

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

B404926700

FACILITY: GM Technical Center		SRN / ID: B4049
LOCATION: Facilities Operations Building, WARREN		DISTRICT: Southeast Michigan
CITY: WARREN		COUNTY: MACOMB
CONTACT: Peter Maciejewski, Sr. Project Engineer		ACTIVITY DATE: 08/05/2014
STAFF: Francis Lim	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection		
RESOLVED COMPLAINTS:		

**On August 5, 2014, I conducted an inspection at General Motors LLC – Warren Tech Center located at 6250 Chicago Rd, Warren. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Administrative Rules; and Renewable Operating Permit ROP No. MI-ROP-B4049-2009a. Pete Maciejewski, Sr. Project Engineer is GM's environmental contact.**

GM Technical Center conducts research on all aspects of automobile development and production, including design, engineering and manufacturing. This facility operates a powerhouse that provides process steam and space heating at the Tech Center complex. It also operates an IT Center that has several emergency diesel engine electric generators to provide power during an outage.

ROP No. MI-ROP-B4049-2009 (renewal) was issued to the facility on Aug 18, 2009. The ROP was reissued on February 15, 2012 for an administrative amendment for a name change from General Motors Corporation to General Motors LLC. The ROP was reissued on Nov 28, 2012 to incorporate the permit conditions of Permit-to-Install No 82-11. Section 1 of the ROP includes engine dynamometers, paint spray booths, wood working operations, metal machining operations, fuel storage tanks, cold cleaners, vehicle gas tank purging, and emergency electric generators. Section 2 of the ROP consists mainly of the natural gas-fired boilers located at the powerhouse.

**ROP No. MI-ROP-B4049-2009b**

NOTE: ROP renewal ROP No. MI-ROP-B4049-2014 was issued on September 29, 2014 after the inspection.

**Section 1**

**EUVVO-S1**

This emission unit covers the vehicle validation operation, or Pre-Production Body Center.

Emission source is primarily the coating line, which includes the paint spray booth, phosphate application line, oven, and flash off tunnel. There is only one booth used for prime coat, topcoat and clearcoat. After priming, the vehicle body is transferred to an oven and goes back to the booth for application of topcoat and clearcoat, if needed. Most of the time, the vehicle bodies are just primed. The vehicle bodies are coated with low gloss gray primer to prevent reflection so that the high speed cameras can see the crash dummies during crash testing. The vehicle bodies are coated with white primer to locate where the stress points are.

Particulate emissions from the paint spray booth are controlled by dry filters. N-Butyl Acetate is used as reducer. Recycled solvents are used for purge and cleanup. Air assisted spray gun is used. Paint usage is estimated from production. The number of full auto bodies coated are counted and multiplied by an emission factor that was derived from measuring a typical amount of coating used per auto body. Emission factor depends on the coating used. Body panels count as a fraction of a full body. The supervisor for this area is responsible for monitoring paint usage (number of auto bodies coated).

Limit of 400 lbs. VOC/day is not exceeded. For 2014, highest VOC/operating day was 105.7 lbs. for January. Limit of 36.0 tpy, based on a rolling 12-month period is not exceeded. For the period ending in June 2014, VOC emissions are 5.47 tpy. I compared June 2014 emissions and usage record with the data entered in the 12-month rolling records. Data matches. See attached records.

Number of operating days are recorded. Facility keeps a list of the VOC content of the coating, reducer and purge/cleanup solvents.

There is another vehicle validation operation located at the General Services Bldg. There are no paint spray booths installed there.

#### FGRULE287C-S1

Paint spray booths that are exempt under Rule 287c are installed in the following locations: Manufacturing A (Bldg. 109), Manufacturing B (Bldg. 108), Powertrain (Bldg. 207), Powertrain Emissions (Bldg. 208), Engineering South (Bldg. 111), Aero Lab (Bldg. 114), Climatic Wind Tunnel (Bldg. 105), Service Ops (Bldg. 204), Vehicle Engineering Center (VEC, Bldg. 210 West), Parts Fab (Bldg. 301), General Services 1 (Bldg. 302), R & D (Bldg. 106) and Design (Bldg. 113).

