

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

B722140297

FACILITY: DTE GAS CO. - MILFORD COMPRESSOR STATION		SRN / ID: B7221
LOCATION: 3515 CHILDS LAKE RD., MILFORD		DISTRICT: Southeast Michigan
CITY: MILFORD		COUNTY: OAKLAND
CONTACT: Chris Conley, Manager - Transmission and Storage Ops		ACTIVITY DATE: 05/18/2017
STAFF: Tyler Salamasick	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Compliance determination MI-ROP-B7221-2015b		
RESOLVED COMPLAINTS:		

Background

DTE Gas Co. Milford Compressor Station (DTE or Milford) is a natural gas distribution facility located 3515 Childs Lake Road, Milford, Michigan. DTE Milford is located in a primarily rural area with the nearest residential structure approximately 1000 feet from the facility. The facility was inspected on 5/18/2017 by Robert Joseph, Environmental Engineer and Tyler Salamasick, Environmental Quality Analyst of the Michigan Department of Environmental Quality, Air Quality Division. The intent of the inspection was to determine the facility's compliance with the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules and MI-ROP-B7221-2015b (ROP). The ROP was recently modified to include the addition of five turbines, six auxiliary boilers, and six comfort heating units. DTE Milford is a Major Source, Fee Category I, for criteria pollutants nitrogen dioxides (NO_x) and carbon monoxide (CO). The facility's four DeLaval 4,000 horsepower natural gas fired compressor engines and the 2.51 MMBtu/hour natural gas boiler are the primary source of the facility's NO_x and CO emissions. The other minor contributing sources of NO_x and CO include two emergency generators.

DTE recently requested to have the FGDELAVALS SC IX.1 language in PTI No. 149-80 modified. The original permit, issued by the US EPA (EPA-5A-70-20), stated "Michigan Consolidated Gas Company shall use no more than four, 4000 HP DeLaval natural gas-fired reciprocating internal combustion engines *at this facility*." AQD Permit Section reissued PTI 209-16 which changed this source wide restriction to a flexible group restriction. SC XI now reads "The permittee shall use no more than four, 4,000 HP DeLaval natural gas-fired reciprocating internal combustion engines in *FGDELAVALS*." This change allows the facility to operate additional engines at the facility. This modification was approved by MDEQ Permit Section and was incorporated into the ROP.

Inspection

Site arrival was at 11:30 am. on 5/18/2017. Upon arrival we spoke with security. We presented our State of Michigan identification cards, informed the facility representative of the intent of our inspection and we were permitted onto the site. Once on site we met with Transmission and Storage Operations Manager for Gas T&S Milford, Chris D. Conley. Chris explained the facility's operations as well as the new construction. At the time of our inspection DTE was installing three of the five turbines, associated emergency generator and the auxiliary boilers. The ROP does allow for the installation of five turbines, but Chris indicated that DTE would install the additional turbines as needed, depending on how market demand changes. Chris estimated that DTE would know if they needed the additional turbines in the next 2-5 years. I made sure Chris was aware that general condition 2 of the permit requires that the facility begin installation of the equipment within 18 months of the permit issuance, or else the PTI for that equipment would be voided. After discussing the installation of the new equipment, I reviewed the relevant records required by the ROP for the existing equipment.

Chris provided us with both physical copies of the requested records and some electronic copies of records. We reviewed some of the records together, but I took the copies back to the office to evaluate them further. When we were done reviewing the records Chris showed both Robert and me the construction project, as well as the existing equipment.

Chris first showed us the natural gas emergency generator (EUOFFICEGENSET). This generator is used to provide backup electricity for both the garage and the office. The generator is relatively small and only provides emergency power for an office and small garage. I did not observe any stored fuel around the generator, and it appeared that it can only run on natural gas. This generator is restricted by EUOFFICEGENSET Material Limits to only use natural gas or propane. I observed a natural gas meter by the generator but I did not observe any other fuels stored nearby, Chris informed me that it can be used with propane as well.

Currently, the three turbines (EU-TURBINE1, EU-TURBINE2, EU-TURBINE3) were on site, but not fully assembled. The building that housed them was not fully complete, and there were active construction personnel working in the area. Ken expected the construction of the three turbines to be completed by mid-September of this year. He also stated that the equipment would likely not be used in September, but DTE will submit a notification when it begins operating.

After seeing the turbine project, we went and looked at the DeLeval engines. The DeLeval engines (FGDELAVALS) includes four individual compressor engines, each of which are 4,000 horsepower. The engines are natural gas fired and are required by the ROP to only use pipeline quality natural gas. The engines were subject to emission testing to determine the emission rates of NOx and CO. These results were later reviewed at the MDEQ office. We finished our inspection with a closing meeting. I informed Chris that I would write the report and communicate with him if I had any questions or concerns.

MI-ROP-B7221-2015b- Conditions and Requirements

EUWAUKESHA

The Waukesha generator is used to provide electricity to the compressor building in the event of a power outage. The generator does not have emission limits or material limits. The process and operational restriction section requires the equipment only burns natural gas. Chris informed me that the equipment is only designed to run on natural gas. It appears that the generator is only run using natural gas.

