

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

P058238497

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:		ACTIVITY DATE: 01/27/2017
STAFF: Bill Rogers	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Full Compliance Evaluation, Site Inspection, Records Review		
RESOLVED COMPLAINTS:		

On January 27, 2017, I inspected the Alpine Power Plant. On January 31 Laura Hoisington of Wolverine Power sent me records required by the Alpine Power Plant's Permit to Install, PI 206-14. This report covers my inspection and review of those records to determine compliance with the Permit.

**VIOLATIONS:**

I found violations associated with diesel fuel for the fire pump and emergency generator. It appears that the fuel purchased so far does not meet the permit requirements for ultra low sulfur diesel fuel. Recordkeeping for fuel specifications is not adequate. These are relatively minor violations. If they are corrected from here forward, I will use enforcement discretion and not start a formal enforcement action over them.

Monthly gas consumption in the fuel heaters is recorded. 12 month total gas consumption is not. 12 month total gas consumption is required by the permit, so this is a violation. The 12 month total is easily obtained, so I will use enforcement discretion and not start a formal enforcement action over this issue. However, I will inform the operator about it.

**INSPECTION AND RECORD REVIEW**

This facility is a major source. It will be under a Renewable Operating Permit eventually. We have not yet received a ROP application. The plant is new enough that the ROP application is not due yet.

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. A receipt for the fuel purchased is attached. It specifies the fuel as low sulfur off-road diesel fuel. Specifications I found online for low sulfur diesel fuel do not meet the standards specified in Condition II.1. Assuming this information is correct, this is a violation of Condition II.1.

Specifically, Condition II.1 specifies diesel fuel with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. Based on information I found online, a Cetane index of 40 or more is standard for diesel fuel, so it is likely the Low Sulfur No. 2 Diesel purchased for this engine meets that requirement. However, the standard for Low Sulfur Diesel Fuel is 0.05% sulfur by weight. This is higher than allowed by Condition II.1. The 0.0015 percent by weight specified in Condition II.1 aligns with the specifications for ultra-low sulfur fuel, not low sulfur fuel.

Condition III.1 limits operation to 100 hours per year on a 12 month rolling time period basis. The facility has been operating for several months. According to the engine hour meter, the engine has operated 6.2 hours total. The facility has not operated 12 months yet, but assuming the generator continued to operate at the rate it has so far, it would comply with this permit limit.

Conditions III.3 and 4 require proper maintenance on the engine. It has not been here long enough to require much or any maintenance. (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 is attached.)

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. A copy of a photo of the engine nameplate is attached.

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. A copy of this document is attached. This complies with the permit condition.

Condition VI.3 requires keeping a record of hours of operation on a monthly and 12 month basis. The facility has not operated for 12 months yet but 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. The records supplied for diesel fuel purchases are a receipt for dyed, off road "low sulfur No. 2 diesel." There is no certification of fuel properties and no test data. This is a violation of 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 is attached. Where EU-EMERGEN is in compliance with permit conditions, EU-FIREPUMP is also in compliance. The same possible violations for excess sulfur in the diesel fuel and missing certifications or test data for the diesel fuel also apply to EU-FIREPUMP.

According to its required non-resettable hour meter, the fire pump engine has operated 5.6 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, in 8 months of operation the two units have emitted 92.3 tons CO. This is on course to comply 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, in 7 months the facility burned 3,629 MSCF = 3.629 MMSCF. The facility has not operated for 12 months yet, but the fuel consumption is on target to comply 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, attached, total sulfides in the gas 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 8 months of operation are 0.39 tons. This is on course to comply with the permit condition.

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 8 months of operation are 0.30 tons. This is on course to comply with the permit condition.

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 used 5.2 MMSCF in 8 months of operation so far. This is on course to comply 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 records are included on the attached monthly emission report. I could not find 12 month rolling totals. I will use enforcement discretion and not start a formal enforcement action over this, as the 12 month total is easily obtained. However, I will mention this lack to the operators.


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 L.

DATE 2/2/2017

SUPERVISOR 

10/10/10

10/10/10