

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

P058247971

FACILITY: Wolverine Power Supply Co-op - Alpine Power Plant		SRN / ID: P0582
LOCATION: 7432 M-32 Highway, ELMIRA		DISTRICT: Gaylord
CITY: ELMIRA		COUNTY: OTSEGO
CONTACT: Laura Hoisington , Environmental Specialist		ACTIVITY DATE: 02/21/2019
STAFF: Bill Rogers	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection and records review.		
RESOLVED COMPLAINTS:		

On February 21, 2019 I inspected the Alpine Power Plant. Mr. Jesse Genter, Chief Operator, showed me around and printed out a daily report for me. Ms. Laura Housington has assisted in providing the records as required under the Alpine Power Plant's Permit to Install, PI 206-14.

I did not find any violations of the permit or of Air Quality rules during my inspection.

This facility is a major source. I have drafted a Renewable Operating Permit for it, but this is still under review. Therefore the facility continues to operate under its Permit to Install. Certification reports and other ROP reports which would be required under the ROP do not yet apply.

INSPECTION AND RECORD REVIEW

Table EU-EMERGEN, diesel powered emergency generator:

The generator, according to its nameplate, is a Model SR-5, Serial No. 61W02158. The engine is a Model 3512C, Serial 3689723.

Condition II.1 essentially requires ultra low sulfur diesel fuel for this engine. This is defined as 15 ppm sulfur by weight or less. Mr. Genter showed me fuel specifications for their most recent purchase of diesel fuel. It lists sulfur content as 8.4 ppm by weight. This complies with the permit condition.

Condition III.1 limits operation to 100 hours per year on a 12 month rolling time period basis. The hour meter records show the engine has run 17 hours total, in about two years. This complies with the permit condition.

Conditions III.3 and 4 require proper maintenance on the engine. Mr. Genter showed me a copy of their service contract with Michigan Cat. This included the items I remember as required for proper maintenance; inspection of belts and hoses, a general inspection, and an oil change. He says they perform all maintenance recommended by the manufacturer. The oil change is almost due; it is scheduled for March.

Condition 3 applies if the engine is certified, 4 applies if it is non-certified. This is a certified engine, so Condition 3 applies. A copy of the engine certification was obtained for a previous inspection.

Condition IV.1 requires a non-resettable hour meter. The meter is in place as required by permit.

Condition IV.2 limits nameplate electrical capacity to 1500 kW or less. Specifications on the engine nameplate list capacity as 1500 kW. This complies with the permit requirement.

Condition V.1 requires an initial performance test if the engine is not certified by the manufacturer. Since the engine is certified by the manufacturer, this condition does not apply.

Condition VI.2 requires either test data or an engine certification document to be kept. The company is keeping an engine certification document. This complies with the permit condition.

Condition VI.3 requires keeping a record of hours of operation on a monthly and 12 month basis. Hours of operation are being kept in the facility logbook. In addition, hours of operation are listed on a Monthly Emission Calculation Report, attached.

Condition VI.4 requires (diesel) fuel supplier certification records or fuel sample test data for each delivery of diesel fuel. Mr. Genter showed me fuel certification records from the supplier. The records match the specifications for ultra low sulfur fuel. This complies with Condition VI.4.

Condition VIII.1 requires a stack with a maximum diameter of 12 inches at a minimum elevation of 14 feet. When I inspected the facility the stack appeared to meet these requirements, in compliance with the permit.

EU-FIREPUMP, diesel-powered emergency fire pump.

In general the conditions for EU-FIREPUMP are the same as for EU-EMERGEN above. A manufacturer's certification document for this diesel engine was obtained in a previous inspection. It uses the same fuel the emergency generator does..

According to its required non-resettable hour meter, the fire pump engine has operated 56 hours total.

Condition VIII.1 requires a stack with a maximum diameter of 8 inches at a minimum elevation of 16 feet. When I inspected the facility the stack appeared to meet these requirements, in compliance with the permit.

FG-CTG, two 203-MW natural gas fired simple cycle combustion turbines driving electrical generators.

Condition I.5 limits NOx emissions to 224 tons per 12 month rolling time period. According to an attached emission summary, in 8 months of operation the two units have emitted 64.1 tons NOx. This is on course to comply with the permit condition.