EUOFFICEGENSET

The office generator set is a small natural gas fired emergency generator. The generator is used to generate electricity for the office and garage in the case of an emergency. EUOFFICEGENSET does not have pollution control equipment or emission limits. Instead the emissions are limited by the material limits and the process and operational restrictions. EUOFFICEGENSET is subject to NSPS Subpart *JJJJ* for Spark Ignition Internal Combustion Engines.

Material limits require the facility to only use natural gas with the exception of the use of propane for up to 100 hours per year as an alternative fuel source during emergency situations. I visually observed the natural gas line that hooked up to the equipment. I did not observe a propane tank, or any other fuels in the area. Chris informed me that, as far as he was aware, they have never used propane with the generator, though they would like to have that as an option in the permit.

Process and operational restrictions limit the usage of the generator in nonemergency situations to 50 hours of usage per year in addition to routine testing and monitoring, maintenance checks, and required readiness testing. Total nonemergency use shall not exceed 100 hours per calendar year. There is no limit for emergency usage of the generator. Chris showed me the equipment's non-resettable hour meter. The meter showed a total of 115.5 hours of usage. The equipment had been used for a total of 12.6 hours last year. This is well below the permitted 50 hours per year. Chris indicated that the equipment is run one day, for approximately 20 minutes, once a week. This would appear to match the year's usage if the equipment was not used for an emergency situation.

FGDELAVALS

This flexible group permits four individual DeLaval compressor engines. The engines are 4,000 horsepower and are natural gas fired. These engines are exempt from complying with the requirements of 40 CFR Part 63 Subpart ZZZZ- National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines per 63.6590(b)(3)(i). The DeLaval engines are not equipped with pollution control equipment. The non-methane hydrocarbon, NOx and CO emissions from the equipment are restricted with emission limits and material limits. DTE is required to show compliance with the emission limits with testing once per ROP renewal cycle.

Emission limits and process and operational restrictions

Emission limits require DTE to limit the emissions from FGDELAVALS of non-methane hydrocarbons to 49 tons per year with a 12 month rolling time period. The records provided by Chris indicated that the highest 12 month rolling total for non-methane hydrocarbons for the past year and a half was 0.99 tons per 12 month rolling time period. This is significantly below the 49 ton permit restriction and appears to comply with the non-methane hydrocarbon limit. NOx is limited to 11.5 gm/hp hour at 100% speed and torque. The testing was conducted between 92% load and 95% load. The highest NOx emissions were from engine one (EU006). Engine one emitted 9.16 gm/hp hour. This is below the permit limit of 11.5 gm/hp hour. This emission rate was measured at 95.9% load. 95.9% of the emission limit is 11.03 gm/hp hour. The DeLaval engines appear to meet this limit.

CO is limited to 1.75 gm/HP-hour at 100% speed and torque. The testing was conducted between 92% load and 95% load. The highest CO emissions were also from EU006. EU006 emitted 1.37 gm/hp hour at 95.9% load. This is below the 1.75 gm/HP hour. 95.9% of the emission limit is 1.68 gm/hp hour. The DeLaval engines appear to meet this limit.

Material limits restrict FGDELAVALS to only use pipeline quality natural gas in the engines. I visually observed the natural gas intake, and it appears that DTE is meeting this requirement.

Testing and sampling

The ROP requires the DeLaval engines are tested once per ROP renewal cycle. The last testing was conducted on February 25 and April 13, 2011. The test results indicated that the engines are in compliance with the emission rates required in the emission limits table and DTE appears to meet this condition.

Monitoring and Recordkeeping

DTE is required to maintain records of fuel consumption and operating hours. Chris provided me with electronic copies. These records appeared to be compliant with the record keeping

requirements. I did not request records for the maintenance of the engines. I confirmed the facility is keeping records of the stack emissions, but I did not collect records.

FG-BOILERS

This flexible group permits existing boilers and process heaters at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. The facility's one Cleaver Brooks boiler with a capacity of 2.51 MMBtu/ Hour is permitted under this flexible group. The FG-BOILERS group has material restrictions and operational restrictions in order to limit the processes emissions.

The material limits section restricts the boilers to used only natural gas. Chris informed me that the boilers do not use any other fuels in the boilers. The permit also requires that the boiler must be tuned every 5 years. Chris showed me the operation/maintenance plan that requires the boiler be tuned at least every 5 years. I did not request maintenance records indicating the tune up dates. I was also informed that the boilers generally only run in the winter.

New process equipment

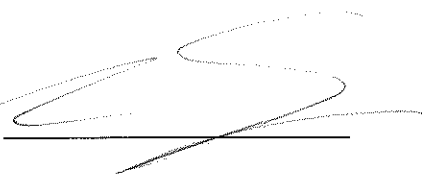
The new process equipment including FGTURBINES, FGAUXBOILERS, EUN_EM_GEN and FGAUXHEATING were not fully installed at the time of my inspection. I did not assess these requirements of the permit. These processes had commenced construction, but have not begun operation, and I did not expect records to be maintained until they began operational.

Conclusion

Based on the inspection and records review, DTE Gas Co. Milford Compressor Station appears to be in compliance with the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules and the conditions of MI-ROP-B7221-2015b.

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NAME



DATE

6/20/17

SUPERVISOR

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