

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

B293440516

FACILITY: Palisades Nuclear Plant		SRN / ID: B2934
LOCATION: 27780 Blue Star Memorial Hwy., COVERT		DISTRICT: Kalamazoo
CITY: COVERT		COUNTY: VAN BUREN
CONTACT: Steve Andrews , Environmental Coordinator		ACTIVITY DATE: 06/22/2017
STAFF: Amanda Chapel	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On June 22, 2017, AQD's Amanda Chapel and Melissa Byrnes (staff) conducted an announced inspection of Palisades Nuclear Plant (facility) located in Covert, Van Buren County. The purpose of the inspection was to determine compliance with Renewable Operating Permit (ROP) MI-ROP-B2934-2013a and all applicable state and federal air regulations. The following will summarize plant operations and facility's compliance status.

We arrived at the facility at 9:25am. We were met by Mr. Steven Andrews and he helped facilitate progress through security. We got through security at 9:50am and proceeded to Mr. Andrews' desk. The facility employs about 600 staff and operates 24 hours a day 7 days a week. It commenced operations in 1974. We first reviewed records and then went on a plant tour to observe the equipment detailed in the ROP.

EUOFFICEBLR:

This is the most frequently used boiler, as it heats the main office. The tank's fuel comes from tank 10Alpha (10A). This tank fills most of the equipment on site. It has ultralow sulfur fuel which is sampled twice a year. It was sampled on 6/1/16 and 1/3/17. Analysis shows that the sulfur content is 8mg/kg or 0.0008% Sulfur. The boiler was run for 1755 hours so far this year and has used 17,550 gallons of fuel. There is no limit on use of this boiler in the permit. EUOFFICEBLR is in compliance with all requirements.

EUGEN3:

Emergency Generator #3 was installed in 2006. In 2016, it was run a total of 10 hours and so far in 2017, it has been run a total 3 hours. The largest 12-month rolling hours of operation was in November 2016 which was 12.1 hours. This meets the requirement of not operating more than 1,100 hours per year on a 12-month rolling time period.

EUGEN3 has a dedicated fuel tank (T-1001) and only runs on diesel. The electricity produced from this generator is not sold to a utility power distribution system. The nameplate capacity on the generator is 1,825 kW and 2,876 hp as certified by the manufacturer. The hours meter reads 298 hours and it is non-resettable. This satisfies the design/equipment parameters found within the ROP.

Records of maintenance are kept electronic work orders. Mr. Andrews provided them via email for each of the diesel generators at the facility. The records contain an activity description, run duration if the generator is run during the maintenance, the start and end date and time, and if the task was completed. These records identify testing as well. A quarterly PM, load test was performed March 2, 2017 and June 7, 2017. This satisfies the monitoring/recordkeeping requirement in the ROP.

EU-SECURITYGEN:

This 5.9 MMBtu/hr generator was installed in July 2011. Mr. Andrews provided the EPA certification for the generator as well as generator data, performance data, and spec sheet via email. The engine is filled by a separate tank other than 10A and T-1001. The sulfur content was last tested in April 2017 and the sulfur content of the fuel was 10ppm, which is below the permit limit of 15 ppm.

EU-SECURITYGEN meets the definition of an emergency engine under 40 CFR Part 60 Subpart IIII. There is a non-resettable hours meter on the engine. At the time of the inspection, the hours meter read 204.3 total run hours. Records showed that the engine had been run a total of 7.98 hours in 2017 so far and used 341 gallons of fuel. The longest run was 2.4 hours with no emergency runs in 2017. The records show the date and time of startup, hours of operation, and total running hours. The reason for all running in 2017 was testing.

Records of maintenance are kept electronic work orders. Mr. Andrews provided them via email for each of the diesel generators at the facility. The records contain an activity description, run duration if the generator is run during the maintenance, the start and end date and time, and if the task was completed. The last monthly startup test was performed on June 8, 2017.

