N7569
MANUA

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

N756953187

FACILITY: ISUZU TECHNICAL CENTER OF AMERICA, INC		**SRN / ID:** N7569
LOCATION: 46401 COMMERCE CENTER DR, PLYMOUTH		**DISTRICT:** Detroit
CITY: PLYMOUTH		**COUNTY:** WAYNE
CONTACT: Brandon Glass , Manager - Test Facilities		**ACTIVITY DATE:** 01/16/2020
STAFF: C. Nazaret Sandoval	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: FY 2020 Targeted Inspection		
RESOLVED COMPLAINTS:		

Source: SRN N7569 – Isuzu Technical Center of America, Inc.

Location: 46401 Commerce Center Drive, Plymouth, MI 48170

Date of Inspection: January 16, 2020

Reason for Inspection: Targeted Inspection

Main Contact: Brandon Glass, Senior Manager, Lab Operations

Facility Phone Number: (734) 582-9418

1. FACILITY BACKGROUND

Isuzu Technical Center of America, Inc. was originally established in California in 1985 to conduct local vehicle engineering, emission testing, planning, design and local sourcing. In 1991, a technical center was built in Plymouth, Michigan to consolidate and expand Isuzu research and development activities in the Americas. In 1994, the company became Isuzu Motors America, Inc. after the merge with Isuzu Motors. That year, the capability of the Plymouth Technical Center was expanded to encompass development and performance testing in addition to ongoing durability and quality validation. Thereafter, the company changed its name again, this time from Isuzu Manufacturing Services of America, Inc. to Isuzu Technical Center of America, Inc. (hereafter Isuzu). Isuzu, at the Plymouth location, serves as the headquarters of Isuzu's Research & Development arm in North America providing expertise in planning, engineering, testing, validation, and compliance of commercial vehicles and diesel engines. Over the years the engine testing facilities at Plymouth have been modified and expanded, with variations in the type of fuel used, fuel throughput, as well as the number and type of testing operations conducted at the center.

2. PERMIT HISTORY

Permit records show that the first two internal combustion engine test cells and the associated dynamometers installed in Plymouth were permitted by the Air Quality Division (AQD) in June of 1995 and in December of 1996 by the Wayne County Department of Environment, Air Quality Management Office (herein Wayne County).
The permits records reflect the facility's name changes cited above for the same SRN. On February 23, 2006 both the Wayne County permit and the AQD permit were voided because it was determined that the facility qualified for a PTI exemption. It appears as if between 2006 and 2008 Isuzu was considered a true minor source operating two test cells under exemption Rule 285(g).

After 2008 the records show that an inspection conducted on February 4, 2011 identified two new dynos installed in cells 5 and 6. Consequently, the potential NOx emissions estimated for

the overall facility, with four units in operation, could be above the Title V major source threshold limit of 100 tons per year. Therefore, to resolve this situation, Isuzu submitted a permit application to obtain an opt-out permit to install (PTI). Permit No. 4-12 was issued on 4/3/2012 to cover the two dynamometers that had been installed in cells 5 and 6, the two old dynamometers in cells 1 and 2, and two proposed dynos to be installed in cells 3 and 4. Each cell would be equipped with one dynamometer for diesel engine testing. PTI 4-12 regulated the operations of six emission units EU-TEST CELL1 to 6. The permit also contained two chassis dynamometers EU-CHASSISCELL1 and EU-CHASSISCELL2.

PTI 4-12 was voided on June 14, 2016 and it was replaced with PTI 4-12A, which was issued to increase the annual fuel restriction and to allow the installation of the two dynamometers that had been permitted in 2012 but never installed in cells 3 and 4.
New daily fuel restrictions were also added to the permit for toxic air contaminants (TAC) screening purposes. The permitting action increased the potential NOx emissions and in minor degree the emissions of all the other pollutants. The fuel restrictions continue to prevent the facility-wide emissions from exceeding the significant emission rate for all pollutants.
The emission units, EU-CHASSISCELL1 and EU-CHASSISCELL2 were removed from the permit when PTI 4-12A was issued. This decision was based on EPA's determination that the chassis are considered mobile sources.