A paint usage log is kept for each paint spray booth subject to this flexible group. Purge and cleanup solvents are collected in buckets and transferred to a hazardous waste drum. The gun cleaning station uses a little basin with solvent (not considered cold cleaners). Purge and cleanup solvent usage is not reported. Based on GM's records, staff verified that the monthly limit of 200 gallons per booth was not exceeded. Paint usage records for each booth for 2014 are attached to this report.

Documentation of the filter replacement is only required for booths spraying more than 100 gallons of coatings per year. Facility keeps filter documentation for all booths that are using more than 100 gallons per year. Only the paint spray booths located in the Design Building, Manufacturing B Building (coating lab), and Service Ops Building use more than 100 gallons per year.

The following booths are installed in the Design Building: five large booths (Booth Nos. 36, 37, 42, 43, and 44), two small booths (Booth Nos. 41 and 45 – this booths are rarely used), and three booths used for plastering and resin casting. A maintenance paint booth is located in the basement. For the five large downdraft booths, floor dry filters are changed once a week; roof exhaust filters, twice a year. During the previous inspection, I was informed that Inland was hired to manage and evaluate the filter replacement for the Design Building booths since GM estimates that they are changing their filters more frequently than necessary.

The three booths used for plastering and casting use a parting compound (release agent). A daily log is kept to track parting compound usage.

All paints are stored in the paint mix room. The hazardous waste is stored in drums, also at the paint mix room. Paint viscosity is carefully measured before it is sprayed. Spray guns use a disposable cup to hold the coating. As a result of using disposable cups, less purge and cleanup solvent are used. Air assisted HVLP spray guns are used. Established formulations which are used in the assembly plant are generally used. Cleanup solvents are recorded but not reported as part of Rule 287 records. Booth No. 36 and 37 are state of the art booths (excellent humidity control) and are typically used more than the other large booths. As of June 2014, highest paint usage in Booth No. 36 occurred in June (41 gallons); in Booth No. 37, May (39 gallons).

The coatings lab (located at Manufacturing B Bldg.) resembles a coating line at an assembly plant. Experiments (as well as painter training) are conducted to properly setup the robotic spray guns in the assembly line. The coating line is controlled by a downdraft water wash system. As of June 2014, 220 gallons were used for 2014.

The maintenance paint spray booths at Site Operations and Service Ops (Service Technology) are subject to additional Part 6/7 rules pertaining to plastic and metal coatings (Design Bldg. maintenance paint spray booth has been removed). In accordance with Rule 621 and Rule 632, the facility is exempt from these rules if all of the following is not exceeded: VOC emissions of 2000 pounds per line per month, 10 tons per line per year, and 30 tons per year for all metal and plastic parts coating lines. GM keeps separate emissions records to show that VOC emissions from these paint booths are within the limits, and thus exempt from Rule 621 and Rule 632. Staff verified that actual emissions are well below the threshold limits. Emission compliance records for Part 6/7 rules are attached to this report. NOTE: Service Technology spray booth is used to repair corporate cars used by company executives.

#### FGRULE290-S1

There are two gasoline purge units under this flexible group. These are located at the GSB-1 Bldg. and the Engineering Bldg. For safety reasons, GM does not want any gasoline stored in a vehicle gas tank for an extended period of time (more than 2-3 days). After the vehicle gasoline tanks have been worked on, gasoline is emptied from the gas tank. The tanks are then cleaned and purged using a liquid alkaline cleaner called SLIX. An air hose bubbles the SLIX in the gas tank for approximately 8 hours to purge the remaining gasoline in the tank. After the cycle, the SLIX is pumped back to the reservoir. Another 8 hours is required to air dry the tank. The gas tank is scrapped, stored or sent back and worked on again.

GM established an emission factor for each tank that is purged. Since gasoline contains some carcinogens, the Rule 290 limit is 20 pounds per month. In 2013, there was not much activity at the Engineering Building – only six tanks were purged. For the GSB-1 Bldg., November had the highest emissions at 7.56 pounds. A log sheet is maintained where the number of tanks purged is recorded. Emissions records are attached to this report.

