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

B722149896

FACILITY: DTE Gas Company - Milford Compressor Station		**SRN / ID:** B7221
LOCATION: 3515 CHILDS LAKE RD., MILFORD		**DISTRICT:** Southeast Michigan
CITY: MILFORD		**COUNTY:** OAKLAND
CONTACT: Joe Kotwicki , Environmental Specialist		**ACTIVITY DATE:** 04/16/2019
STAFF: Shamim Ahammod	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Conducted a scheduled inspection of DTE Gas Company-Milford Compressor Station.		
RESOLVED COMPLAINTS:		

On Tuesday, April 16, 2019, Michigan Department of Environment, Great Lakes and Energy-Air Quality Division (EGLE-AQD) staff, I (Shamim Ahammod) conducted a scheduled inspection of DTE Gas Company-Milford Compressor Station located at 3515 Childs Lake Road, Milford, Michigan. The purpose of the inspection was to determine the company's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and the conditions of Permit to Install (PTI) No. 185-15A and Renewable Operating Permit (ROP) No. MI-ROP-B7221-2015b.

INSPECTION

I arrived at the facility at around 8:45 AM for stack test observation and the scheduled inspection. I entered the front office and signed in and identified myself to a member of the office staff. This staff member directed me to Mr. Chris Conley, Manager, Transmission & Storage Operations (TS&O). I introduced myself to Mr. Conley, showed him my credentials, provided him my visiting card and stated the purpose of the visit. I told Mr. Conley that I had two purposes of my visit, the first one was stack test observation and the second one was the field inspection of this facility. From 8:45 AM to 10:15 AM, I observed a fine particulate (PM_{10} and $PM_{2.5}$) emissions test on Turbine 2 (Turbine 2200). Stack test observation report has been posted in the Michigan Air Compliance and Enforcement System (MACES) (Report #http://www.deq.state.mi.us/aps/downloads/SRN/B7221/B7221_SAR_20181213.pdf).

At about 10.20 AM, DTE Staff Chris Conley, Dan Fulara, Joe Kotwicki, and Phillis A Rynne, and I, Shamim Ahammod (EGLE Staff) met at a DTE conference room and discussed the facility's operations and emissions units that are subject to the PTI No. 185-15A. After that, we visited the plant to see the overall operations and equipment at the facility. The DTE staff showed me the three natural gas-fired Compressor Turbines, one natural gas-fired generator, six (6) natural gas-fired boilers (FGBOILERS: EUAUXBOILER2A, EUAUXBOILER3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C), four (4) natural gas-fired space heaters, one (1) furnace, and one (1) water heater. EUTURBINE1and EUTURBINE2 were in operation and Turbine 3 was not in operation during my visit.

On June 21, 2019, at 2:30 PM, I inspected the facility again to evaluate the FGDELAVALS, FGCOLDCLEANERS, FGBOILERS, EUWAUKESHA, and EUOFFICEGENSET under ROP No. MI-ROP-B7221-201b.

SOURCE DESCRIPTION

DTE Energy-Milford compressor station is a booster station which compresses the natural gas and boosts the line pressure. The units receive the gas from the pipeline transmission system, compress the gas, and then discharge it to the pipeline transmission system at a higher pressure. When gas pressure increases, the temperature of the gas also increases. There are no gas storage

fields at the facility.

The facility has one PTI and one ROP. Under PTI No. 185-15A, the facility operates three natural gas-fired Compressor Turbines, one natural gas-fired generator, six (6) natural gas-fired boilers, four (4) natural gas-fired space heaters, one (1) furnace, and one (1) water heater.

Under ROP No. MI-ROP-B7221-2015b, the facility has four individual DeLaval Model HVA-12 natural gas-fired combustion engines, a Waukesha Model natural gas-fired emergency generator (EUBUWAUKESHA), a 450,000 BTU/hr natural gas-fired emergency generator (EUOFFICEGENSET) and a 2.1 MMBTU/Hour natural gas-fired boiler (EUCOMPBLDBLR). EUBUWAUKESHA is used to provide electricity to the compressor building in the event of a power outage, EUOFFICEGENSET is used to provide electricity to the office building and garage and EUCOMPBLDBLR is used to heat the compressor and auxiliary buildings.

The following table lists stationary emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the facility of the year of 2018.