As of the date of this inspection report the active permit is the opt-out permit PTI 4-12A issued on June 14, 2016.

3. COMPLAINTS, VIOLATION NOTICE, AND CONSENT ORDERS

Records show that the facility has maintained compliance with the air quality permit requirements and applicable regulations. Since the last inspection, on 8/30/2016, there have been no complaints associated with the operations at the facility, no pending administrative consent orders, and no violation notices have been issued.

4. EQUIPMENT/PROCESS DESCRIPTION:

The general site plan of the facility includes the following main areas:

1) Office Space and Meeting Rooms
2) Test Lab Area.
3) Outside Test Track and Parking Area.

The test lab floorplan shows three laboratories: the engine dyno lab, the chassis dyno lab, and the vehicle lab. The AQD permit regulates the emission units located in the dyno-lab building which are at the northwest corner of the building

Isuzu is permitted to test diesel fired engines in six dynamometer test cells. Cells 1 and 2 are on the south end of the engine dyno lab. Cells 3 to 6 are on the north side.

The internal combustion diesel engines vary in sizes and can be tested on dynamometers with a range of rated powers, up to a maximum absorbance power of 450 kW. An engine dynamometer is a device designed to create a load to duplicate various speed (RPM) and torque (Nm or lb-ft) requirements. From this data, power (HP or kW) can be calculated. This in turn provides a snapshot of the engine performance for comparison to the manufacturer's specifications. Typically, a dynamometer gives the operator the ability to vary the load applied to the unit under test to mimic specific requirements.

The dynos are supported by accessories and ancillary equipment such as: fuel measurement

system, sampling probes, room exhaust system, cooling tower, remote instrumentation and control, to name a few.

There are three diesel underground storage tanks (USTs) located outside, northwest of the test cell building; two diesel USTs with capacities of 2,385 gallons and one tank with 2,500-gallons. The pumping system feeds fuel into each cell based on demand. A copy of the USTs inspection report bearing the Michigan Licensing and Regulatory Affairs (LARA) logo on it, was handed out to me at the meeting. The last UST inspection was conducted on 11/01/2016 by a Region 1 Hazardous Material Storage Inspector.

Diesel engines and trucks are tested at the facility to meet EPA emissions standards. The emission testing procedures are those cited in the Code of Federal Regulations 40 CFR – Part 86. Essentially, the first step of their testing procedures is the calibration development to meet vehicle performance criteria for various model years.
A simplified version follows: Exhaust air is diluted (8:1) to cool it down before entering the sampling unit, sampled, analyzed and vented to the atmosphere through a stack. Parameters that are tracked during testing are: temperature, humidity and pressure. In general, one sampling run takes approximately 40 minutes to 4 hours to complete. Pollutants measured are CO, CO2, NOx, hydrocarbons (HC) and PM.

The engines tested at the facility are not dedicated to a specific test cell and are changed out in a regular basis. The emissions are controlled and typically the emission control devices stay with the engine. The main component of emissions reduction on the outlet of diesel engines is known as "after treatment". After treatment or emission control includes: high pressure common rail injection, exhaust gas recirculation (EGR), systems diesel oxidation catalyst (DOC), diesel particulate filter (DPF), selective catalytic reduction (SCR), and particle oxidation catalyst (POC) which are used together with a computer controlled engine management systems.

Each cell has its own control consoles located outside of the testing cell. All the automation/data acquisition and control system consoles are located along the hallway that leads to the entrance of each cell.

The operations that are subject to AQD air regulations are those occurring at the test cells laboratory. The outside test area (Test Track) is for testing of mobile sources; but mobile source testing is rarely conducted.

In addition to the test cells, the facility has the following exempt equipment: a) two part washers maintained by "Safety-Kleen" (one located at the garage and the other one at the engine built area), b) a series of space heaters located in different areas of the building, and c) two emergency generators.

The rule exemptions and more specific information about rated capacities and sizes for the exempt equipment are evaluated later in this report.

Additional operations in the building do not appear to generate air pollutant that vent to the outside air, and therefore are not regulated by AQD.

Isuzu currently operates Monday through Friday in two eight-hour shifts. The day shift runs from 7:00 A.M. to 3:00 PM and the late shift from 3:00 PM to 11:00 PM. Most tests run during the day shift, but there are others conducted during the night shift.

