

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

N788631327

FACILITY: Hyundai-Kia America Technical Center Inc. (HATCI)		SRN / ID: N7886
LOCATION: 6800 GEDDES RD, SUPERIOR TWP		DISTRICT: Jackson
CITY: SUPERIOR TWP		COUNTY: WASHTENAW
CONTACT: Shawn Mirza, Senior Environmental Health & Safety Engineer		ACTIVITY DATE: 09/22/2015
STAFF: Diane Kavanaugh-Vetort	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Complete Scheduled inspection Title V Major ROP Facility. PCE of FCE.		
RESOLVED COMPLAINTS:		

N7886 Hyundai-Kia America Technical Center, Inc.

Contact: Shawn Mirza, Senior Environmental, Health & Safety Engineer, office phone (734) 337-2975, Cell (313) 522-0606, email: imirza@hatci.com

On the morning of September 22, 2015, I conducted a complete, scheduled compliance inspection, announced a short time prior, at the above Hyundai America Technical Center facility (hereinafter HATCI) location in Superior Township. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state regulations, in particular Act 451, Part 55 Air Pollution Control regulations, the administrative rules and the conditions of HATCI's ROP-MI-N7886-2014. This is HATCI initial ROP and the inspection completes the Full Compliance Evaluation for fiscal year 2015.

Prior inspection was conducted on September 27, 2012 and the most recent performance test was of one Engine Test Cell Dynamometer conducted on September 27-28, 2011. HATCI is a Title V Major Source due to having CO emissions greater than 100 tons per year. HATCI submitted 2014 MAERS timely and their first ROP Certification/Deviation report was submitted in March 2015 and indicated compliance.

Upon my arrival to the site I did not observe any visible emissions or detect any odors. I provided my identification at the security/reception desk. I met with Shawn Mirza, Senior Environmental, Health & Safety Engineer. Shawn is fairly new to HATCI. He and I held a pre-inspection conference and he accompanied me during the inspection.

During the pre- inspection conference I provided Shawn with the MDEQ Brochure, Environmental Inspections: Rights and Responsibilities. I went over the general aspects of the inspection and informed Shawn that I needed to observe the permitted equipment and some of the exempt equipment. I asked him about two areas related to FG-DYNOS that were new to me based on my review of their ROP certification: 1) reference to "mani-cats" in manifolds; 2) separate fuel meters installed in January 2015. Shawn explained these briefly and said we could observe both during the inspection.

I told Shawn that I would need to obtain copies of all required recordkeeping. He explained HATCI's recordkeeping system and he had a binder prepared with much of the required records. HATCI's ROP contains limits based on 12 month rolling periods as determined at the end of each month. I requested records for the previous 12 month period ending August 2015 (most recent complete month). Shawn provided the following general facility information: HATCI currently employs 220 people. They operate normally 8 am to 5 pm Monday through Friday and on some weekends. Dynamometer engine testing however can run any schedule. Shawn said the test profiles primarily run are part-load, developmental, durability and Wide Open Throttle (WOT).

COMPLIANCE INSPECTION

During the inspection I met the following HATCI staff for portions of the physical inspection: Dave Childs, Chassis Dynos Engineer; Brian Kelly, Chassis Dynos, Lead technician; Joel Cherry, Engine Dyno Lead technician; Larry Quint, Senior Facility technician-HVAC and Boilers maintenance.

During the facility walk through inspection I observed the **FG DYNOS** which includes four engine dynamometer test cells EU-Dyno1, EU-Dyno2, EU-Dyno3, EU-Dyno4; **FG-CHASSIS** which includes four Chassis dynamometers EU-VEC1, EU-VEC2, EU-VEC3, EU-MDYNE1; and **FG-UST** underground fuel storage tanks identified as EU-UST#2-3-4, EU-UST#5-6, and EU-UST#7. **FG-GASDISPGACT** gasoline dispensing facilities

(GDFs) located at an area source of HAPs subject to federal MACT Subpart (6) C: EU-UST#1, EU-GASAST1, and the above USTs. **FG-NSPS_SI-ICE** covers EU-EMERGEN a NSPS Subpart JJJJ emergency generator. **FG-MACT-ZZZZ-EMERGENCY** covers EU-FIREPUMP a MACT Subpart ZZZZ emergency generator.