Pollutant	Tons per year
Carbon Monoxide (CO)	37.826
Nitrogen Oxides (NOx)	221
Particulate Matter (PM)	1.25
Sulfur Dioxide (SO_2)	0.12
Volatile Organic Compounds (VOCs)	1.2

REGULATORY ANALYSIS & COMPLIANCE EVALUATION for PTI No. 185-15A

FGTURBINES

FGTURBINES consists of 10,504 hp rated five natural gas-fired combustion turbines (CT) units. Currently, the facility operates only three natural gas-fired CT units, i.e., EUTURBINE1, EUTURBINE2, and EUTURBINE3. These turbines started operating from October 2018. Each CT is equipped with dry ultra-low NOX burners and a combustion air inlet filter.

Emission Limits

Per SC I.1, SC I.3, SC I.4 and SC I.5, stack testing for the Oxides of Nitrogen (NOx), Carbon Monoxide (CO) and Particulate Matter (PM_{10} and $PM_{2.5}$) was conducted for the three new natural gas-fired turbines at DTE Energy-Milford Compressor Station during December 4-28, 2018, in accordance with PTI 185-15A and 40 CFR 60.4400 of 40 CFR Part 60 Subparts A and KKKK. On February 15, 2019, Air Quality Division's district office received the emission test reports. Based on the test report, the results of the emissions testing are given below:

Emission Unit	NOx (ppmvd@15% O_2)	CO (ppmvd@15% O_2)	PM_{10} (lb/MMBtu)	$PM_{2.5}$ (lb/MMBtu)
EUTURBINE1	8.1	1.7	0.085	0.085
EUTURBINE2	7.2	2.1	0.188	0.188
EUTURBIN3	2.8	1.6	0.010	0.010
Permit Limit	15	25	0.015	0.015

The results of the test indicated that PM_{10} and $PM_{2.5}$ emissions from EUTURBINE1 and EUTURBINE2 failed to meet the permitted limits. On April 10-16, 2019, the permittee reconducted the PM_{10} and $PM_{2.5}$ emissions tests on EUTURBINE1 and EUTURBINE2. They did not reconduct the PM_{10} and $PM_{2.5}$ emissions tests on EUTURBINE 3 because they met the emission limit at the first emission test. AQD received the emission test reports of PM_{10} and $PM_{2.5}$ emissions for EUTURBINE1 and EUTURBINE2 on May 02, 2019. Based on the test report, the results of the emissions testing are given below:

Emission Unit	PM_{10}/ $PM_{2.5}$ (lb/MMBtu)
EUTURBINE1	0.003
EUTURBINE2	0.003
Permit Limit	0.015

As required in SC I.6, Mr. Kotwicki provided me the records of monthly total CO_2e mass emissions for FGTURBINES for the period from October 2018 through March 2019 (attachment 1). Compliance will be determined when AQD will receive 12-month rolling period total CO_2e mass emissions for FGTURBINES.

Material Limits

Per SC II.1, the permittee shall burn only pipeline-quality natural gas in any unit in FGTURBINES. Per 40 CFR 72.2, in order for a gaseous fuel to qualify as natural gas, the fuel must either be ≥ 70% methane by volume or must have a gross calorific value (GCV) between 950 and 1100 BTU/SCF. I reviewed a record that indicates that natural gas consumes by FGTURBINES have a Total Heating Value per Cubic Foot of not less than 950 BTU nor more than 1100 BTU (DTE gas Tariff sheet, attachment 2).

As stated in SC II.2, the pipeline-quality natural gas shall not have a total sulfur content in excess of 5.0 grain of sulfur per 100 Standard Cubic Foot (SCF). I reviewed a record which indicates that natural gas consumes by FGTURBINES does not contain more than 5 grain of total Sulfur per 100 cubic feet (DTE Gas Tariff sheet, attachment 2).

Process/operational Restrictions

As specified in SC III.1, AQD received a Malfunction Abatement Plan (MAP) on October 22, 2018. Per SC III.4, the total startup events for FGTURBINES shall not exceed 500 startups per 12-month rolling time period as determined at the end of each calendar month. I received the following FGTURBINES monthly startup information from Ms. Rynne.

	EUTURBINE1/2100	EUTURBINE2/2200	EUTURBINE3/3100
Dec-18	4	2	1
Jan-19	1	1	0
Feb-19	0	0	0
Mar-19	1	1	1
Apr-19	0	1	0
May-19	1	0	4

Jun-19	5	2	2

This record is only for a few months. Based on this record FGTURBINES could be in compliance.