#### FGWOODMETAL-S1

This flexible emission group covers wood and metal machining, metal grinding, sand blasting, and shot blasting equipment. Equipment is subject to Rule 331 and controlled by dust collectors. Dust collectors exhaust outdoors; some emit indoors.

GM maintains a current list of equipment subject to Rule 331 and exempt under Rule 285(l) (vi). The list includes type of dust collector and whether it emits indoors or outdoors. Majority of woodworking and metal machining units are seldom used, except for units at the Design Bldg.

Since the wood and metal working units are numerous and the Tech Center complex huge, the location of the working units are divided into quadrants, for the purpose of conducting and recording VE readings. VE observations of the dust collector exhaust stacks are conducted monthly, by quadrant. Staff verified that monthly VE readings are recorded for each quadrant. Since majority of the units are seldom used, the units may not be running during the VE readings. However, because of good maintenance on the equipment, visible emissions are not expected. For majority of wood and metal working units, routine and preventative maintenance is conducted on the dust collectors annually. For units that are used more often, preventative maintenance is done quarterly (units at the Design Bldg.) Pete Maciejewski determines which units are seldom used, thus annual preventive maintenance for those units is sufficient. Maintenance software called Maximo is used to schedule and track maintenance activities. A copy of the monthly VE readings per quadrant is attached.

Facility maintains on file a calculation which demonstrates that compliance with the particulate limit is achieved. In demonstrating compliance, GM took a particulate sample from the dust collectors at the wood shop located at Parts Fabrication. After looking at all equipment subject to FGWOOD/METAL, GM determined that dust collectors from Parts Fabrication will represent worst case. Particulate emissions were then calculated using the known amount of air contaminant collected over a period of time.

During the Tech Center complex drive-thru, staff did not notice any visible emissions from equipment subject to this flexible group.

#### FGCOLDCLNRS-S1

Most of the cold cleaners are located in Section 1 although some cold cleaners located in the Powerhouse (Section 2) have been included in this flexible group. Cold cleaners use either solvent based or water based material. Cold cleaners have an air vapor interface area of less than 10 sq. ft. Written procedures complying with Rule 707 are posted near the cold cleaners. Attached to this report is an updated record of the air/vapor interface of each cold cleaner, type of cleaners used, corresponding Reid vapor pressure, solvent usage, and VOC content. Although the record contains information stating that some solvents have Reid vapor pressure of more than 0.6 psia, none of these solvents are used in the cold cleaners.

The Safety Kleen cold cleaners are serviced every 16-18 weeks. Used solvent is removed and replaced by a fresh batch. A record of how much was taken and how much was put in is kept. Net usage is calculated based on the difference.

Other cold cleaners are serviced by GM personnel. For these cold cleaners, solvents are replaced infrequently, only when it becomes dirty. Since operators do not log this infrequent solvent replacement, solvent usage from these cleaners is just estimated. Solvent used in the GM-serviced cold cleaners is a petroleum distillate (SK/Premium Gold) and has a VOC content of 6.6 lbs./gal.

Staff randomly inspected some cold cleaners during the plant walk-thru. Covers and procedures for the cold cleaners are in place. Some of the larger cleaners have electrically or mechanically assisted covers.

The list of active cold cleaners has been changing at the Tech Center. Since many operations at the Tech Center have stopped, the number of cold cleaners has been reduced. Emissions from the cold cleaners are reported in MAERS.

#### FGRDDYNOS-S1

This flexible group covers the permitted engine dynamometer test cells 2, 3, 4, 5, 6, and 16 located at the Research & Development Bldg. A dynamometer is a machine that is used to measure torque and rotational speed from which power produced by the engine can be calculated. A dynamometer that is coupled directly to an engine is called an engine dynamometer. Most of the engine dynamometers installed at the Tech Center are designed to just absorb the load from the engine being tested (through the engine crankshaft). Some engine dynamometers are universal, capable of either absorbing the load or motoring the engine being tested.

