1. b) The permittee shall continue to meet all general permit to install applicability criteria after the replacement, modification or installation of new equipment is complete.

IX.1. c) The permittee shall keep records of the date and description of the replacement or modification, installation of new equipment, or any coating change. All records shall be kept on file for a period of at least five years and made available to the Department upon request.

FG-SOURCE
The following conditions apply to FG-SOURCE:

I. 1
For any source using the general permit, the combined actual emissions of VOCs from all coating lines andall associated purge and clean-up operations at the stationary source shall not exceed 30.0 tons per year based on a 12-month rolling time period as determined at the end of each calendar month. This includes the combined emissions from any coating line covered by this or any other general permit, any permit to install issued pursuant to Rule 201, and any coating line exempt from the requirement to obtain a permit pursuant to Rule 287 and/or Rule 290.

VI. 1
The permittee shall keep VOC mass emission calculations, on a monthly basis for FG-SOURCE determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month, for all coating lines and associated purge and clean-up operation at the source. The permittee shall keep all records in the format specified in Appendix B and make them available to the Department upon request. Record shall be maintained on file for a period of five years.

Rule 201 Exemptions

According to Brose, there are existing equipment and operations in New Boston previous to the expansion and installation of the E-Coat line, which are exempt from the AQD PTI requirements dictated by Rule 201 pursuant to the following exemption rules:

R 336.1281 – Permit to install exemptions; cleaning, washing and drying equipment. Specifically, Rule 281(2)(k), which refers to aqueous based part washers.

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; and Rule 285(2)(i), brazing, soldering, welding, or plasma coating equipment

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. 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".

5.2 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)

NSPS Subpart IIII
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.

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.

Note on HAPs:
SDSs for the chemicals used at the E-Coat line were requested during this inspection and they were sent via email on 3/15/2018. AQD did a cursory review of them and from the discussions in the opening meeting, it appears as if the chemicals used at the coating line do not contain HAPs. This will be further verified in the next inspection. I told Brose representatives that if the facility plans to use solvents or coatings containing HAPs, AQD recommends obtaining a PTI for federally enforceable limits for HAPs. 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.

6. COMPLIANCE EVALUATION

At the time of the inspection, the E-coat line was fully installed but it was not operating yet. Therefore, the special conditions cited on the general permit, PTI No. 74-17, couldn't be evaluated. In this section of the report we will only evaluate compliance with the regulations pertaining to the applicability of the exemptions to Rule 201 for the auxiliary equipment and/or process that are currently installed and operating at the facility. Some of them support the operations of the E-coat line. Section 5.2 of this report, which discussed the applicable federal regulations, is also evaluated here.

The following exemption rules and requirements were evaluated based on the information provided in the document "Air Permit Exemption", prepared by Brose in 2017 in response to AQD request during last inspection visit.

R.336.1282 - In Compliance

Natural Gas Fired Space Heaters (Existing)
Before the expansion, the total (existing) maximum input rate was about 13,159,800 Btu per hour, as shown below:

- Twelve (12) Dock Door Infrared Tube Heaters, for a total of 1,395,000 Btu / hour
  Ten (10) with heat input capacity of 125,000 Btu/hr (each)
  One (1) with 80,000 Btu /hr
  One (1) with 40,000 Btu /hr
- Eight (8) Office Roof Top Units, for a total of 1,404,800 Btu / hour
  Each unit has heat input capacities ranging from 92,000 Btu / hr to 291,000 Btu/hr
- Four (4) Main Shop floor Heating Units, for a total of 10,360,000 Btu / hour
  Two (2) with heat input capacities of 2,148,000 Btu / hr and the other two with 3,032,000 Btu/hr

However, during the expansion, all the office roof top units were replaced with electric heat; consequently, the number of natural gas-fired space heaters has been reduced to sixteen (16) for a total of 11,755,000 Btu / hour.

In addition, according to the Rule 278 demonstration document, Brose estimated the

installation of six (6) additional gas-fired space heaters after the expansion, but they were not installed. In a future inspection we will revisit the listed equipment and we will request Brose to a revise/update the Rule 278 demonstration document.

As noted above, the maximum input rate for the individual heating unit is always less than the limit of 50 Million Btu per hour required to be exempt from permitting under Rule 282(2)(b)(i).