Design/Equipment parameters
Per SC IV.1, the maximum nominal rating of each unit in FGTURBINES shall not exceed 10,504 HP(ISO). I noted Turbine 2 was operating at 9705 HP (attachment 4.a). Per SC IV.3, the permittee calibrated flow meter device on June 7, 2016 (attachment 4.b)

Testing/Sampling
For SC V.1 requirements, see the FGTURBINES SC I.1 for more detail. Per SC V.2, according to the test report, NOx emissions did not exceed 75 percent of the NOx emission limit. Therefore, the permittee does not need to perform annual performance tests but need to conduct it in two years. For SC V.3 requirements, see the FGTURBINES SC I.5, SC I.3, and SC I.4 for more details.

Monitoring/ Recordkeeping
As required in SC VI.2, Mr. Kotwicki provided me the monthly record of the natural gas usage for FGTURBINES (attachment 1). As stated in SC VI.3, Mr. Kotwicki provided me the records of monthly total CO_2e mass emissions for FGTURBINES for the period from October 2018 through March 2019, which is also required by SC I.6. This document is attached to this inspection report (attachment 1). FGTURBINES started operating from October 2018. For the SC VI.4 requirements, see the FGTURBINES SC III.4 for more details.

Reporting
As required in SC VIII. 1, the permittee submitted an initial notification to AQD district office after completion of the installation of the three Turbines. Turbine 1, 2 and 3 installations completed on August 3, 2018, August 7, 2018, and July 25, 2018, respectively.

Stack/vent restrictions
Based on my observations, the exhaust stacks appeared vertical and unobstructed.

Other requirements
FGTURBINES is subject to 40 CFR Part 60 Subparts A & KKKK. Per 40 CFR 60.4400 of 40 CFR Part 60 Subpart A and KKKK, stack testing for the Oxides of Nitrogen (NOx) was conducted for the three new natural gas-fired turbines at DTE Energy-Milford Compressor Station during December 4-28, 2018. According to the test report, NOx emission did not exceed 75 percent of the NOx emission limit. Therefore, the permittee does not need to perform annual performance tests.

FGTURBINES is subject to 40 CFR Part 63 Subparts A and YYYY. Per 40 CFR 63.9(b), the permittee is required to submit only initial notification. The permittee submitted an initial notification to the AQD district office after completion of the installation of the three Turbines specifying the date of installation.

EUN_EM_GEN
Under PTI No. 185-15A, the facility operates an 1818 HP natural gas-fueled emergency generator

to provide electrical power to the station and support equipment in the event power outage. The emergency engine is subject to the Standards of Performance for stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subparts A and JJJJ. EUN_EM_GEN construction started on May 25, 2017, and operation started on June 2018.

Emission Limits
Per SC I.2, SC I.6, SC I.8 and 40 CFR 60.4233(e) of 40 CFR Part 60, Subparts A and JJJJ, the permittee conducted an emission test on the emergency generator for the Oxides of Nitrogen (NOx), Carbon Monoxide (CO) and Volatile Organic Carbon (VOC) on September 26, 2018. Air Quality Division's District Office received the emission test reports on February 15, 2019. Based on the test report, the results of the emissions testing are given below:

	SC I.2	SC I.1	SC I.6		SC I.8
Emission Unit	Oxides of Nitrogen (ppmvd@15% O_2)	Oxides of Nitrogen (lb/hr)	CO (ppmvd@15% O_2)	CO (lb/hr)	*NMNE Organic Compounds (ppmvd@15% O_2)
EUN_EM_GEN	69.3	0.86	242	1.91	ND
Permit Limit	160	4.0	540	11.0	86
*NMNE-Non-methane Non-ethane					

The results of the test indicated that NO_x and CO emissions for EUN_EM_GEN met the permit limits. As specified in SC I.7, GHGs as CO_2e emissions limit for an emergency generator (EUN_EM_GEN) for the 12-month rolling period is 247 TPY. Based on the record (attachment 5), provided by Mr. Kotwicki, GHGs as CO_2e emission from the emergency generator was 9.3 Tons for the 12-month rolling period of July 2018 through June 2019.