5. INSPECTION NARRATIVE

The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451 and the Department of Environment, Great Lakes and Energy (EGLE) Air Quality Division (AQD) rules.

On January 16, 2020 I arrived at the facility at 9:00 AM and met with Mr. Brandon Glass, Isuzu's Lab Operation Senior Manager. During the opening meeting I indicated the purpose of my visit and discussed the main sections of permit PTI 4-12A.
I also asked for the update in operations of the two dynamometers that were permitted in 2016 and installed in cells 3 and 4 on June 10, 2016. Mr. Glass said that the dynos started operations soon after the electrical and communication connections with the facility were completed, presumably sometime around the last quarter of year 2016.

During the permit modification of June 2016, Isuzu had agreed to modify the horizontal stack in cell #1 and replace with a straight portion of pipe to provide a vertical discharge to the ambient air. In the follow-up visit on 9/21/2016 I corroborated that the work on the stack had been completed and finalized on 8/31/2016.

After the initial meeting we conducted a walkthrough of the facility. We stopped at the garage area and at the engine-built area to look at the parts cleaners. Mr. Glass indicated that around February of 2017 Isuzu replaced the Safety-Kleen Model 34.1 solvent parts washer that used to be located at the engine-built area with the same model they have in the garage area. Now, the part cleaners are identical, they are Safety-Kleen Model 90.1 and both use an aqueous washing fluid. The operation instructions are posted on a visible area.

The dimensions of the Safety-Kleen part washers are as follow:

Model 90.1 Aqueous Part Washers of 22 inches X 34 inches (area 5.19 sq. ft.)

I asked for the Safety Data Sheet (SDS) of the product used in the part cleaners. The SDS was received via email on 1/16/2020. According to the information on the SDS, the product is labeled as "ArmaKleen 4 in 1 Cleaner - Cleaning Solution" and it is described as an aqueous, alkaline cleaner that has been diluted with water for cleaning various ferrous and noon-ferrous alloys, as well as plastic, glass and composite materials. The product does not contain photochemically reactive solvents and the facility used the product "as is" (i.e. it is not combined with any other product). The VOC content in the solution could be between 0.51 % wt. to 2.04 % wt., that's less than 5% wt.; thus the cleaning solution meets the definition of an aqueous part washer under AQD rules.

We continued our walk to the test laboratory starting with the test cells at the north side. The cells are numbered sequentially from 3 to 6, from east to west. Then, on the south end of the lab building, cell 2 is located to the west side adjacent to cell 1.
I verified the size of the dynos during the walkthrough. I checked the power rating specified on the dynamometer's nameplates to compare the dynamometer maximum rated power (i.e. absorbing power) with the values cited on the current permit. The information is listed on the summary table that describes the emission units. In this inspection I found no changes with respect to the information collected during the inspection of 8/30/2016.

I inspected the dynos, the supporting equipment, and the stacks at each test cell. Each cell (1 to 6) has individual exhaust stacks (SV-E1 to SV-E6). However, cells 1 & 2, and cells 5 & 6, share an additional stack. The reasoning for the stack-sharing is to save costs. The cited cells share an expensive equipment, the dilution tunnel, which is used to conduct a special

particulate matter test. There is one dilution tunnel in cell 2 and another one in cell 6. At each cell the horizontal exit pipe from the dilution tunnel bends 90 degree to discharge vertically upwards to the ambient air through the shared stacks SV-E1-2 (in cell 2) and SV-E5-2 (in cell 6). For details of the stacks installation please refer to the attached pictures for cells 5 and 6 provided by Isuzu via email on 2/13/2020. Cells 1 and 2 have a similar pipe arrangement.

The emission summary table depicted on PTI 4-12A lists the shared stacks in the wrong cell location. This should be addressed in the future by a permit modification. In this report, I am listing the shared stacks at the current location as seen at the facility.