HATCI has installed and is operating other existing exempt equipment including **FG-COLDCLEANERS**. I observed during previous inspections, a small maintenance spray booth with aerosol spray paint and a Safety Kleen type parts cold cleaner.

HATCI ROP contains a **FG-FACILITY** (facility wide) applicable requirements include emission limits and emission factors (controlled and uncontrolled), for NOx, CO, 1, 3-Butadiene, and Benzene. Most known fuels are allowed to be burned including, unleaded gasoline, ethanol blends, diesel, natural gas and hydrogen. Fuels limitation is 230,000 gallons of fuel (total combined usage of all allowed fuels) per 12 month rolling time period as determined at the end of each calendar month. Of these 75,000 gallons uncontrolled fuel is allowed per 12 month period. Wide Open Throttle (WOT) testing is considered uncontrolled.

Two other fuel storage/use containers are reported & part of recordkeeping but are not included in FG-UST and FG-GASDISPGACT these are: DieselAST2 – small above ground diesel tank and Chassis Barrel Fuel – fuel in barrels used to directly fuel complete vehicles during chassis testing.

FG-FACILITY Recordkeeping is required monthly including: the days of operation; the load engine was tested for natural gas testing (condition limits loads to no greater than 90 percent); gallons fuel usage controlled/uncontrolled; natural gas use; monthly & 12 month rolling emission calculations (NOx, CO, 1,3-Butadiene, Benzene); average daily fuel use based on monthly fuel use divided by the number of days operated during the month; daily 1,3-Butadiene emission calculations based on monthly emissions divided by number of day operated during the month; and a record of maximum sulfur content in the diesel fuel for each delivery.

FG-CHASSIS: 4 enclosed vehicle test stations: These emission units are identified as: EU-VEC1, EU-VEC2, EU-VEC3, and EU-MDYNE1. Note: An additional Chassis EU-VEC4 was later installed under permit exemption Rule 285(g) exemption and is not part of this FG. This is the flexible group containing permitted emission units where whole vehicles equipped with Catalytic Converters are tested.

During the inspection I observed the Chassis area that contains the four Chassis Dynamometer rooms (not EU-MDYNE1). Shawn introduced me to Brian Kelly, Chassis Dynos, Lead technician in this area. I observed Chassis 4 had just ended testing. The EU-MDYNE1 Chassis dyno is located in a separate building behind the main building. HATCI refers to it as the "Mapping Dyno" and told me it has not been used in a long time.

FG-CHASSIS special conditions require all vehicles be equipped and maintained with catalytic converter. Also requires a device to monitor and record natural gas usage rate used to fuel vehicles. Required record keeping includes days of operation, and the fuel used for vehicle testing.

Shawn and I walked into the area behind the Chassis rooms where the soak rooms and/or other types of testing (non-fuel burning) are located. Soak Booths/Rooms: two separate booths with an exhaust stack. Basically cars are parked in these booths and shut off. They measure emissions from them without running that is to say emissions are from evaporation or off-gassing. Between these booths and the three chassis rooms there is an open room/area which is climate controlled and they do additional measurement of parked vehicles here. This area has no applicable requirements.

During the inspection I went outside to observe the Emergency Fire pump generator located behind the facility in a separate building. Shawn contacted Larry Quint, Senior Facility technician-HVAC and Boilers maintenance to allow us access to both emergency generators. EU-FIREPUMP appeared in good condition and is regularly tested. While we were walking back inside to observe EU-EMERGEN I observed the EU-MDYNE1 Mapping Chassis Dyno building. Shawn explained the dyno is no longer used and during the prior inspection I observed the building was being used for miscellaneous equipment storage at that time. Shawn explained different R&D departments are considering options for using it. In 2009 HATCI's then PTI was revised to add this Chassis. It has one exhaust stack and the car exhaust is connected to this. It is a four-wheel, raised dyno. It replicates specific rough highway driving conditions and is not for emission testing (EPA/federal standards) like the existing four Chassis Dynos located inside the main plant.