Material Limits
Per SC II.1, the permittee shall burn only pipeline-quality natural gas in EUN_EM_GEN. Per 40 CFR 72.2, in order for a gaseous fuel to qualify as natural gas, the fuel must either be ≥ 70% methane by volume or must have a gross calorific value (GCV) between 950 and 1100 BTU/SCF. As required in SC II.1, Mr. Kotwicki provided a copy of 'Gas engine site-specific technical data' via email (attachment 6) which shows that the percentage of methane is 84.7 by volume. So, the permittee satisfies the conditions that require an engine's fuel type is natural gas.

Process/Operational restrictions
As required in SC III.1, the permittee shall not operate EUN_EM_GEN for more than 205 hours per year on a 12-month rolling time period. Mr. Kotwicki provided me a record (attachment 5) which indicates that the operation time of the emergency generator was 95 hours for the 12-month rolling period from July 2018 through June 2019. Per SC III.5 and 40 CFR Part 60 Subpart JJJJ, the permittee follows the manufacturer (CAT) recommendations for the maintenance plan for EUN_EM_GEN according to Mr. Kotwicki.

Design/Equipment Parameters
Per SC IV.1, a non-resettable hours meter was observed during the inspection and it indicates

that the total operation time of the emergency generator was 68 hours until April 16, 2019. As required in SC IV.2, I verified the generator nameplate and rated power which was 1300 KW. As required in SC IV.3, the permitted provided the record of fuel usage for EUN_EM_GEN from June 2018 through March 2019 (Attachment-5).

Testing/Sampling
The emergency generator is not certified. EUN_EM_GEN was started operating from June 2018. Per SC V.1.a, the permittee is required to conduct an initial performance test within 60 days but no later than 180 days after initial startup of EUN_EM_GEN. Within the timeframe, permittee conducted an emission test on the emergency generator for the Oxides of Nitrogen (NOx), Carbon Monoxide (CO) and Volatile Organic Carbon (VOC) on September 26, 2018. Air Quality Division's District Office received the emission test reports on February 15, 2019.

Monitoring/recordkeeping
Per SC VI.2.b, the engine is not certified. The permittee conducted an emission test on the emergency generator on September 26, 2018.

SC VI.6, Mr. Kotwicki provided me a copy of the natural gas usage from June 2018 through July 2019 for the EUN_EM_GEN on a monthly basis (attachment 5).

Per SC VI.8, the permittee provided the record of monthly and 12-month rolling total CO_2 e mass emissions for EUN_EM_GEN from June 2018 through July 2019 (Attachment 5).

Reporting
As required in SC VII.1, within 30 days, the permittee notified AQD District Office that the construction of the emergency generator (EUN_EM_GEN) was started on May 25, 2017.
As specified in SC VII.2, "the permittee shall submit a notification specifying whether EUN_EM_GEN will be operated in a certified or a non-certified manner to the AQD District Supervisor, in writing, within 30 days following the initial startup of EUN_EM_GEN and within 30 days of switching the manner of operation.

The emergency engine (EUN_EM_GEN) started operation on June 2018. AQD district office received the notification that EUN_EM_GEN will be operated as a non-certified emergency generator on May 9, 2019, via email. The permittee did not submit a notification specifying whether EUN_EM_GEN will be operated in a certified or a non-certified manner to the AQD District Supervisor, in writing, within 30 days following the initial startup of EUN_EM_GEN. This is a deviation of EUN_EM_GEN SC VII.2 of PTI No.185-15A. At this time, a notice of violation will not be sent to the facility for not complying with EUN_EM_GEN SC VII.2.

As required in SC VII.3. a through e., the permittee submitted emergency engine initial notification to the AQD district office.

Per SC VII.4 and 40 CFR 63.6645(f) of 40 CFR Part 63 Subparts A and ZZZZ-NESHAP for RICE ENGINE), the permittee submitted an initial notification for EUN_EM_GEN including the information in 40 CFR 63.9(b)(i)-(v) on June 14, 2019.

Per 40 CFR 63.9(2), the notification should be submitted no later than 120 days after the effective date of the relevant standard (or within 120 calendar days after the source becomes subject to the relevant standard). At this time, a notice of violation will not be sent to the facility for not complying with EUN_EM_GEN SC VII.4.

