

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

Rex ✓

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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		
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	ACTIVITY DATE: 06/19/2018
SUBJECT:		SOURCE CLASS: MAJOR
RESOLVED COMPLAINTS:		

On June 19th Air Quality Division (AQD) staff (Cody Yazzie and Rex Lane) arrived at 3150 143rd Avenue, Dorr, Michigan at 2:05 PM to conduct an unannounced air quality inspection of Wolverine Power Supply Cooperative (hereafter Wolverine). Staff made initial contact with Randy Boyles, Wolverine, Chief Operator and Russell Fein, Wolverine, Maintenance Operator and provided them with a business card and stated the purpose of the visit. Mr. Boyles took staff to a conference room for further discussions.

This facility is currently operated on a standby basis. It currently has three staff members that usually work one 7am-5pm shift Monday through Friday. This facility produces electrical power that is generated from a 23 megawatt natural gas-fired combined cycle turbine (EUTURBINE01) installed in 1967, and 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.

Wolverine was last inspected by the AQD on April 29, 2016 and was determined to be in compliance at that time with MI-ROP-B5421-2014. Staff asked, and Mr. Boyles stated that the facility does not have any emergency generators or cold cleaners.

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

EUTURBINE01:

The facility refers to this turbine as unit #6. The unit has two boilers associated with it a low pressure and a high pressure boiler. The capacity rating of the low pressure boiler is 92,160 lbs of steam/hour and the high pressure boiler is 79,000 lbs of steam/hour. These correspond to a capacity rating of around 112 MMBTU/hour and 95 MMBTU/hour respectively. These boilers are apart of the heat recovery steam generator (HRSG) system for the turbine. This HRSG system is recovering heat produced by the turbine to produce steam to drive the combined steam turbine. This HRSG system allows for the turbine to be more fuel efficient.

This turbine has no emission limits or testing requirements. Wolverine is tracking monthly natural gas usage as required by the permit. Staff did see this unit on the walkthrough of the facility, but it was not in operation.

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. This turbine is required to conduct a stack test to

determine NOx emission rates (ppmv, lbs/hr, and lb/MMBTU) at least once during the term of the ROP. Wolverine had record that the stack test took place on August 24, 2017. 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 (I.1-3). Wolverine is also tracking hours of operation, Natural Gas usage, and heat input to the unit. Wolverine uses their heat input to the turbine and the 0.374 lbs NOx/MMBTU emission rate to calculate the monthly NOx emissions. These monthly NOx emissions are then used to calculate a 12-month rolling average. In the past 1.5 years the highest yearly rolling average NOx emissions were 11.69 tons per year, which is around 33.4% of their permit limit. In addition to the 12-month rolling average Wolverine is calculating the NOx emissions in lbs/hour based on operation time of the unit.

The facility has a startup, shutdown, and malfunction log that records details on of the operation of EUTURBINE02. Wolverine has the natural gas tested for sulfur content in the 1st and 3rd Quarters of the year. The last test was March 27, 2018. This is in compliance with he NSPS GG fuel monitoring program. Staff did see this unit on the walkthrough of the facility, but it was not in operation.

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. Wolverine has the fuel analyzed for sulfur content annually. It was last tested on February 6, 2018 and had 13 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. Maintenance includes the annual oil filter change and inspection of the air cleaner, hoses, and belts. Hours and reason that the unit is operated are being recorded as well.

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). Wolverine had certified the boiler on April 13, 2017. The certificate was displayed on the boiler.

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-ROP-B5421-2014. Staff stated to Mr. Boyles that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 3:45 PM. -CJY

NAME Cody Yozzo

DATE 6/27/18

SUPERVISOR MQ 6/27/2018