FG-DYNOS: Engine Test Cells 1-4:

Shawn informed me that Steve Conrad, former technical contact for FG-DYNOS is no longer with HATCI. He

introduced me to Dave Childs, Chassis Dynos Engineer and we recalled we had met previously during the FG-DYNOS performance testing. I also met Joel Cherry, Engine Dyno Lead technician and he explained the fuel monitoring system. He said to be conservative because they are to monitor fuel usage for controlled and uncontrolled testing they reset the meter in Cell 3 & 4 weekly and Cell 1 & 2 daily due to differences in test profiles and durations. Joel also showed me an idle engine in Cell 4 that had a "mani-catalyst". This is a newer style and the catalyst is not a separate piece but is built into or is a part of the manifold hence the term "mani-cat". It can still be removed and replaced he said.

Cells 1 and 2 have two dynamometers in each cell. Only one can operate at a time but it allows them to start the install/prep of another engine while testing. Cell 3 and 4 each has one dynamometer. Cell 3 is used for thermal shock and WOT. Cell 4 is used for Durability (also considered WOT).

HATCI also conducts "uncontrolled" testing, meaning without a catalytic converter or with a blank catalyst (no precious metals). Uncontrolled testing can be conducted in any Cell. FG-DYNOS conditions state engines must be equipped and maintained with a catalytic converter when operating in controlled mode. Permit condition requires that each dynamometer be equipped with a fuel usage monitor capable of separately tracking fuel usage for engine testing in controlled and uncontrolled mode where WOT is considered uncontrolled. This was verified by observing the fuel monitor in Cell 4 and recordkeeping was obtained.

FG-DYNOS requires records of days of operation, type of test performed and length of test performed on a daily basis, quantity of fuel combusted in controlled and uncontrolled modes.

FG-UST#2-3-4, #5-6, #7 Underground Storage Tanks (UST)

HATCI's primary tanks are the USTs. Primarily gasoline fuel is used for fleet vehicles, Chassis testing, and all Engine Test Cell Dynos. During past inspections it was clarified that HATCI installed and is operating two small above ground tanks, one gas, one diesel, each are 300 gallons. In the past I observed they were set up like gas-station pumps. Shawn said they are tracking all fuel usage by fuel additions made.

FG-GASDISPGACT: EU-UST1, EU-UST#2-3-4, #5-6, #7, and EU-GASAST1

HATCI flexible group includes existing and new/reconstructed GDFs located at an area HAP source that have maximum monthly **gasoline** throughput of one of the following: 1. Less than 10,000 gallons, 2. At least 10,000 gallons and no more than 100,000 gallons. The applicable regulation is 40 CFR 60 Subpart CCCCC (or (6) C). The regulation requires VOC minimization measures during handling/load/unload. Records of monthly throughput are required. HATCI records indicate compliance.

FG-NSPS SI-ICE: EU-EMERGEN

HATCI currently has one Generac natural gas emergency generator located outdoors on a balcony type roof. This RICE is subject to NSPS Subpart JJJJ and was demonstrated to meet the manufacturer emission certification during the ROP Technical review. HATCI is required to follow recommended maintenance to maintain certification. As stated above, Shawn contacted the maintenance supervisor and he accompanied us to observe both this unit and the EU-FIREPUMP. He indicated it is set to automatically run one hour per week for testing. Its purpose is to keep HATCI Michigan & California computer servers operating.

A non-resettable hour meter is required and it is allowed a maximum of 100 hours per calendar year for maintenance/readiness testing. HATCI records indicate compliance.

OVERALL RECORDKEEPING REVIEW:

The spreadsheets Shawn submitted to me are attached to this report and placed in AQD files.

FG-FACILITY records show days of operation for each month. Controlled and uncontrolled emission factors (lb/gal) based on fuel type are listed in the Emission limit table and emissions are reported in separate columns. For limited pollutants columns report tons per month per EU/FG and all EU/FG are then totaled to report tons per 12 month rolling time period.

HATCI CO emissions for the 12 month rolling period ending August 2015 = 132.05 tons CO. This is **Compliant** with limit of 224 tons per year.

