

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Stack Test Observation**

B722147632

FACILITY: DTE Gas Company - 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 Operations		ACTIVITY DATE: 12/13/2018
STAFF: Shamim Ahammod	COMPLIANCE STATUS: Unknown	SOURCE CLASS: MAJOR
SUBJECT: Conducted an inspection at DTE Gas Company-Milford Compressor Station. Compliance with the requirements of PTI No. 185-15A will be determined during a review of the stack test report.		
RESOLVED COMPLAINTS:		

On Thursday, December 13, 2018, at about 9:30 AM, I (Shamim Ahammod), Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) staff, conducted an inspection at DTE Gas Company-Milford Compressor Station located at 3515 Childs Lake Road, Milford, Michigan. The purpose of the inspection was to witness the stack test for one of the natural gas-fired combustion turbine (EUTURBINE2) at this facility. PTI No. 185-15A and 40 CFR Part 60 Subpart KKKK- (Standards of Performance for Stationary Gas Turbines) require this testing. Turbines 1-3 were installed on October 29, 2018.

As specified in Special Condition (SC) V.1, within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup, the permittee shall verify NOx emission rates from each unit in FGTURBINES, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR 60.4400 of 40 CFR Part 60 Subparts A and KKKK.

Per SC VI.3, within 180 days after commencement of initial startup, the permittee shall verify PM10, PM2.5, and CO emission rates from each unit in FGTURBINES at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. The permittee shall complete the required testing once every five years of operation, thereafter.

I arrived at the facility at around 9:30 AM. I met with Mr. Jason Logan, Environmental Specialist, EM & R Field Service, DTE Energy, and Mr. Chris D. Conley, Manager, Transmission & Storage Operations, Milford, DTE Energy. I introduced myself, provided credentials and stated the purpose of the inspection.

Testing Plan and Approval:

On August 15, 2018, MDEQ-AQD-Technical program Unit (TPU) received testing plan for PTI No. 185-15A compliance emissions testing of the three compressor turbines (EUTURBINE1-3) for PM_{2.5}, carbon monoxides (CO), and oxides of nitrogen (NOx) emissions from the Environmental Management & Resources (EMR) Field Services Group of DTE Energy Corporate Services, LLC. The turbines are located at the DTE Gas Milford Compressor Station in Milford, Michigan. MDEQ-AQD approved the testing plan on October 19, 2018. In the beginning, the testing schedule for Milford Compressor Station-EUTURBINES 1-3 was as follows: October 29 through November 9, 2018. However, testing schedule was changed later and notified MDEQ-AQD via email. The updated tentative schedule for testing is as follows: December 3 through December 19, 2018.

According to DTE Energy-EM&R Test Plan, the PM emission testing will be conducted using a combined USEPA Methods 5 and 202 for filterable PM and condensable PM. The filterable PM and condensable PM will be combined to represent PM_{2.5} and PM₁₀. Test consisted of triplicate 120-minute runs. ALL particulate collected will be categorize as PM_{2.5}.

Per DTE Energy-EM&R Test Plan, NOX and CO emissions testing will be performed at three operating modes via triplicate 20-minute test runs. Testing will be performed utilizing USEPA method 7E and 10, respectively.

SOURCE DESCRIPTION:

MDEQ-AQD issued a Permit to Install (PTI) No. 185-15A for five-natural gas-fired combustion turbine to drive compressors that will be used transport natural gas through the pipeline. Each compressor turbine

is equipped with dry ultra-low NOx burners and a combustion air inlet filter. Among them, so far three turbines (EUTURBINE1, EUTURBINE 2 and EUTURBINE3) were installed according to Mr. Chris D. Conley.