During the dynamometer inspection, staff met with Chris Budzyn. The engine dynamometers covered by this flexible group are used for testing engine emissions, fuel economy, heat distribution, as well as engine oil life. For the engine oil life testing, the engines are run using different engine configurations, from idling to full throttle. These tests can last up to seven days. The engines are either fired up with fuel or the dynamometers can motor the engine. Gasoline, diesel and indolene are used as fuel. Indolene is a standard form of gasoline used in testing and it does not have any additives.

A stack test was conducted on July 14-20 and August 16, 2004, to verify emission factors for CO and 1,3 butadiene. Lead was not tested since leaded gasoline is not used. The test results are: for CO, 2.5 pounds/MM BTU (gasoline) and 0.68 (diesel); 1,3, butadiene, less than 0.08 gms/MM BTU (gasoline), less than 0.29 (diesel). Note that the CO test was just to confirm emission factors while 1,3 butadiene test was to establish emission factors.

AQD staff verified from emission records that emission limits are not exceeded. For the 12-month rolling period ending July 2014 heat input to the dynamometers is 18 MM BTU/yr. compared to limit of 7,500. Maximum daily average is 0.6 MM BTU/day which occurred in July 2014, compared to the limit of 204 MM BTU/day. Maximum CO daily average is 1 lb./day which occurred in July 2014, compared to the limit of 4,896 lbs./day. CO emissions for the 12-month period ending in July 2014 are 0.3 tons, compared to limit of 90 tons. Maximum 1,3 butadiene lbs./day is almost zero, compared to the limit of 12 lbs./day. 1,3 butadiene emissions for the 12-month period ending July 2014 is 0.2 lbs. compared to limit of 97.5 lbs. Emissions records for the 12-month period ending in July 2014 are attached.

For ROP compliance calculation, GM uses the CO emission factor in the permit. For MAERS, GM uses the test results (which is much lower) in calculating CO emissions. According to Pete, in the MAERS seminars, they were instructed to use stack test results if it is available. The ROP renewal did not require another stack test for the test cells.

Staff verified that daily usage logs are kept for each permitted dynamometer.

#### FGEXEMPTDYNOS-S1

This flexible unit is for exempt and grandfathered engine dynamometer test cells.

All grandfathered engine dynamometer test cells located at the Powertrain and Engineering buildings were taken out of service in 2009 (grandfathered engine dynamometers were installed in 1953). The buildings that housed these grandfathered test cells have been renovated. The battery lab is housed at the former Powertrain building.

Engine testing operations previously conducted at the Powertrain and Engineering Buildings were moved to Pontiac. Except for some parts and electronics, the grandfathered engine testing equipment that was taken out of service from the GM Tech Center were not transferred to Pontiac.

In addition to the 6 permitted R&D engine dynamometer test cells (#2, 3, 4, 5, 6, and 16), there are 13 remaining grandfathered engine dynamometer test cells installed at Research & Development. These grandfathered cells are identified as # 7, 8, 9, 10, 14, 17, 18, 20, 21, 25, 28, E and F. One engine dynamometer is installed per test cell. Any R&D engine testing could be done in any of the permitted or grandfathered test cells.

Another test cell is located nearby at Bldg. 102 and identified as #1-98. This test cell uses radioactive material as a tracer during the engine test. Anybody entering this building needs to wear a dosimeter.

For MAERS reporting, usages for the exempt dynamometer test cells are estimated. Every month, gasoline tank inventory is submitted to Pete. To estimate usage for the grandfathered test cells, tank farm inventory is taken and the fuel usage for the permitted dynamometer test cells is subtracted. Note that except for the fleet vehicle gasoline storage tanks, gasoline at the tank farm is used for engine dynamometer testing only. There are 15 tanks in the tank farm – eight have a capacity of over 2,000 gallons (included in FG-GASTANKS-S1). See attached R&D Tank Farm Fuel Use and Emissions Data.

During the previous inspection, staff noted that some grandfathered dynamometers from Engineering and Powertrain that were taken out of service were transferred to be used at the grandfathered R & D test cells. Mr. Gary Jones, manager at the R&D operations explained that they plan on substituting these dynamometers from Engineering and Powertrain while their own dynamometers are being repaired. During the inspection, Chris Budzyn stated that the transferred dynamometers from Engineering and Powertrain are not actually being used.