Except for the installation date (which was copied from PTI 4-12A), the following table provides a description of the emission units in accordance with the data collected during the inspection of 1/16/2020:

Emission Unit ID (Installation Date)	Emission Unit Description	Comments and Updates
EU-TESTCELL1 (September 2005)	Dynamometer test cell for testing diesel fuel engines. Power: 104 / 370 kW Stack ID: SV-E1	Meiden EC dyno; 700 to 8000 RPM
EU-TESTCELL2 (September 2005)	Dynamometer test cell for testing diesel fuel engines. Power: 318 kW Stack ID: SV-E2 and SV-E1-2	Schenck dyno; 1700 to 4000 RPM Dilution Tunnel located in this cell. Emission & sampling for PM test shared with cell 1
EU-TESTCELL3 (June 10, 2016)	Dynamometer test cell for testing diesel fuel engines. Absorbing Power 300 / 188 kW Stack ID: SV-E3	Meiden Dyno Motoring Power 240 / 150 kW Started operation end of year 2016
EU-TESTCELL4 (June 10, 2016)	Dynamometer test cell for testing diesel fuel engines. Absorbing Power 450 / 270 kW Stack ID: SV-E4	Meiden Dyno Motoring Power 440 /240 kW Started operation end of year 2016
EU-TESTCELL5 (July 2008)	Dynamometer test cell for testing diesel fuel engines. Power: 330 kW Stack ID: SV-E5	AVL Schneider Dyno - 0 to 4000 RPM Emission & sampling shared with cell 6
EU-TESTCELL6 (July 2008)	Dynamometer test cell for testing diesel fuel engines. Power: 440/315 kW Stack ID: SV-E6 and SV-E5-2	AVL Schneider Dyno - 0 to 6000 RPM Dilution Tunnel located in this cell Emission & sampling for PM test shared with cell 5

Isuzu has two emergency generators operating with diesel fuel engines. The Baldor IDLC100 3JD generator with an output rated capacity of 100 kW is powered by a John Deere engine rated at 139 hp @ 2400 rpm. It is located at the rear end of the building and serves the test-cell laboratories operations. The generator that supports the IT server room is identified as a Norpro 18 PMI and has an output rated capacity of 18 kW. The Norpro generator is powered by an Isuzu engine rated at 34.5 hp @ 1800 rpm. Both generators are equipped with non-resettable hourly meters. I checked the meters during the inspection and recorded the totals hours of operation. The hour meter for the Baldor generator showed 292.5 hours and the Norpro generator's digital controller displayed a total of 244.9 hours. Isuzu indicated that they did not have emergencies events during last year. Isuzu did not log emergency events (if any) for prior years.

On 3/2/2020 I asked Isuzu to provide additional information about the generators to determine the applicability of the federal regulations to the emergency generators and the associated engines. I received a response via email on 3/10/2020. Isuzu indicated that the Baldor generator was installed in 2008 and the hour meter has not been replaced or re-set since the initial installation. The hour meter as of 1/16/2020 was 292.5 hours, thus dividing the total hours by 11 years of operation averages to 26.5 hours per year. Isuzu confirmed the Baldor generator runs for 20 minutes each week, which equals 17.3 hours per year for testing.

The Norpro generator was installed in 2004 and the hour meter has not been replaced or re-set since the initial installation. The hour meter as of 1/16/2020 was 244.9 hours, therefore dividing the total hours by 15 years of operation averages to 16 hours per year. The generator runs for 10 minutes each week, which equals 8.7 hours per year for testing. They also run the generator for approximately 30 minutes per week during the coldest part of the winter, when the temperature is below freezing, to ensure the transfer switch is functioning correctly.

Isuzu does not have exact records of the number of hours ran per year, the controllers do not provide that information. However, going forward they will track the total hours on an annual basis. This can be done by reading the hour meter in an annual basis and subtracting the values from year to year. In addition, they need to keep separate hourly records for emergency events and testing procedures.

Isuzu has space heaters burning natural gas. They are in various areas of the building. Updated records of heaters capacities were requested as part of this inspection. The updated space heaters list showed additional units being installed when the list was compared to the one provided in the inspection in 2016; however, two of the heaters in the list of 2016 are not currently being used. All space heaters installed and operating have capacities below 50 MMBtu per hour.

