

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N673173128

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: 08/07/2024
STAFF: Michael Cox	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Announced Inspection		
RESOLVED COMPLAINTS:		

At approximately 8:30 A.M. on August 7, 2024, Air Quality Division (AQD) staff Michael Cox (MTC) conducted an announced on-site inspection of CMS Generation-Kalamazoo River Generating Station (N6731) located at 6900 East Michigan Avenue, Comstock, Michigan. This was an announced inspection to ensure facility staff would be on-site. The purpose of this inspection was to determine compliance with the facility's renewable operating permit (ROP) MI-ROP-N6731-2021. Prior to arriving on site, MTC observed the perimeter of the facility for any visible emissions and odors. No odors or visible emissions were noted on-site. Accompanying AQD staff on the inspection was Mr. Tim Morrison, Plant Manager, who answered site specific questions and provided records during the inspection.

Facility Description

CMS Generation-Kalamazoo River Generating Station (CMS) operates one General Electric Frame 7E combustion turbine rated for 86 MW of electricity. The turbine operates on an as needed basis to supply power to the grid. Approximately 1-3 employees are on site during operating times.

Regulatory Analysis

CMS is a major source for nitrogen oxides (NO_x), carbon monoxide (CO) and Green House Gases (GHGs) and is a minor source of hazardous air pollutants (HAPs), volatile organic compounds (VOCs), lead (Pb), sulfur oxides (SO_x), and particulate matter (PM). CMS is currently operating under MI-ROP-N6731-2021. The facility is subject to, New Source Performance Standards (NSPS) 40 CFR 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines, 40 CFR 97 Subpart AAAAA - Cross-State Air Pollution Rule (CSAPR) NO_x Annual Trading Program, 40 CFR 97 Subpart GGGGG - CSAPR NO_x Ozone Season Group 3 Trading Program, 40 CFR 97 Subpart CCCCC - CSAPR SO₂ Group 1 Trading Program, and a Phase II Acid Rain Permit No. MI-AR-55101-2021.

EUCOMBTURB01:

This emission unit consists of a GE Frame 7E Combustion Turbine with low NOx combustors that is capable of firing only natural gas. The turbine is rated at 86 Mw (1,200 MMBTU/hr).

The facility has a NOx emission limit of 72.9 pph on a 24-unit operating hour rolling average. Their most recent stack test conducted on September 21, 2023, shows that they are in compliance with this limit, with 27.06 lbs NOx/hr being the reported value.

The facility has a NOx emission limit of 224 tons per year (tpy) on a 12-month rolling basis. Records were reviewed for the time period of January 2022 through July 2024. According to their records, the highest 12-consecutive month NOx emissions occurred during the 12-month rolling time period ending in October 2023 when 54.35 tpy of NOx was emitted. The facility is also limited to operating no more than 6,145 hours per year on a 12-month rolling timescale. Their records indicate that the highest 12-consecutive month operating hours occurred during the 12-month rolling time period ending in February 2024 when the turbine operated for 3,016.32 hours.

Under 40 CFR, Part 60, Subpart KKKK, CMS has a NOx emission 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 September 21, 2023, demonstrated that they are in compliance with these limits.

I also reviewed records of the facility's SO₂ emissions for the time period of January 2022 through July 2024. The facility is 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 August 11, 2022, September 9, 2022, April 29, 2023, September 1, 2023, and July 3, 2024. Under 40 CFR 60 Subpart KKK the limit is 2.4 g sulfur/100 cubic feet. The analyses demonstrated that the natural gas is below the specified limit. CMS is also required to determine the gross caloric value (GCV)/heating value every month. These values need to be between 950-1100 BTU/scf. The lowest value observed during the records review was 1045 BTU/scf, and the highest value was 1075 BTU/scf. 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 calendar years 2022 through Quarter 2 of 2024. These reports contain the SO₂, CO₂, and NOx emissions. So far during the 2024 calendar year, the facility's reported emissions were 0.3 tons SO₂, 67,883.5 tons CO₂, and 15.8 tons NOx. Records of Megawatt hours was reviewed for the time period of January 2022 through July 2024. From the records the highest MW generated from the turbine was a total of 188,264 Mwhrs during the 2023 calendar year.

The facility would like to use a Predictive Emission Monitoring System (PEMs) but are awaiting EPA approval to use this in lieu of a CEMs. The facility petitioned the EPA for PEMs approval on April 24, 2024, after five years of gathering data. The PEMs was noted to be installed and operating on site, but to show compliance with state and federal air pollution control rules and regulations, the facility is currently

using DAS and stack testing results to calculate their emissions. This is allowed under 40 CFR, Part 75, Appendix E.

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. The designated representatives are Jimmy Chong and Thomas D. Wiegman.

.Compliance Determination

Based on the observations made during the inspection and review of the required records and reports, CMS Generation-Kalamazoo River Generating Station appears to be in compliance with MI-ROP-N6731-2021 as well as all other State and Federal Air Pollution rules and regulations.

NAME 

DATE 8/15/2024

SUPERVISOR 