#### FGGASTANKS-S1

The gasoline tanks are subject to the requirements of Rule 703, loading gasoline into new stationary vessels of more than 2,000 gallon capacity at dispensing facilities.

In the ROP renewal, 28 exempt gasoline UST and AST are listed: 5 at Engineering, 3 at Climatic Wind Tunnel, 9 at Powertrain, 3 at Powertrain (for fleet vehicles), and 8 at Research Fuel Blend. The tanks at the Research Fuel Blend are located in an above ground vault.

Since the grandfathered engine dynamometer test cells at Engineering and Powertrain have been removed, all gasoline storage tanks in the Engineering and Powertrain Building subject to this flexible group requirements have been drained of fuel, cleaned, purged and subsequently removed in July 2011.

Each remaining tank (14 remaining minus one tank at Climatic Wind Tunnel which is not a dispensing tank) subject to this flexible unit is equipped with a permanent submerged fill pipe, a vapor balance system (or equivalent) and an interlock system which ensures a vapor tight collection line. AQD staff verified that inspection records showing inspection for vapor tightness is conducted, every quarter. The connectors and plungers (check plunger spring automatically retracts to seal the tank) for the vapor line are inspected to verify that these are still working properly. Facility also keeps a record of the installation date and capacity of each tank. Diesel tanks are not included in this flexible group. A list of the remaining tanks and tank inspection records are attached to this report.

#### FGEMGENS-S1

The flexible group FGEMGENS covers all exempt emergency generators less than 10 MM BTU/hr. These generators are subject to the RICE MACT. GM keeps a list of all emergency

generators (permitted and exempt) that includes a summary of requirements for each of the emergency engine generators installed. The emergency generator list is attached to this report.

Required maintenance (including oil changes) were completed for the following engine generators: 1) Bldg. 108 (Manufacturing B), 2) Bldg. 115 (Main Gate fire pump), 3) Bldg. 207 AEC Center), and 4) Bldg. 101 (Facilities Ops). The generator at Bldg. 102 (Research Chemical Lab) has been out of service since September 2013.

A 563 HP generator installed in 2008 (Bldg. 106 R & D Courtyard), two 1,207 HP generators installed in 2009 (7000 Bldg. East), a 671 HP natural gas-fired generator installed in 2004 (7000 Bldg. East) and a 603 HP natural gas-fired generator installed in 2009 (Bldg. 108 Manufacturing B) are subject to the RICE MACT initial notification requirements, which has been submitted. On January 13, 2013, EPA issued the final rule amending the RICE MACT.

NOTE: The 563 HP generator installed in Bldg. 106 R & D Courtyard and one of the two 1,207 HP generators installed in 7000 Bldg. East is also subject to NSPS Subpart IIII. See EUDIESELGEN-S1.

#### EUDIESELGEN-S1

This flexible group contains requirements for the exempt emergency diesel generators that are subject to the NSPS Subpart IIII.

There are two exempt emergency diesel generators subject to NSPS Subpart IIII - a Detroit Diesel 563 HP generator installed in 2008 (2007 model year, located at Bldg 106, R&D) and a MTU Detroit Diesel 1,207 HP generator installed in 2009 (2008 model year located at Bldg 202 – 7000 Bldg. East). Diesel fuel used has a sulfur content of less than 15 ppm and a cetane index of 47. Cetane index is calculated based on the fuel's density and distillation range. It is a measure of the diesel fuel's ignition quality. These 2 emergency diesel generators do not have diesel particulate filters, since the filters are not necessary to conform to the PM standards.

These two engines are certified. There is a faceplate attached to the engines stating that the engines conform to EPA regulations. I also verified from the EPA website, based on model year, manufacturer and engine family, that these engines are certified.

A non-resettable hour meter is installed and operating. Usage is less than 100 hours. See attached record of hours of operation.