During the closure meeting I summarized the point of our discussions and requested the following information:
1) Site plan for the facility and a building layout showing the location of the test cells.
2) Monthly and the 12-month rolling diesel usage and emissions records from January 2019 through December 2019
3) Copies of the most recent fuel delivery and sampling.
4) Maintenance and operational records for the emergency generators.
5) Space heaters capacities.

At the end of the inspection I had a closure meeting where I explained that I would examine the records to prepare an inspection report with the results of the compliance evaluation. I added that additional questions or concern might come out during the preparation of the report and I might need to contact Isuzu for answers and/or clarifications to better evaluate compliance with the special conditions cited on the permit. I left the facility at about 1:00 PM.

The requested information (listed above) was provided by Isuzu via email, most of it was received on the same day of the inspection, on 1/16/2020, and the remaining documents were received on 1/23/2020. During the review of the records I found an error that looked like a "data enter typo" for the fuel usage values reported for August 16, 2019. I left a message to Mr. Glass on 2/21/2020 and discussed the error with him on 2/25/2020. He confirmed it was a typo and immediately provided a revised record file (i.e. the excel sheet calculation) via email on 2/25/2020.

In addition, it is important to mention the information provided by Gerry Plocharczyk (previous

contact for Isuzu) in an email dated 9/22/2016 with respect to the dyno installed in cell #6. The motor of the dyno in cell #6 could absorb 440 kW but it is limited by software parameterization to 370 kW and that value is not listed on the motor capacity tag. For details about this issue, please refer to the information provided by the dyno supplier (AVL), which is archived in AQD's Isuzu files.

6. REGULATORY APPLICABILITY

The facility is subject to the following rules and regulations:

The facility accepted fuel restriction to opt-out from Title V for CO and NOx emissions, which would be the main pollutants from diesel combustion. The facility operates under the opt-out Permit PTI 4-12A issued on June 14, 2016.

Rule 224 deals with the best available control technology for toxics (T-BACT). During the permit modification of 2016 it was determined that the total annual non-VOC TAC emissions are less than 1 tpy and it would not be economically feasible to add additional controls at this level of emissions.

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During permit evaluation of Rule 225 which deals with health-based screening levels for TACs, Isuzu agreed to modify the horizontal stack in cell No. 1 and make it vertical to improve dispersion.

Rule 301 covers visual emissions with opacity limits. The permit specifies a general 20 percent opacity limit in GC 11.

Rule 702 covers BACT for VOC emissions. The total annual VOC emissions are less than 3 tpy. During permit review it was determined that it would not be economically feasible to add additional controls at this level of emissions.

Rule 201 exemptions
Some equipment and/or processes are exempt from the requirements of Rule 201 to obtain a permit to install. They operate under specific exemptions which will be evaluated later in this report as part of the "Compliance Evaluation" section.

7. COMPLIANCE EVALUATION

For the purposes of determining compliance, this evaluation will refer to the permit limits and condition stated in permit PTI 4-12A issued on June 14, 2016, the requirements associated with Rule 201 exempt equipment, and the applicable federal regulations.

PTI 4-12A

For simplicity, the permit conditions cited on PTI 4 -12A are paraphrased below. There are no special conditions listed in Sections II, IV, V and IX of the permit (listed as NA in the permit).
Fuel usage and emission records for January 2019 through December 2019 were reviewed and evaluated. When determining compliance with 12-month rolling time period limits, the most recent month with the highest fuel usage/emissions is cited for compliance determination. A summary of fuel usage and pollutant emissions is attached.

FG-TESTCELLS
Description: 6 engine dynamometer test cells.

Emission Units: EU-TESTCELL1 to EU-TESTCELL6

Pollution Control Equipment: NA

SC I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Testing / Monitoring Method	Compliance Determination
SC I.1 NO_x	16.0 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2	**In Compliance** -The maximum value for the evaluated period was **8.05** tpy reported at the end of February 2019.
SC I.2 - CO	4.5 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2	**In Compliance** -The maximum value for the evaluated period was **2.3** tpy reported at the end of February 2019.
SC I.3 - VOC	2.8 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2	**In Compliance** -The maximum value for the evaluated period was **1.4** tpy reported at the end of February 2019.
SC I.4 - 1,3 Butadiene	0.0625 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2	**In Compliance** -The maximum value for the evaluated period was **0.0315** tpy reported at the end of February 2019.
SC I.5 - 1,3 Butadiene	1.00 lb/day	Calendar Day	SC VI.3	**In Compliance** - The maximum value for the period evaluated was **0.55** lb / day reported on February 9, 2019
SC I.6 - Formaldehyde	0.165 tpy	12-month rolling time period as determined at the end of each calendar month.	SC VI.2	**In Compliance** – The maximum value for the evaluated period was **0.083** tpy reported at the end of February 2019.