Other requirements

Per SC IX.1, and 40 CFR 60.4233(e) of 40 CFR Part 60, Subparts A and JJJJ, the permittee conducted an emission test on the emergency generator for the Oxides of Nitrogen (NOx), Carbon Monoxide (CO) and Volatile Organic Carbon (VOC) on September 26, 2018. Air Quality Division's District Office received the emission test reports on February 15, 2019.

SC IX.1, and 40 CFR 60.4245(a) of 40 CFR Part 60, Subparts A and JJJJ, and SC VII.3, the permittee keeps of record of all notifications that submitted to AQD.

In compliance with SC IX.2, 40 CFR 63.6645(f) of 40 CFR Part 63 Subparts A and ZZZZ-NESHAP for RICE ENGINE), the permittee submitted an initial notification for EUN_EM_GEN including the information in 40 CFR 63.9(b)(i)-(v).

FGAUXBOILERS

Under PTI No. 185-15A, the permittee operates four natural gas-fired auxiliary boilers (EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, and EUAUXBOIL3B) to provide heat in buildings in the winter and two natural gas-fired boilers (EUAUXBOIL2C and EUAUXBOIL3C) to heat fuel gas for the station and support equipment.

Emission Limits/Design/Equipment Parameters
As specified in SC I.2, the permittee is required to show compliance with SC VI.4.c and IV.1.

Per SC IV.1 and SC VI.4.c. Mr. Kotwicki provided me "Technical data Sheet-Benchmark 750-600 boilers" via email (attachment 8). After reviewing this document, it appears the maximum heat input capacity for EUAUXBOILER2A, EUAUXBOILER3A, EUAUXBOILER2B, EUAUXBOILER3B is 3 MMBTU/hour and maximum heat input capacity for EUAUXBOILER2C, EUAUXBOILER3C is 1 MMBTU/hr that met the permit requirements. As required in SC IV.3, the permittee records the natural gas flowrate for FGAUXBOILERS on a continuous basis (attachment 7).

Monitoring/recordkeeping
As required in SCVI.2, Mr. Kotwicki provided me a copy of the natural gas usage rate for FXAUXBOILERS from October 2018 through March 2019 on a monthly basis (attachment 9). According to the SC VI.3, I received a record of the total CO2e mass emissions from FGAUXBOILERS on a monthly basis (attachment 9).

Reporting
As required in SC VII.1, the permittee submitted a notification to the AQD district after installation of FGAUXBOILERS within 30 days limit.

Other Requirements
SC IX.1, the permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and DDDDD, as they apply to each unit in FGAUXBOILERS. (40 CFR Part 63 Subparts A & DDDDD).

SC IX.1, and 40 CFR 63.7500(e), the permittee must complete a tune-up every 5 years for boilers/process heaters less than or equal to 5 million BTU per hour. FGBOILERS were installed in 2018 according to Mr. Kotwicki. They did not complete the tune-up for boilers yet. They need

to complete the tune-up for boilers by 2022.

FGNEWNGBOILERMACT

Initial Notification of Startup for FGNEWNGBOILERMACT and notification of completion of installation for FGNEWNGBOILERMACT, per the requirement of PTI #185-15A, was submitted to AQD district office on time. FGAUXBOILERS were installed on January 17, 2018. FGNEWNGBOILERMACT - Actual Start-Up Date was January 19, 2018. The AQD received this notification on February 1, 2018.

Process/Operational Restrictions

Per SC III.3. (a), the permittee must complete a tune-up every 5 years for boilers/process heaters less than or equal to 5 million BTU per hour. FGBOILERS were installed in 2018 according to Mr. Kotwicki. They did not complete the tune-up for boilers yet. They need to complete the tune-up for boilers by 2022.

Other requirements

As specified in SC IX.5, the permittee must demonstrate continuous compliance with the work practice standards in Table 3 of 40 CFR part 63, Subpart DDDDD that applies according to the methods specified in paragraph (a)(10) through (13) of 40 CFR 63.7540. Per SC III. (a), 40 CFR 63.7500(e) and 40 CFR 63.7515 (d), the permittee must complete a tune-up every 5 years for boilers/process heaters less than or equal to 5 million BTU per hour. FGBOILERS were installed in 2018 according to Mr. Kotwicki. They did not complete the tune-up for boilers yet. They need to complete the tune-up for boilers in 5 years by 2022.