#### FG-GENERATORS

This flexible group is for two diesel generators evaluated under PTI No. 82-11 issued on August 19, 2011. The two diesel generators are rated at 2876 HP each, manufactured by Caterpillar, installed in 2001 and located at the VEC Bldg. At the time of installation in 2001, GM thought the capacity of the generators were below 10 MM BTU/hr, and thus exempt.

The permit has a NOx limit of 15.5 tpy (each), based on a rolling 12-month period and a limit of 500 hours (each) operation per 12-month rolling time period. Both units are equipped with a non-resettable hour meter, and use diesel fuel with sulfur content less than 15 ppm. For the 12-month period ending in July 2014, hours of operation for each of the East and West generator is 10 hours per year. For the 12-month time period ending in July 2014, NOx emissions for each of the East and West generator is 0.47 ton. Attached to this report is a record of hours of operation and NOx emissions.

Both units are considered "affected source" under the RICE MACT, but with no requirements, and no notification. On January 13, 2013, EPA issued the final rule amending the RICE MACT. Both units are not subject to NSPS Subpart IIII (compression ignition engines).

## Section 2

### FGBOILERSCL-S2

Two natural gas-fired climatic boilers were installed to create climatic conditions to conduct physical analysis of vehicles in the climatic wind tunnel. These boilers are now used only as backup, since steam for the climatic wind tunnel is now supplied by the main steam plant. The climatic boilers are only operated mostly during the weekends as well as for monthly testing. Natural gas usage is recorded monthly for each boiler. Records are kept in the Powerhouse.

As of July 2014, total usage for the year for both boilers is less 0.1 MMCF of natural gas. Usage records are attached to this report.

The climatic boilers are subject to 40 CFR 60, Subpart A and Dc. The climatic boilers are subject to the requirements of the Boiler MACT, 40 CFR 63 Subpart DDDDD. The Boiler MACT was promulgated on January 31, 2013. Compliance date for existing sources is January 31, 2016. For natural gas-fired boilers, compliance requirements include tune-ups, one-time energy assessment and compliance reports.

### FGBOILERS-S2

There are six dual fueled boilers at the site, although natural gas has been the only fuel for the past several years. The four Fuel Oil No. 6 storage tanks have been drained, cleaned, and purged in 2008. If ever natural gas becomes unavailable, facility intends to just order a truck delivery of fuel oil. Boilers 2, 3, 4, and 5 are grandfathered.

NOTE: PTI No. 42-14 was issued on April 18, 2014 to allow fuel oil usage only during gas curtailment for all six boilers. This allows the facility to be classified as gas 1 category for the Boiler MACT.

The boilers are equipped with an oxygen and CO monitor in the flue gas exhaust. This aids in operating the boiler efficiently while minimizing air pollution. Boilers 1, 5, and 6 are computer controlled, which means the excess oxygen is set at a certain percentage and automatically adjusted. Excess oxygen is set at 4-6%. The boilers are not equipped with economizers (flue gas does not heat boiler feedwater). The flue gas however is used to preheat the combustion air. The forced draft fans are not variable speed. Combustion air volume is controlled by dampers. Boilers 2, 3, 4, and 5 have combined forced draft and induced draft fans. Facility does not conduct flue gas analysis since they already have CO and oxygen monitors. The CO and oxygen monitors are calibrated. Boiler tubes that leak are plugged. For safety concerns, state regulations do not allow plugging more than 10% of the boiler tubes.

The powerhouse operates 24 hours a day/7 days a week. During the summer, only one small boiler is usually operated. During winter, up to three may be operated. On most winter days, Boiler 1, which is the largest at 240 MM BTU is sufficient to supply the steam demand.

This flexible group has a sulfur limit on fuel oil. There has been no fuel oil delivery in the past several years and fuel oil is no longer stored in any of the storage tanks.

There is a SO<sub>2</sub> 12-month rolling and pounds/hour limit for Boiler 6 only. Since no fuel oil is



used, sulfur dioxide emissions are well below limits. If fuel oil needs to be used, the fuel oil burner has to be manually inserted in the combustion chamber.

Facility keeps a monthly natural gas usage as recorded from gas meters for each boiler. As of July 2014, total usage for 2014 is 554 MM cubic ft. Attached to this report are 2014 fuel use records.