HATCI NOx emissions for the 12 month rolling period ending August 2015 = 7.19 tons NOx. This is **Compliant** with limit of 15 tons per year.

HATCI Benzene emissions for the 12 month rolling period ending August 2015 = 0.09 tons Benzene. This is **Compliant** with limit of 0.263 tons per year.

HATCI 1,3-Butadiene emissions are limited to 5.232 pounds per day (lbs/day). HATCI records show a monthly total and this is divided by the total operating days in the month to obtain the daily average pounds for each month. In August 2015 operated 28 days and monthly emissions = 9.58E-03 1,3-Butadiene. Daily Average emissions in lbs = 3.42E-04. This is **Compliant** with 5.232 lbs/day 1,3-Butadiene emission limit.

HATCI 1,3-Butadiene emissions for the 12 month rolling period ending August 2015 = 0.0645 tons 1,3-Butadiene. This is **Compliant** with limit of 0.109 tons per year.

Fuel Use is reported as Sum of UST2-7 (gallons per month). As of month ending August 2015, 12 month rolling was: 57,806.89 gallons. This is **Compliant** with 230,000 gallon per year limit.

FG-DYNOS **controlled fuel use**: 798 gal/mo for August 2015. Ranged from low of 208.9 gal/mo in June 2015 to a high of 1,567 gal/mo in September 2014.

FG-DYNOS **uncontrolled fuel use**: 7,592.8 gal/mo for August 2015. Ranged from low in August to a high of 10,942.5 gal/mo in April 2015.

FG-CHASSIS fuel usage: 113.53 gal/mo for August 2015. Ranged from low of 0 gal/mo in Sept. 2014 to a high of 502 gal/mo in April 2015.

HATCI records indicate the 12 month rolling **combined fuel use** for month ending August 2015 = **61,235 gallons**. This is compliant with permit limit of **230,000 gallons** per 12 month rolling time period as determined at the end of each calendar month.

Of the 230,000 gallons HATCI is not to burn more than a total of **75,000 gallons of uncontrolled fuel** per 12 month rolling time period. HATCI records indicate the 12 month rolling uncontrolled fuel use for month ending August 2015 = **50,753 gallons**. This is compliant with the limit.

It is noted that HATCI records indicate the majority of the time since December 2013 they have been well below this limit. However, records show they reached a high of 97.4% of this limit in August 2014, and were in the 96% range in July and September. Shawn indicated his awareness of the potential non-compliance issue if exceed the limit and he indicated this is a priority area to monitor. He said he has been working with the related departments to determine what if any changes may need to be made. This could include a permit revision and adding on air pollution control. I advised HATCI review proposed changes for permit applicability and submit permit application early in the process.

CLOSING CONFERENCE Following the physical inspection we met in the conference room again to review HATCI recordkeeping. Shawn included two individuals from Mark Torigian, General Counsel's office, Jenna Travers, Paralegal and Allie Tomason, Paralegal.

I provided my general assessment from the inspection. It appears HATCI is in compliance pending review of the records obtained. Shawn discussed miscellaneous potential future changes that may require permit revision. I gave Shawn some Environmental Assistance developed cold cleaner Orange Stickers that include the applicable administrative rules from Part 6 and 7. I informed them that an inspection report will be prepared and an email with a copy will be sent to Shawn.

COMPLIANCE SUMMARY

Complete records for the period September 2014 through August 2015 were provided to me by hard copy during the inspection. All records obtained are attached to this report to be placed in AQD files.

Following the inspection I emailed Shawn and consultant Stephanie Jarrett, FTCH to request records clarification. HATCI will modify future spreadsheet to add total Gasoline dispensing facility (GDF) monthly throughput, and to change column headings to make comparison of 12 month totals to limits clearer. It was also clarified that Diesel is not currently being used in Dyno testing and when/if they add a diesel dyno they will update the spreadsheet.

The AQD has determined that HATCI is in substantial compliance with the federal and state applicable requirements of their current ROP and with the applicable exemptions.

NAME Diana K. Vetter

DATE 10/22/15

SUPERVISOR [Signature]