Brose estimated the potential emissions (PTE) of regulated pollutants from all existing space heaters. They evaluated compliance with the provisions of Rule 278. The results seem accurate and below the thresholds.

R 336.1285 - In Compliance
Emergency Generator
To evaluate permit exemption under Rule 285(2)(g), we need to know the maximum heal input of the ICE serving the emergency generator.
The existing generator is a "Kholer Model 800REOZMD" Diesel Engine Generator set 810 kW @ 0. 8 PF, 60 Hz, Three Phase, 277/480 Volt. According to the Engine Specifications, (see attached) 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 BTU per gallon X 67.4 gallon per hour = 9,436,000 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 the emergency generator, Brose used 500 hours of operation per year and AP42 emission factors to estimate the emissions. They compared the calculations with the limits cited above. None of the limits were exceeded. Refer to attachment for emergency generator emission summary.

R 336.1281- In Compliance
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.

Other Exemptions
There are auxiliary equipment/processes, such as the wastewater treatment plant, chemical storage tanks and containers that were installed to support the E-Coat line operations. Brose has to revise the demonstration document to include the exemption analysis for those equipment/ processes.

Federal Regulations: In Compliance
In the previous inspection report (04/17/2017) I conducted 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., Those 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 to 8.
Item 1: The ICE is less than 30 liters per cylinder. The EPA certificate of conformity for the engine that runs the emergency generator installed at Brose is on AQD files (see appendix in previous inspection report). The certificate was found in the EPA website. The nonroad CI 2014 certification for the engine family that corresponds to the engine installed at Brose 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.

Item 2 to 7: The facility operates and maintains the engine and control device in accordance with the manufacturers' instructions. The facility performs weekly test and maintains records of the activities that are conducted during routine checks. The generator is run 30 minutes per week automatically every Tuesday. The facility provided copies of the weekly test checklist for period 8/8/2017 to 3/26/2019, copies are in the appendix. The records show preventive maintenance routine activities such as fluid levels check and visual inspection which are completed before auto run cycle.

Monthly generator activity reports from 1/2/2018 to 2/26/2019 were collected in this inspection (received via email on 3/27/2019) and are attached to this report. Monthly records show the generator's weekly runtime (start and end dates), the meter readings and the total runtime per month. The meter recorded 201.5 hours on 2/26/2019 and 118.6 hours on 01/2/2018 which indicates the generator runtime was 82.9 hours in that period. When the monthly runtime records are added up the total comes up to 79.21 hours. There are a few records showing generator faulty readings that were cleared. Those fault readings could explain the 3.69 hours of difference between the 82.9 and 79.21 hours. The records showed two instances when the generator operated due to power failures; one was recorded from 4/15/2018 to 4/18/2018 with a duration of approximately 50 hours (the field notes indicated the power outage was due to ice-storm). The other emergency power event was registered on 10/4/2018, lasted a little over one hour and seemed to have been due to DTE power shut down.

Item 8 – The engine uses Sunoco diesel fuel. The SDS for the fuel was provided. The listed properties show compliance with the cited conditions for a ULSD.

7. CONCLUSION AND FOLLOW UP

During the inspection conducted on March 11, 2019 at Brose New Boston Inc. AQD learned that the facility has not started the operations of their fully installed E-Coat line. The facility is still running light assembly operations with a few sources of air emissions involved. At the time of the inspection, only the space heating equipment and the emergency generator produce air pollutants. AQD verified that the cited equipment are exempt from the permit to install requirements dictated by Rule 201 and the facility demonstrated that the provisions of Rule 278 are met. A written document that covered the requirements listed under Rule 278a (1) was submitted by Brose. AQD reviewed the document and considered it to be in substantial compliance (a few comments will be addressed by Brose in future inspections). Brose demonstrated compliance with all the CI ICE applicable requirements for the emergency generator regulated under 40 CFR part 60 Subpart IIII (NSPS IIII).

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 coating line is fully operating. The applicability of Rule 201 exemptions for the equipment and/or processes installed as part of the expansion project were also evaluated.

NAME Hamdoval DATE 6/14/2019 SUPERVISOR JK