STACK TEST OBSERVATION:

At the time of inspection, the PM emission testing was conducted for Turbine 2 (EUTURBINE2). I did not observe any visible emissions from the stack of Turbine 2. The readings for Turbine 2, I observed are listed in the table below:

First emission test run started at 9:17 AM:

Operating Parameters	Time		
	11:16 AM	11:47 AM	12:01 PM
Discharge pressure (psig)	838	836	836
Discharge Temperature (F)	73	71.8	71.4
Fuel Flow (scfh)	59864	59437	59095
Gas producer Speed, Ngp (%)	97.8	97.79	97.78
Horse Power (hp)	4886	4942	4929

Second emission test run started at 13:01 PM:

Operating Parameters	Time		
	1:53 PM	2:15 PM	2:34 PM
Discharge pressure (psig)	835	838	839
Discharge Temperature (F)	71.1	71	70.7
Fuel Flow (scfh)	58410	58838	58325
Gas producer Speed, Ngp (%)	97.8	97.81	97.81
Horse Power (hp)	4855	4871	4849

I observed first and second run of PM emission test only. After collecting PM samples, EM&R Field Services will send the samples to the laboratory. The facility is required to submit a complete report of the test results to the AQD-TPU and AQD-District Office within 60 days following the last date of the test.

DTE Gas Company -Milford Compressor Station's compliance with the requirements of PTI No. 185-15A and 40 CFR Part 60 Subpart KKKK-(Standards of Performance for Stationary Gas Turbines) of EUTURBINE1, EUTURBINE2 and EUTURBINE3 will be determined during a review of the stack test report.

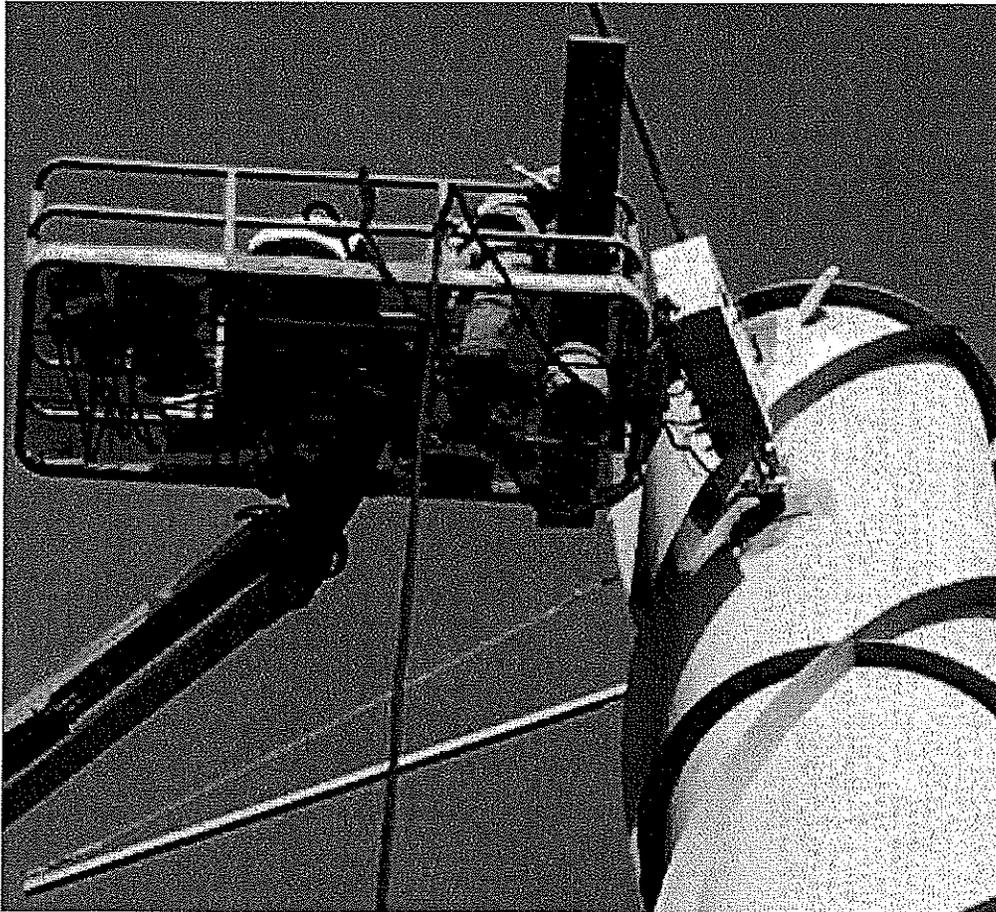
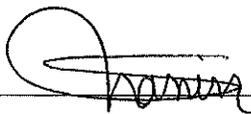


Image 1(Stack test) : PM emission testing was conducting for Turbine 2 (EUTURBINE2) at DTE Gas Company-Milford Compressor Station

NAME 

DATE 01.24.2019

SUPERVISOR SK