FGAUXHEATING

I observed four heaters and one water heater at the time of inspection. As required in SC VI.1, the permittee shall keep manufacturer documentation showing the maximum heat input for each unit in FGAUXHEATING. Mr. Kotwicki provided a copy of manufacturer documentation via email (attachment 8).

REGULATORY ANALYSIS & COMPLIANCE EVALUATION
for
ROP No.: MI-ROP-B7221-2015b

Under ROP No. MI-ROP-B7221-2015b, the facility operates four individual DeLaval Model HVA-12 Compressor engines, one Waukesha brand natural gas-fired generator and one 450,000 BTU/hour natural gas-fired emergency generator, and one 2.51 MMBTU/hour natural gas-fired boiler.

EUWAUKESHA

An existing Waukesha brand 750 HP (410 KW) rated natural gas-fired emergency generator is used to supply electricity to the compressor building during power outage. This engine is exempt from 40 CFR part 63 Subpart ZZZZ per 63.6590(b)(3)(i), "Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions."

EUOFFICEGENSET

A 60 HP (45KW) rated the natural gas-fired emergency engine is used in emergencies to generate electricity for the office and the garage. This engine is subject to the New Source Performance

Standard for Spark Ignition Internal Combustion Engines promulgated in 40 CFR 60 Subpart JJJJ.

Material Limits
I reviewed their fuel usage record it appears that the permittee used natural gas as fuel from January 2018 through May 2019 (attachment 10).

Process/operational restrictions
Per SC III.2 (Process/operational restrictions), the permittee operated the emergency engine for nonemergency situations for 19.4 hours in 2018 which was below the limit of 100 hours per the calendar year (attachment 10).

Design/equipment parameters
Per SC IV.1, a non-resettable hour's meter was observed during the inspection and it indicates that the total operation time of the emergency generator was 298.6 hours as of June 21, 2019.

Monitoring/recordkeeping
As required in SC VI.1 and SCVI.2, Mr. Kotwicki sent me the record the type and amount of fuel used in the emergency engine from January 2018 through May 2019. These records are attached to this report (attachment-10). The total operation time of the emergency engine was 19.4 hours. On March 6, 2018, the emergency engine was used for power outage for a ½ hour.

Other requirements
As specified in SC IX.1, and 40 CFR 60, Subpart JJJJ, I reviewed the emergency generator's records for the fuel usage restriction and emergency/non-emergency operation hours. I observed that the permittee installed a non-resettable hour meter in an emergency generator.

FGDELAVALS

The facility operates four 4000 HP DeLaval Model natural gas-fired combustion engines i.e., EU006 (Engine#501), EU007 (Engine#502), EU008(Engine#503), and EU009 (Engine#504). The main purpose of the engines is to compress the gas and boost the pipeline pressure.
These engines are exempt from 40 CFR Part 63 Subpart ZZZZ per 63.6590(b)(3)(i), "Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions."

Emission Limits
Per SC I.1, Non-methane Hydrocarbons limit is 49 TPY.

Pollutant	Emissions	Limit		Compliance
Non-methane Hydrocarbons	0.77 TPY	49 TPY	For all engines for the 12-month rolling period from June 2018 through May 2019 (attachment-12).	Yes

Material Limit
Per SC II.1, the permittee shall only fire pipeline-quality natural gas in the engines. Per 40 CFR 72.2, in order for a gaseous fuel to qualify as natural gas, the fuel must either be ≥ 70% methane by volume or must have a gross calorific value (GCV) between 950 and 1100 BTU/SCF. As required in SC II.1, Mr. Kotwicki provided a copy of 'Gas engine site-specific technical data' via

email (attachment 6) which shows that the percentage of methane is 84.7 by volume. So, the permittee satisfies the conditions that require an engine's fuel type is natural gas.

Testing/sampling
Per SC V.2, emission testing was performed on units 501-504 on February 23-April 13, 2011. The results of these emission tests are given below:

	Load (%)	Oxides of Nitrogen (gr/B-HP	Carbon Monoxide (gr/B-HP)	NMOC (lb/hr)
EU006 (Engine#501)	95.9	9.16	1.37	<0.05
EU007 (Engine#502)	93.8	7.55	0.79	Not detected
EU008(Engine#503)	94.3	1.24	1.14	<0.003
EU009 (Engine#504)	92.7	7.68	0.66	0.10
Permit limit	>90.0	11.5	1.75	11.19

As specified in SC V.2, the permittee is required to conduct emission testing for non-methane hydrocarbons, nitrogen oxides, and carbon monoxide on each engine once per ROP renew cycle. The current ROP permit (ROP No. MI-ROP-B7221-201b) was renewed on August 20, 2015 and will expire on August 20, 2020. The permittee needs to conduct emission testing again on each engine by August 20, 2020.

