

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

B542153235

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| FACILITY: Wolverine Power Supply Cooperative | | SRN / ID: B5421 |
| LOCATION: 3150 143rd Avenue, DORR | | DISTRICT: Kalamazoo |
| CITY: DORR | | COUNTY: ALLEGAN |
| CONTACT: Randy Boyles , Chief Operator - Burnips Generating Plant | | ACTIVITY DATE: 03/13/2020 |
| STAFF: Cody Yazzie | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT |
| SUBJECT: Scheduled Inspection | | |
| RESOLVED COMPLAINTS: | | |

On March 13, 2020 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 3150 143rd Avenue, Dorr, Michigan at 10:30 AM to conduct an unannounced air quality inspection of Wolverine Power – Vandyke Generating Plant (hereafter WP). Staff made initial contact with Russell Fein, WP, Maintenance Operator and stated the purpose of the visit. Randy Boyles is often the onsite environmental contact but was not onsite during the visit. Laura Hoisington is an Environmental Specialist for WP and works out of Cadillac, Michigan. Ms. Hoisington is an environmental contact that can assist in the recordkeeping for WP.

This facility is currently operated on a standby basis. It currently has two staff members that usually work one 7am-3pm shift Monday through Friday. This facility produces electrical power that is generated from a natural gas-fired 24.8 megawatt simple cycle turbine (EUTURBINE02) installed in 2001. EUTURBINE02 has a 386 horsepower diesel startup engine (EUSTARTER_ENGINE) that runs for around 15 minutes when EUTURBINE02 is starting up. In 2019 the facility has made EUTURBINE01 inoperable and started the process of removing the turbine, because the facility was removing EUTURBINE01 the Potential to Emit of the facility was going to be restricted to less than 100 Tons per year. This caused the facility to submit an ROP void request. This ROP void request removed the facility from the ROP requirements and let WP operate under the Source Wide PTI permit MI-PTI-B5421-2014. WP is no longer considered a major source and is operating as an Opt-Out Source.

WP was last inspected by the AQD on June 19, 2018 and was determined that the facility appeared to be in Compliance at that time with MI-ROP-B5421-201. Staff asked, and Mr. Fein stated that the facility does not have any emergency generators or cold cleaners at the facility.

Mr. Fein gave staff a tour of the facility. Required personal protective equipment are steel toe boots, safety glasses, and a hard hat. Staff observations and review of records provided during and following the inspection are summarized below:

EUTURBINE01:

This emission unit is in process of being removed from the facility. On June 11th 2019 Mr. Dan Calverley notified the Kalamazoo District Office know that as of June 1, 2019 EUTURBINE01 would never run again. Mr. Calverley further described what has been done to EUTURBINE01 to deem the turbine inoperable. Mr. Calverley stated in the June 11th notice that the facility had de-energized and cut the cables to EUTURBINE01's transformer, disconnected the service at the river pumps which is used to feed the cooling water, and bleed and blocked the natural gas line that feeds EUTURBINE01. During the inspection the facility was still in the process of removing the turbine. EUTURBINE01's outer shell was removed exposing all the internal parts. Mr. Fein explained that WP was going to use the removal and deconstruction as a training exercise for the employees. Staff was able to see the cut and flanged off natural gas line that feed the turbine. Mr. Fein indicated that the facility anticipates that the unit would be disassembled and fully removed by the end of summer.

EUTURBINE02:

The facility refers to this turbine as unit #8. This turbine is subject to the federal requirements of 40 CFR 60, Subparts A and GG. The removal of the ROP requirements and issuance of the Source Wide PTI that the facility now operates under largely reverted the Special Conditions that reflected the original PTI No. 296-00 in the Source Wide PTI No. MI-PTI-B5421-2014.

The most recent stack test was preformed on August 24, 2017. This stack test measured the NOx emissions and

derived them into three different units of measure. The NOx emission rates that were determined from the test were 105.2 ppmv, 0.374 lbs NOx/MMBTU, and 125.3 lbs NOx/hr. These all comply with the limits in the ROP special conditions (1.1-3).

Special Condition VI.1 requires that the facility monitor and record the amount of natural gas combusted in EUTURBINE02 during each calendar month. The facility must then use the Higher Heating Value of the natural gas to determine the actual monthly heat input to the turbine. The facility uses a measured 2004 lab result of 1,030 BTU's per cubic foot of natural gas as the Higher Heating Value to determine the monthly required Heat Input in EUTURBINE02. Since January 2019 the largest natural gas usage for a single month was 12,882,000 cubic feet. This occurred in July of 2019 and resulted in Heat Input Value of 13,268 MMBTU.

On a monthly basis WP is required to multiply the actual heat input to the turbine with the applicable emission limit derived from the last compliance test. The emission factor used by the facility was measured during the August 24, 2017 Stack Test. During this Stack Test the measured NOx emission per MMBTU were 0.374 lbs of NOx/MMBTU. The largest monthly emissions since January 2019 were calculated to be 2.48 Tons of NOx in a single calendar month.

Special Condition VI.1 also requires that WP calculate and maintain NOx emission records as determined on a 12-month rolling time period. The facility is keeping an accurate 12-month rolling NOx emission calculation. In the reviewed time period starting in January 2019 the facility's largest 12-month rolling NOx emission rate was calculated to be 6.29 TPY occurring in October 2019. This is well below the permitted 35 TPY permitted limit.

As a part of being subject to NSPS GG the facility is required to meet the requirements of the fuel monitoring program outline in Appendix 2 of MI-PTI-B5421-2014. Currently the facility is testing the natural gas for sulfur content semiannually during the first and third quarters. The previous two test were conducted in July 9, 2019 and March 4, 2019. In both tests the sulfur content of the natural gas measured non-detect on a detection limit of 1.0 ppmw. The facility appears to be in compliance with the 0.8 percent by weight (8000 ppmw) limit that is required by NSPS GG 60.333(b).

During the inspection EUTURBINE02 was not in operation but staff did look and walk around the unit. Staff asked Mr. Fein when the most recent operation of EUTURBINE02 was. Staff was shown records that the facility most recently operated EUTURBINE02 on January 31, 2020 where it operated for 3.7 hours and used 1099 MCF of natural gas.

EUSTARTER ENGINE:

This starter engine is operated for about 15 minutes to start EUTURBINE02. This engine is subject to the federal requirements of 40 CFR 63, Subparts A and ZZZZ. WP has the fuel in this analyzed for sulfur content annually. It was last tested on December 30, 2019 and had 12 ppm of sulfur. This is less than the 0.05% by weight that is required. The facility is also keeping records of maintenance done on the engine. Records shown that the most recent maintenance was conducted on April 26, 2019. Maintenance includes the inspection of the air cleaner, hoses, and belts. The last oil changed is documented as being don on April 18, 2017.

EUSTARTER_ENGINE is equipped with a non-resettable hour meter. The facility is recording the hours and reason that the unit is operated are being recorded. During the inspection the hour meter read 31.6 hours.

BOILER:

This facility has a 1 MMBTU/hour natural gas fired boiler that is used for space heating. This appears to be exempt under Rule 282(2)(b)(i).

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in compliance with MI-PTI-B5421-2014. Staff stated to Mr. Fein that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 11:45 AM.-CJY

NAME Cody Young

DATE 4/15/20

SUPERVISOR RIL 4/20/2020