SC II. MATERIAL LIMITS

1. The permittee shall only burn diesel fuel in FG-TESTCELLS.
In Compliance: Records show that Isuzu only burns diesel fuel at their testing facilities. According to the records provided the facility is currently combusting ultra-low sulfur diesel. The most recent fuel delivery was on 12/23/2019 and the sulfur Certificate of Analysis shows a sulfur concentration of 7.1 ppm.

2. The fuel usage for FG-TESTCELLS shall not exceed 400 gallons per calendar day.
In Compliance: The maximum daily fuel usage for the evaluated period was 220 gallons per calendar day reported on February 9, 2019.

3. The fuel usage for FG-TESTCELLS shall not exceed 50,000 gallons per 12-month rolling time period as determined at the end of each calendar month.
In Compliance: The maximum 12-month rolling fuel usage for the evaluated period was 25,169 gallons reported at the end of February 2019.

SC VI. MONITORING/RECORDKEEPING

In Compliance - As required, the facility maintains records for a period of five years and complies with all the monitoring and recording conditions specified under SC VI. The following table summarizes the record keeping requirements cited in the permit, the evaluation of the

records, and the compliance determination for each special condition:

SC VI.1	The permittee shall complete all required calculations in a format acceptable to the AQD by the 15th day of the calendar month, for the previous calendar month.	**In Compliance** – Isuzu uses an adequate calculation system and an acceptable format for recordkeeping.
SC VI.2	Keep the following information in a monthly basis for FG-TESTCELLS: a) A record of the days of operation. b) Gallons of diesel fuel used per month and 12-month rolling time period. c) Diesel fuel usage calculations determining the annual usage rate in gallons per 12-month rolling time period as determined at the end of each calendar month. d) NOx, CO, VOC, 1,3-Butadiene and formaldehyde emission calculations determining the monthly emission rate in tons per calendar month. e) NOx, CO, VOC, 1,3-Butadiene and formaldehyde emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.	**In Compliance -** Isuzu maintains records of the days of operation, monthly diesel throughput, and the 12-month rolling records. The records were available for review and the requested records were provided. Isuzu keeps in a satisfactory manner, monthly and 12-month rolling emission calculations for NOx, CO, VOC, 1,3-Butadiene and Formaldehyde for FG-TESTCELLS. AQD reviewed the records and evaluated compliance with permit limits. Please refer to the summary table in SC.1.
SC VI.3	Keep the following information in a daily basis for FG-TESTCELLS: a) Diesel fuel usage on a daily basis. b) 1, 3-Butadiene emission calculations determining the daily emission rate in pounds per calendar day.	**In Compliance** Isuzu maintains daily records in lbs. /day for diesel usage and 1,3-Butadiene emissions.

SC VII.1 REPORTING - In Compliance
Isuzu notified AQD of the changes authorized by PTI 4-12A, which included the modification of the exhaust stack SV-E1-2 to discharge vertically, from the previous horizontal orientation and the installation of the dynamometers in Cells 3 and 4. The installation of the dynamometers for engine test cells 3 and 4 started right after the permit was issued in June

2016. Electrical and communication connections with the facility and test automation system took place subsequent to the install. Isuzu completed the modification of the stack SV-E1-2 on August 31, 2016.

SC VIII STACK RESTRICTIONS - In Compliance

The exhaust gases from the stacks SV-E1 to SV-E6 installed at each testing cell and the shared stacks in cells 2 and 6 (i.e. SV-E1-2, SV-E5-2); discharge unobstructed vertically upwards to the ambient air. Please refer to the pictures provided by Mr. Glass for details. I did not verify the dimensions of the stacks from the roof, but I observed them from the parking lot. They seemed to be the same size permitted by PTI 4-12A. Isuzu indicated that except for SV-E1-2, which was modified to discharge vertically, all the other stacks have not been modified since its initial installation.