Monitoring/recordkeeping
Per SC VI.1 and SC VI.II (monitoring and record-keeping), I received the record of the fuel consumptions and the operating hours for each engine on a monthly basis from January 2018 through April 2019 from Mr. Kotwicki via email (attachment 11). As specified in SC VI.3, I checked the records of dates/schedules and type/nature of repairs and maintenance conducted on the engines for the last five years. As stated in SC VI.4, the facility used stack test emissions factors to calculate the nitrogen oxides and carbon monoxide emissions for each engine in 2018 and attached the record to the MAERS report. The most recent stack test was conducted on February 23-April 13, 2011.

Stack/Vent restrictions
It appears that the exhaust gases from the stacks discharged unobstructed vertically upwards to the ambient air.

Other requirements
As required in SC IX.1, the permittee uses four 4000 HP DeLaval natural gas-fired combustion engines in FGDELAVALS. As specified in SC IX.3, and Per 40 CFR 52.21, the facility is subject to Prevention of Significant Deterioration (PSD) because it has the potential to emit (PTE) greater than 250 tons of nitrogen oxides per year. The facility has an existing Federal PSD permit (EPA-5-A-79-32) which was issued on September 28, 1979. To meet PSD, a Best Available Control Technology (BACT) analysis was required for nitrogen oxides (NOx) and carbon monoxide (CO) emissions. The EPA emission Offset Interpretative Ruling dated January 16,

1979, allowed for an exemption to the provisions of the offset ruling if the allowable nonmethane hydrocarbon emissions did not exceed 50 tons per year. Therefore, PSD permit EPA-5-A-79-32 was issued with 49 tons per year maximum allowable emission limit on nonmethane hydrocarbons to keep the facility from being subject to the offset ruling. The facility emitted 0.77 ton of NMHC for the last 12-month rolling period from June 2018 through May 2019 from four engines (attachment-12).

FG-BOILERS

The only emission unit within FGBOILERS is EUCOMPBLDGBLR. The purpose of this boiler is to heat to the compressor and auxiliary buildings at the location. EUCOMPBLDGBLR is subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated in 40 CFR Part 63, Subparts A and DDDDD.

Process/operational restrictions

As required in SC III.4.a, the permittee must complete a tune-up every 5 years for boilers/process heaters less than or equal to 5 million BTU per hour. According to the DTE records, an initial tune-up for the FGBOILERS was completed on November 6, 2015 (attachment-13). The next tune-up is not due until December 2020 and has not been completed yet.

Other requirement

As required in SC IX.1 and 40 CFR 63 subpart DDDDD, an inspection of the boiler components was completed on November 6, 2015 (attachment-13).

Per SC IX.4 and 40 CFR 63.7540(a), the permittee inspected the burner, monitored the air-to-fuel ratio and checked the flame pattern, flame dimension, and flame conditions. According to their records, it appears that CO emission was optimized and measured the concentrations in the effluent stream of CO in part per million, by volume and oxygen in volume percent (attachment-13).

FG-RULE 285 (mm)

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 285 (mm). As required in SC VII.4 and SC VII.6, according to Mr. Kotwicki, the facility vented 7.5 MMSCF at 12:00 AM on March 15, 2018. They notified Joyce Zhu, District Supervisor, and Kerry Kelly, District Inspector via email at 5:52 PM on March 15, 2018, and called PEAS (Pollution Emergency Alert System) at 5:55 PM on March 15, 2018.

FG-COLDCLEANERS

There are 2 cold cleaners at Milford Compressor station. As specified in SC IV.1.a and 2, both cold cleaners have an air/vapor interface of not more than ten square feet and are equipped with a device for draining parts. As required in SC IV.3, lids to the cold cleaners were closed at the time of inspection.

Conclusion

Based on the on-site inspection, review of records and discussion with facility staff, DTE Energy-Milford Compressor Station is in compliance with the requirements of PTI No. 185-15A and ROP No. MI-ROP-B7221-201b.

NAME [signature] DATE 8/14/19 SUPERVISOR SK