Condition I.10 limits CO emissions to 246 tons per 12 month rolling time period. According to an attached emission summary, the highest 12 month rolling total was recorded in November 2017 at 138.93 tons. This complies with the permit condition.

Condition II.1 requires burning only natural gas. There are no liquid fuel tanks on site large enough to drive the turbines, and no other source of any sort of gaseous fuel.

Condition II.2 limits gas use to 14,567 MMSCF per 12 month rolling time period. According to emissions calculation records, attached, the highest recent gas consumption was November 2917 at 8.396 MMSCF as a 12 month rolling total. This complies with the permit condition.

Condition II.3 limits fuel to potential sulfur emissions of no more than 0.60 pounds per million BTU heat input. According to gas analysis data provided for a previous inspection, total sulfides in the pipeline quality natural gas as burned in this facility are about 1 ppm. According to a conversion estimate I found online, sulfur in pounds per million BTU are about 1/599 the PPM of sulfur in the fuel gas. Assuming this is correct the gas being burned would produce approximately 0.0017 pounds SO2 per million BTU. This complies with the permit condition.

Condition III.1 requires a Malfunction Abatement Plan. The company submitted a MAP. AQD approved the plan November 22, 2016.

Condition III.2 requires a Startup, Shutdown, and Malfunction Plan. The company submitted one April 11, 2016. AQD approved it May 3, 2016.

Condition IV.1 requires a maximum rating of 2.045 MMBTU/hour for the two turbine generators. According to the permit application the engines installed comply with this permit condition.

Condition IV.2 requires low-NOX burners. According to the permit application these were installed as part of the turbines, although there is no way to check this during a field inspection.

Condition IV.3 requires devices to monitor fuel gas flow to both turbines. Readouts for these devices are included in the computer control readout for EU-CTG1 and EU-CTG2, which implies that the devices exist. Fuel consumption data is included on the attached emissions report, so fuel consumption must be being recorded.

Condition IV.4 requires a device to monitor and record gross energy output from the generators. This information is included on the computer readout for EU-CTG1 and EU-CTG2, which implies that the devices exist. Energy output data is included on the attached emissions report, so energy output must be being recorded.

Condition VI.2 requires daily, monthly and 12 month NOx and CO emissions records. This information is included in the emission data report, attached.

Condition VI.3 requires recording startup and shutdown events. This information is included in the emission data report, attached.

Condition VI.4 requires recording fuel consumption. This information is included in the emission data report, attached.

Condition VIII.1 and 2 require stacks for the turbines to be at most 264 inches in diameter at a minimum height of 85 feet above ground. The stacks appear to meet these requirements.

FG-FUELHTR: Two 3.5MMBTU/hr fuel heaters

Condition I.1 limits the two fuel heaters to 3.7 tons per 12 month rolling time period of NOx. According to a monthly rolling emissions report, attached, emissions for a 12 month rolling time period are running at under 1 ton. This complies with the permit limit.

Condition I.2 limits the two fuel heaters to 2.8 tons per 12 month rolling time period of CO. According to a monthly rolling emissions report, attached, emissions for a 12 month rolling time period are running about 0.5-0.6 tons. This complies with the permit limit.

Condition II.1 requires only natural gas fuel to the fuel heaters. I didn't see any liquid fuel tanks associated with them. There is no source of gaseous fuel on site other than natural gas.

Condition II.2 limits natural gas fuel use to 29.9 MMSCF per 12 month rolling time period. According to an emissions report, attached, the fuel heaters use 6 to 7 MMSCF per 12 month rolling time period, or less. This complies with the permit condition.

Condition VI.2 requires monthly and 12 month rolling NOx and CO emission records for each heater. This information is included on an attached rolling monthly emissions report.

Condition VI.3 requires monthly and 12 month rolling fuel consumption records. Monthly and 12 month records are included on the attached monthly emission report. This complies with the permit condition.

Condition VIII.1 and 2 set stack dimensions for the fuel heaters as a maximum diameter of 10 inches at a minimum elevation of 16 feet above ground level. The stacks appeared to meet these requirements.

Comments:

The facility is new. Maintenance is good.

NAME William J Rogers

DATE 2/28/2019

SUPERVISOR SN