The boilers are not subject to 40 CFR 60, Subpart Dc since the boilers were installed prior to the NSPS promulgation date.

The boilers are subject to the Boiler MACT. For gas 1 category boilers, compliance requirements include tune-ups, one-time energy assessment and compliance reports. The U.S. Environmental Protection Agency published the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT) final rules in the Federal Register on January 31, 2013. Existing sources will have until Jan. 31, 2016 to comply with the rule, while new sources have until Jan. 31, 2013 or startup date, whichever is later, to comply with the rule. The Boiler MACT requires owners of industrial, commercial and institutional boilers to comply with the EPA's standards for air pollutants, including mercury. For natural gas-fired boilers, compliance requirements include tune-ups, one-time energy assessment and compliance reports.

NOTE: On March 15, 2012, GM filed an Initial Notification of Boiler MACT applicability for the two climatic boilers and the six powerhouse boilers together with a number of miscellaneous boilers located on site. GM filed the notification "even though EPA on February 7, 2012 issued a No Action Assurance Letter advising companies that filing initial notifications would not make sense because future additional notifications will be required when EPA's rules are revised".

#### **Permits Not Rolled-In ROP**

NOTE: ROP renewal ROP No. MI-ROP-B4049-2014 was issued on September 29, 2014 after the inspection. The following PTIs have been rolled-in the ROP renewal.

#### **PTI No. 160-11A**

This permit issued on July 13, 2012 is for (4) generator sets and (9) Diesel Rotary Uninterruptible Power Supply (DRUPS) generator sets. So far, only six have been installed - (2) Caterpillar gen sets and (4) MTU Detroit Diesel DRUPS gen sets.

The diesel gen sets demonstrate compliance with the NO<sub>x</sub>, HC, CO, and PM limits by providing manufacturer certification that the engines meet the emissions standards. Attached to this report are manufacturer certification for the gen sets and DRUPS gen sets. Ultra low sulfur diesel fuel is used as fuel.

Each gen set is limited to 500 hours of operation per year based on a rolling 12-month period. For the purpose of necessary maintenance checks and readiness testing, each gen set is limited to 100 hours of operation per year based on a rolling 12-month time period. Each emergency gen set may operate up to 50 hours of non-emergency situations per year based on a rolling 12-month time period. The 50 hours count towards the 100 hours per year allowed for maintenance and testing. As of the 12-month period ending July 2014, the Caterpillar Gen Set 1 operated 25 hours per year; Caterpillar Gen Set 2, 25.5 hours per year; DRUPS A1, 19.0 hours per year; DRUPS B1, 21.9 hours per year; DRUPS A2, 19.0 hours per year; and DRUPS B2, 19.9 hours per year. See attached report. The gen sets are equipped with a non-resettable hour meter.

All engine gen sets are subject to the RICE MACT (notification of startup- no emissions standards or work practice standards apply) and NSPS Subpart IIII. On January 13, 2013, EPA issued the final rule amending the RICE MACT. Startup testing was done in December 2012.

NOTE: GM discovered a deviation regarding the stack dimensions for the Caterpillar Gen Set 1 and 2. The stack heights were extended and work completed on July 2014. GM discovered a deviation regarding the nameplate engine capacity for the four MTU Detroit Diesel DRUPS. Actual engine capacity is higher than permit conditions. A permit modification has been submitted.

PTI No. 42-13

This permit is for a 1099 KW diesel-fired emergency electric generator located at 7000 Bldg. This engine is subject to 40 CFR 63, Subpart IIII. This is a certified engine (certification attached). Hours of operation for the engine is limited to 500 hours per year based on a rolling 12-month time period. As of July 2014, engine operated for 45.90 hrs. per year based on a rolling 12-month period. A non-resettable hour meter is installed.

PTI No. 42-14

This permit was issued on April 18, 2014 to allow fuel oil usage only during gas curtailment for all six boilers in the Powerhouse. This allows the facility to be classified as gas 1 category for the Boiler MACT.

NAME

J. A. V.

DATE

10-24-14

SUPERVISOR

CJE