8 - EXEMPT EQUIPMENT

The following equipment and/or processes are exempt from the requirements of Rule 201 to obtain a permit to install pursuant to the rule exemptions identified herein:

Safety-Kleen parts washers

The facility has two parts washers that had been exempted from permitting via Rule 281 (2)(h) which exempts cold cleaners that have an air/vapor interface of not more than 10 square feet. However, the facility has discontinued the usage of VOC containing solvent and currently uses a water-based solution in both parts washers. One of the parts-washer switched to a water-based solvent more than 10 years ago; whereas per information collected during the inspection of 1/16/2019, the second parts-washer started using aqueous-based solvent around February of 2017. As a result of the cited changes, the exemption that applies to the part washers is Rule 281(2)(k) because by definition the parts washers are no longer cold-cleaners but aqueous based parts washers(i.e. the VOC content in the cleaning solution is less than 5 % wt.).

Space heaters

The space heaters burning natural gas are exempt from permitting via Rule 282 (2)(b)(i). This exemption applies to equipment with rated heat input capacity of not more than 50 MMBtu per hour.

The records provided on 01/23/2020 listed a total of 26 space heaters for a total input capacity of 9.146 MMBtu per hour. None of the space heater exceed 50 MMBtu per hour, with the highest capacity unit, a McQuay heater, listed at 1 MMBtu per hour.These records were compared with previous records collected during the inspection of year 2016. In 2016, Isuzu reported a total of 20 space heaters for a total heat input capacity of 5.839 MMBtu per hour; a McQuay unit has the highest input capacity reported as 790,000 Btu/hr.

Although a few additional space units have been installed at the facility since 2016, the increase in the actual emissions does not trigger the significant level defined in Rule 219. Refer to the attached summary table for a detailed list of the current space heaters and the associated emissions.

Emergency Generators

There are two emergency generators that are powered by "Reciprocating Internal Combustion Engines" using diesel fuel. The engines are exempt from permitting pursuant to Rule 285(2)(g). This rule exempt combustion engines with less than 10 MMBtu/hour maximum heat input. The maximum heat input for the engines was calculated using the maximum diesel consumption in gal / hour (provided by Isuzu) and assuming a heating value of 139,000 Btu per gal for diesel combustion. The calculated heat input capacity resulted in values below the

10 MMBtu per hour for both engines. For details about the generators (i.e. maker, model and kW output) refer to the attached summary prepared by the AQD inspector with information provided by Isuzu and using manufacturer's website information.

9 - APPLICABLE FEDERAL REGULATIONS – In Compliance

NSPS Subpart IIII

This subpart 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 are 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 key pollutants EPA regulates from these sources includes nitrogen oxide (NOx), particulate matter (PM), sulfur dioxide (SO2), carbon monoxide (CO), and hydrocarbons (HC); NOx being the main pollutant when diesel is used as combustible.

According to the information provided by Isuzu, the Norpro generator which uses a diesel compression ignition engine, was installed in 2004 and has not been modified. Therefore, this equipment is not subject to NSPS Subpart IIII because the engine was ordered and manufactured before the applicability dates cited above.

The other generator (Baldor) was installed in 2008 and it is subject to NSPS Subpar IIII. To comply with the standards, Isuzu must meet the following requirements for the Baldor emergency generator:

• If the generator 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)).

• Operate the generator and control device in accordance with the manufacturers' instructions (40 CFR 60.4211(a)).

• Install a non-resettable hour meter (40 CFR 60.4209(a)).

• 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)).

• Limit maintenance checks and readiness testing to 100 hours per year [40 CFR 60.4211(f)(2)].

• Sulfur Dioxide (SO2) emissions from the generator shall not exceed 15 parts per million sulfur content (40 CFR 60.4207).

