

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

N711334434

FACILITY: Michigan Public Power Agency		SRN / ID: N7113
LOCATION: 1750 Prough Road SW, KALKASKA		DISTRICT: Cadillac
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT: Doug IZARD, Instrument & Control Technician		ACTIVITY DATE: 05/06/2016
STAFF: Shane Nixon	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On site inspection and records review.		
RESOLVED COMPLAINTS:		

AQD staff traveled to Michigan Public Power Agency's (MPPA) Kalkaska CT #1 Generating Station in Kalkaska County to perform an inspection. The purpose of the inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-N7113-2011 and 40 CFR 60 Subpart GG (Federal Standards of Performance for New Stationary Sources – Stationary Gas Turbines). The facility is subject to the ROP because it is subject to the Acid Rain requirements of 40 CFR Part 72. Mr. Doug IZARD, MPPA, accompanied AQD staff during the inspection.

The facility consists of one Pratt and Whitney FT-8 Twin Pac turbine set consisting of two combustion turbines fired by natural gas and utilizes water injection and low-NOx burners to control emissions of nitrogen oxides. It is considered a peaking plant, meaning that it operates mostly for short periods of peak load when demand for electricity is high. AQD staff normally perform unannounced inspections; however, based upon the uncertainty of operation, staff requested notification from MPPA when the facility would be operating to be able to perform an inspection while the turbines were operating. The facility was operating on the day of the inspection because Wolverine Power scheduled a dispatch of the facility to provide Energy System Support during a period of transmission line work. Only one turbine was operating at the time of the inspection.

EMISSION LIMITS

NOx emissions for each turbine are limited to 25 ppmv (average of all hours in an operating day) and combined NOx emissions are limited to 34.6 tons per year, based 12 month rolling time period. Stack testing is the method used for demonstrating compliance with the ppmv limit and the most recent testing was performed in 2012. Test results from 2012 indicate emissions from Turbines 1 and 2 are 17.3 ppmv and 18.2 ppmv, respectively. Records (attached) submitted by MPPA indicate compliance with the ton per year limit in which the NOx highest emissions, occurring in April 2106, was 16.8 tons per 12 month rolling time period.

Visible emissions from the turbines are limited to 10% opacity and the method of compliance is USEPA Method 9 observations conducted on a quarterly basis. Records (attached) submitted indicate the six-minute average of all quarterly visible emission observations were 0% opacity.

MATERIAL LIMITS

Natural gas usage is limited to 595.6 million cubic feet per 12 month rolling time period. Records indicate the highest 12 month rolling time period gas usage, occurring in April 2106, was 5,040,162 cubic feet.

The facility is limited to burning only pipeline quality natural gas which is defined in the ROP as containing 0.5 grains or less of total sulfur per 100 standard cubic feet, composed of at least 70% methane and/or have a gross calorific value of between 950 and 1,100 Btu per standard cubic foot. Lab analytical results submitted by MPPA (attached) indicate the fuel is in compliance with this material limit.

PROCESS/OPERATIONAL RESTRICTIONS

A turbine is required to be expediently shutdown if it is not operating within the water-to-fuel ratio

established during stack testing, with the exception of startup and shutdown. Records submitted by MPPA indicates the turbines operated within the water-to-fuel ratio for the respective turbine loads.

DESIGN/EQUIPMENT PARAMETERS

AQD staff observed that natural gas usage monitors and water injection system monitors were installed at the time of the inspection.

TESTING/SAMPLING

As mentioned previously, NOx emission testing was performed in 2012 and demonstrated compliance with the ppmv emission limit and quarterly visible emissions observations were conducted.

MONITORING/RECORDKEEPING

Daily, monthly, and 12-month rolling time period calculations, operating load, fuel consumption, and water-to-fuel ratio records were available for AQD staff to review (attached). As mentioned previously, natural gas usage and water-to-fuel ratios of each turbine are monitored and recorded per the ROP.

REPORTING

AQD staff observed during a file review that semiannual deviation reports and annual certifications of compliance were submitted in a timely fashion and previously reviewed. Records of excess emissions are required to be submitted within the same timeframes as the semiannual deviations and annual certifications. MPPA discovered in an internal audit performed in 2016 that an excess emission report due in 2015 was not submitted. Corrective action taken by MPPA was submitting the excess emission report and amending the 2015 annual certification of compliance for 2015 noting the deviation. Based upon AQD file review, all excess emission reports are accounted for and there have been no excess emissions in 2014 and 2015.

STACK/VENT RESTRICTIONS

The stacks associated with the turbines appeared to be constructed in accordance with the parameters listed in the ROP.

OTHER REQUIREMENTS

A high level citation stating the facility must comply with all applicable provisions of 40 CFR 60 Subpart GG is listed in the ROP. Based upon the site inspection and records review, AQD staff has determined the facility to be in compliance with the regulation.

A determination of compliance of the federal Acid Rain permit pursuant to 40 CFR Part 72, incorporated into the ROP as Appendix 9, was not performed as AQD does not have delegated authority to enforce the regulation and Acid Rain permit.

Per the requirements of the ROP, an on-site parameter monitoring plan and startup, shutdown, and malfunction plan describe proper operating of NOx emission control and procedures to be followed in the event of a startup, shutdown, or malfunction. These plans have been followed by facility staff as demonstrated by the fact that there were no excess emissions in 2014 and 2015.

CONCLUSION

Based upon the on-site inspection and records review AQD staff considers the MPPA Kalkaska CT #1 Generating Station in compliance with ROP No. MI-ROP-N7113-2012 and 40 CFR 60 Subpart GG.

NAME Shane Wilson

DATE 5/27/16

SUPERVISOR 