

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

N579234956

FACILITY: Consumers Energy - Overisel Compressor Station		SRN / ID: N5792
LOCATION: 4131 138th Ave., HAMILTON		DISTRICT: Kalamazoo
CITY: HAMILTON		COUNTY: ALLEGAN
CONTACT: Les Bradshaw , Field Leader		ACTIVITY DATE: 05/26/2016
STAFF: Dale Turton	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

This was a unannounced inspection of this natural gas compression, and storage station. This facility is operating under ROP # MI-ROP-N5792-2012a. During the spring, summer, and fall periods, they run the gas fired reciprocating engines to compress and then inject the pipeline natural gas into rock formations below the earth's surface. During the winter months, they draw the gas out of the fields, filter out the particles, dehydrate it of the water picked up from the earth, then put it into a distribution pipe.

Upon arrival, we (Amanda Chapel and I) asked for Les Bradshaw. Les was not available, so we were met by Jessica VanDussen, Compressor Station Engineer.

EU-ENGINES 1, 2, 3, 4

These are all natural gas fired reciprocating engines, rated at 19 MMBTU/hr each. Because of them being installed pre 1967, they were exempt from needing PTI's.

Unit numbers 2, 3, and 4 were being operated during the visit. There were no VE's observed from the exhaust stacks of the engines.

Records are kept of the gas usage, visible emissions, and hours run for each unit. For the MAERS report, the emissions for units #1 & #2 are reported together and units #3 & #4 are reported together since there are different emission factors for the two groupings. All of the engines are lean burn but units #3 & #4 have been retrofitted with clean burn technology.

Other than the source-wide condition to burn only natural gas at the facility and track the usage, there are no specific requirements in the ROP for these engines.

The 4 units are considered existing 2-stroke lean burn (2SLB) engines. This site is subject to 63 Subpart ZZZZ, but there are no emission limitations or operating limitations because the units are existing at a major source with a site rating of greater than 500 brake HP.

EUDEHYDY

There have not been any significant changes to the system since last inspection. This operation was not being used during the inspection since they are pumping gas into the field instead of drawing gas out.

The Overisel field natural gas is brought into the station and sent through an initial scrubber if needed. The gas then goes through one of a set of field scrubbers, and on through one of a set of suction scrubbers. The Salem field gas only goes through one of a set of suction scrubbers. These scrubbers remove the relatively large entrained water droplets from the gas. The gas then goes through a filter to remove small entrained particles. The gas containing only water vapor then is sent to on of a set of 5 dehydration towers utilizing triethylene glycol (TEG). The clean and dry gas goes to the distribution system. The TEG circulates back to the TEG recovery operation.

In simplified terms, the TEG goes to a flash tank that separates light gases from the TEG/water mix. The liquids then go to the reboiler & still column to remove the water and BTEX. The gases go through the condenser to remove most of the BTEX etc. Gases from the condenser and the flash tank are sent to the inlet of the reboiler to be burned with the fuel.

Records of the condenser temperature and flash tank outlet pressure are being kept. A daily log sheet is kept and the values are recorded every 2 hours. The permit requires that the condenser temperature be operated at less than 150 deg F and the flash tank be operated within the 20-40 psi range. A daily log sheet is kept for a large list of operating parameters for the system including temperatures, pressures, tank levels, and flow rates.

Samples of gas from the Salem field and the Overisel field were sent out for analysis in January 2016 in order to comply with Condition V.1 of EUGLYCDEHY.

Calculations of the HC, VOC, HAP, and BTEX emissions are being sent annually as an attachment to the MAERS report. They are using version 4 of GRI-GLY-Calc. Keeping these records and calculating emissions is in line with the requirements of Part 63 Subpart HHH. 40 CFR, Part 63, Subpart HHH is the MACT for Natural Gas Transmission and Storage Facilities. A notification of compliance status was received in April 2016.

EUDEGREASER1

The "ZEP" cold cleaner was meeting all of the requirements of Rule 707. The lid was down while not in use. The solvent being used is "DYNA 143, a light aliphatic naphtha with a vapor pressure of < 1.0 psi. The reported emissions for calendar year 2015 were 216 pounds.

EUEMERGGEN

A new emergency generator was installed in 2013. This is a Caterpillar G3516LE natural gas fired unit. It was installed under Permit No. 9-13. It is rated at 1462 hp (1.3 MW). It replaced the EUAUXGENERATOR listed in the ROP staff report. This new equipment has now been incorporated into the ROP as EUEMERGGEN.

Although the 16 cylinder engine is rated at 1300 KW, the attached generator is only capable of 1040 KW (1.04 MW).

A non-resettable hours meter is installed on the generator. It was reading at 65.2 hours at the time of the inspection. Since it has now been installed for just two years, the unit is obviously operating less than 100 hours per year, which is the permit limitation.

The stack dimensions appeared to comply with the permit restrictions. A flapper lid is installed on the stack that will lift up when the engine is being operated.

This 4 stroke, spark ignition, RICE is subject to both Part 60, Subpart JJJJ New Source Performance Standard (NSPS) and the Part 63, Subpart ZZZZ MACT. The ZZZZ initial notification form has been received from the company.

A requirement of the permit and the NSPS is that stack testing be performed if the engine has not been certified by the manufacturer. This engine was tested in 2014 it met the permit limits.

Records are being kept of the maintenance being performed on the unit. They performed an inspection of the hoses and belts in November 2015. An oil sample was sent out in December 2015. They determined that an oil change was not needed since it was still within the proper specs.

Source-Wide

There is a requirement that only natural gas be burned in the generators and engines. This is being complied with.

There also is a requirement regarding the venting of field gas. They follow a plan to comply with the permit condition.

A boiler and several heaters are subject to the MACT for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR, Part 63, Subpart DDDDD. An initial notification was received in 2013 and a notification of compliance status was received in January 2016. They have performed the required tune-ups and have done an energy assessment.

This company is subject to the MACT for Natural Gas Transmission and Storage Facilities, 40 CFR, Part 63,

Subpart HHH. An initial notification was received in 2013 and a notification of compliance status was received in April 2016.

Rule 214(4) Equipment

There are several exempt natural gas burning heaters and small boilers located throughout the facility. The complete listing is available in the ROP staff report. The company records the gas usage of these units for MAERS reporting purposes.

It appears that there are some heaters and tanks that are part of the glycol dehydration unit and were also listed in the staff report for the ROP. This duplication is not necessary and will be corrected.

NAME Dale Twiton

DATE 6/14/2016

SUPERVISOR MD 6/14/2016