Evaluation: The generator is less than 30 liters per cylinder and has a certified John Deere engine. Isuzu operates the engine in accordance with the manufacturers' instructions. A non-resettable hour meter records the generator usage in emergency and non-emergency service. The facility keeps operational records through the hour-meters but doesn't keep separate

annual records. The recorded time represents the hours of operation for readiness testing and maintenance checks. According to the information provided by Isuzu, in 11 years of operation the average is about 26.5 hours per year. Isuzu confirmed the Baldor generator runs for 20 minutes each week, which equals 17.3 hours per year for testing. It appears as if in 2019 the generator operated for less than 100 hours and there were no emergency situations reported during that calendar year. The recorded time represents the hours of operation for readiness testing and maintenance checks. The diesel used at the facility has a sulfur content under 15 PPM. For details refer to the attached records.

NESHAP Subpart ZZZZ (i.e. RICE MACT)
Both generators are subject to the requirements of Part 63, NESHAP for Source Categories, Subpart ZZZZ -Stationary Reciprocating Internal Combustion Engine (RICE - MACT), which are regulated under 63.6640(f). This regulation applies to new or existing emergency generators located at an area source with construction or reconstruction commencing before or after June 12, 2006.
Some of the applicable requirements of this subpart are similar to those evaluated in the previous section for the Baldor generator as part of the NSPS Subpart IIII.

1) Compliance with the RICE MACT requires Isuzu to operate both engines in accordance with the requirements cited in paragraphs (f)(1) through (4) of section 63.6640 of Subpart ZZZZ, as follows:

The permittee may operate the emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of section 63.6640 for a maximum of 100 hours per calendar year. Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response. Any operation for non-emergency situations as allowed by this regulation counts as part of the 100 hours per calendar year.

Evaluation: According to the information provided by Isuzu, the recorded time represents the hours of operation for readiness testing and maintenance checks. In average, the Baldor generator operates for 26.5 hrs./year and runs for 20 minutes each week, which equals 17.3 hours per year for testing. The Nopro generator operates an average of 16 hours per year and runs for 10 minutes each week, which equals 8.7 hours per year for testing. They also run this generator for approximately 30 minutes per week during the coldest part of the winter. There were no emergency situations reported during the 2019 calendar year.

2) As stated in 63.6603 and 63.6640, Isuzu must comply with the following maintenance requirements for existing stationary RICE located at area sources of HAP emissions (Table 2d in the regulation).

a. Change oil and filter every 500 hours of operation or annually, whichever comes first.

b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and

c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Evaluation: According to the preventive maintenance records provided for the Baldor

generator and the maintenance schedule summary table for the Norpro generator, Isuzu seems to be in compliance with the maintenance requirements cited above. The annual maintenance service for the Norpro generator was on 6/3/2019 and on 1/21/2020 for the Baldor.

Note: Sources have the option to utilize an oil analysis program as described in order to extend the specified oil change requirement in Table 2d. Isuzu complies with the oil-change requirements

3) Continuous compliance with emission limitations and other requirements in accordance with 63.6640 (Work or Management practices and Table 6).

i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or

ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

Evaluation: Isuzu operates and maintain the stationary engines according to the manufacturer's emission-related operation and maintenance instructions. They keep maintenance records and maintains routine service according to the frequency dictated by manufacturers. For details refer to the attached records.

10 - MAERS REPORTS

The AQD internal policy and procedure number AQD – 013 establishes the criteria pollutant thresholds levels for the emission inventory. According to the policy, all sources that have active Opt-out Permit are required to report their emissions to MAERS. Isuzu was notified about this requirement shortly after the PTI modification approved in June 2016.
Isuzu timely submitted the MAERS report for year 2018 on 3/5/2019, although the report was not audited during the audit period, I reviewed the 2018 emission report as part of this inspection. The facility reported total emissions from FG-TESTCELLS equal to 22,963 pounds (approximately 11.5 tons per year). As expected from diesel engines, NOx is the main pollutant (7.24 tons per year) representing 63 % of the total emissions and Co representing 13.5 %. Similar quantities were reported in year 2017, for a total of 12 tons per year, with 7.66 tons of NOx per year. See attached for pollutant and quantities details.

11 - FINAL COMPLIANCE DETERMINATION

Isuzu appears to be in compliance with the evaluated requirements and the applicable state and federal air emissions standards, rules and regulations.

NAME Nazanin Sandovare DATE 6/25/2020 SUPERVISOR JK