

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

N673152665

FACILITY: CMS Generation Kalamazoo River Generating Station		SRN / ID: N6731
LOCATION: 6900 EAST MICHIGAN AVENUE, COMSTOCK TWP		DISTRICT: Kalamazoo
CITY: COMSTOCK TWP		COUNTY: KALAMAZOO
CONTACT: Timothy Morrison , Plant operator		ACTIVITY DATE: 02/25/2020
STAFF: Monica Brothers	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Announced Scheduled Inspection		
RESOLVED COMPLAINTS:		

This was an announced scheduled inspection to make sure that someone would be at the facility. I emailed Tim Morrison, the Plant Operator, a couple of days before I wanted to do the inspection on February 25, 2020, and he said that he would be able to be there. I arrived at the facility at 9:40 am. I briefly described the inspection process to Tim, and then we looked at records before taking a tour of the facility. The turbine was not running during the time of the inspection.

EUCOMBTURB01: The turbine is a GE Frame 7E Combustion Turbine with low NOx combustors that is capable of firing only natural gas. It is rated at 86 MW (1,200 MMBTU/hr). Records show that the unit has been fired for a total of 105.8 hours so far in 2020 and has generated a total of 7292.4 Mwhrs. In 2019 they ran for 951.2hours and generated 60,658 Mwhrs. The last time the turbine ran was on February 20, 2020 for a 7.4-hour dispatch.

In 2018, a new PTI 8-18 was approved for the facility, which allowed them to make upgrades to the generator and increase the heat input rating of the turbine. This upgrade was considered a "modification" under 40 CFR 60.2 and therefore made the turbine subject to 40 CFR, Part 60, Subpart KKKK instead of Subpart GG. The requirements of PTI 8-18 have since been rolled into their ROP.

The facility does not yet have a CEMs or PEMs to monitor emissions. The facility would like to use a PEMs but are awaiting EPA approval to use this in lieu of a CEMs. Based on their current capacity factor, they are not yet required to have a CEMs, however, they do plan to run more often in the future, which may increase their capacity factor to above the threshold. Per 40 CFR, Part 75, Appendix E, the capacity factor must be below 10% on a 3-year average, and below 20% for any given calendar year, or the company must install a NOx CEMS on the turbine. Currently, the capacity factor is at 7.6% for 2019, with a 3.2% three-year average. Currently, they are using a data acquisition system (DAS) and stack testing results to calculate their emissions. This is allowed under 40 CFR, Part 75, Appendix E.

Under 40 CFR, Part 60, Subpart KKKK, they have a NOx limit of 15 ppm at 15% O₂ on a 4-unit operating hour rolling average, or 96 ppm at 15% O₂ while operating at less than 75% of peak load or at temperatures of less than 0°F. Stack testing results from November 6, 2019 testing showed that they are in compliance with this limit.

The facility also has a NOx limit of 72.9 pph on a 24-unit operating hour rolling average. Their records show that they are in compliance with this limit, with 40 lbs NOx/hr being the highest value recorded since 2018. Records also show that they are also in compliance with the 224 tpy on a 12-month rolling timescale NOx limit. According to their records, the highest NOx tpy value for 2019 was 18.36 tpy in December of 2019. They are also limited to operating no more than 6,145 hours per year on a 12-month rolling timescale. Their records show that they operated for 945.91 hours/year for the month of December, which was the highest value for 2019.

I also viewed records for their SO₂ emissions. They are required to stay below 0.060 lb/MMBtu heat input on an hourly basis. The facility shows compliance with this limit by maintaining monitoring data and test reports, analyzing the sulfur content of the natural gas they combust, and by keeping records of natural gas usage and gross energy output on an hourly basis. I viewed records of their annual gas sampling analysis reports done by DTE Energy for November 06, 2019, June 26, 2019, November 1, 2018, July 12, 2018, and July 7, 2017. The November 2019 report showed that the gas was 89.996 MOL% Methane and contained 0.107 gr S/100 cu.ft. and 0.0003% sulfur by weight. The limit is 2.4 g sulfur/100 cubic feet. The gross heating value was 1068 and 1074 BTU/dscf. In addition to the annual gas analysis requirement, they are required to determine the gross caloric value (GCV)/heating value every month. These values need to be between 950-1100 BTU/scf. I observed these values for each month from January 2018

through January 2020. The lowest value was 1033 BTU/scf, and the highest value was 1058 BTU/scf. Consumers Energy calibrates the gas flow meter about twice per year. The inputs for the Data Acquisition System (DAS) get updated as soon as the company receives the annual results from the gas sampling analysis. The capacity factor gets computed weekly. Natural gas usage is monitored and recorded continuously.

I also examined the Electronic Data Reporting (EDR) reports for all of 2018 and 2019. These reports contain the SO₂, CO₂, and NO_x emissions. For 2019, emissions were 0.2 tons SO₂, 43,963.7 tons CO₂, and 18.4 tons NO_x. For 2018, emissions were 0.0 tons SO₂, 7,990.6 tons CO₂, and 3.0 tons NO_x.

This facility also has Acid Rain (AR)/CSAPR permits that require them to keep track of their credit balances and allowances deducted for each year. These records are attached. The designated representatives are Jimmy Chong and Thomas Andreski.

Tim then took me to see the facility and the turbine. The turbine itself was not running during the inspection. Tim explained how the turbine worked and showed me the associated equipment on-site, including the turbine's generator, the water wash system, and the control room.

I thanked Tim and left the facility at about 1:00 pm. CMS Generation-Kalamazoo River Generating Station seemed to be in compliance with its permit requirements at the time of this inspection.

NAME 

DATE 3/4/2020

SUPERVISOR RIL 3/5/20