FGBOILERS:

This flexible group includes EUEVAPBOILER and EUPLANTHEATER. Both of these boilers have heat input capacities of 23.3 MMBtu/hr and are run on fuel oil. Both boilers get their fuel from tank 10A. The sulfur content in tank 10A is 0.0008% sulfur, which satisfies the material limit for FGBOILERS in the ROP. Records are kept for FGBOILERS of the monthly and total fuel usage. In 2017, the total fuel usage was 15,300 gallons. This is abnormally high due to the refueling of the nuclear core which occurred between May and June 2017.

The boilers are checked daily for visible emissions (VEs). Mr. Andrews provided an example of the boiler check from June 26, 2017 as well as the stack inspection procedures. If the boilers are not in operation, they are logged as NIS or not in service. If the emissions from the boilers are grey or black for more than 2 hours, then the environmental coordinator is notified and corrective action is taken. The stacks appear to discharge vertically upwards. Based on review, it appears that FGBOILERS are in compliance with the ROP.

FGGENS1&2:

This flexible group includes EUGEN1 and EUGEN2 which are emergency generators that fire fuel oil and have a heat input capacity of 21.8 MMBtu/hr. FGGENS1&2 also get their fuel oil from tank 10A whose sulfur content is 0.0008%, below the permit requirement of 1.5% sulfur. Records are kept monthly and yearly for fuel oil usage. Gen1 has used 7,136 gallons of fuel and Gen2 has used 3,347 gallons of fuel in 2017.

Visible emission readings are done weekly while the engines are in operation. No readings were done where the emissions were determined to be grey or black. According to the procedural section of the operating plan, emissions of light grey are considered normal on startup and if they are maintained for more than 2 hours, then the preventative maintenance plan will be implemented. The facility appears to be in compliance with all permit conditions for FGGENS1&2.

FGEMERG-EXRICE:

This flexible group includes EUGEN1, EUGEN2, EUGENK-5, EUGENK-10, EUGENK-1A, and EUGENK-1B. EUGEN1 and EUGEN2 are described above. EUGENK-5 and EUGENK-10 are emergency fire pumps with 175 bhp and are diesel fueled. EUGENK-1A and EUGENK-1B are emergency air compressors with 10 bhp and are gas fired. The air compressors use 2 cups of fuel at a time. Records are kept when the air compressors are refueled.

EUGENK-5 and -10 also use fuel from tank 10A which has a sulfur content of 0.0008% determined by testing. In 2017, pump K-5 has run for 4.4 hours using 52.8 gallons of fuel and pump K-10 has run for 4.1 hours using 49.2 gallons of fuel. Records are also kept for monthly hours and fuel usage. Each engine has a non-resettable hours meter. These engines have only run for non-emergency testing and they are not operated for demand response. The records kept for the engines show hours of operation and reason for operation. Since they have not been operated for an emergency, all records showed operation for testing. These hours of operation are well within the 50 hours per year for non-emergency situations. Fuel oil is all taken from the same main tank which is tested twice a year. Weekly visual emission monitoring is conducted for EUGEN1 and EUGEN2, while in operation.

Maintenance records are kept electronically for all generators, which were emailed by Mr. Andrews. EUGENK-5 had oil changes on January 12, 2016 and had an inspection and preventative maintenance on August 22, 2016. EUGENK-10 had oil changes on June 9, 2016 and June 12, 2017 as well as inspection and preventative maintenance on June 12. The EUGEN-1A air filter, spark plug, and hoses were inspected on July 11, 2016. One spark plug was replaced. The oil was also changed. The EUGEN-1B air filter, spark plug, and hoses were inspected on June 23, 2016. The oil was changed on this date as well, according to the records. This is done yearly.

There is a yearly inspection and preventative maintenance procedure for EUGENK-5 and EUGENK-10. The fire pumps are maintained per the manufacturer's requirements. Inspection of the engine including

hoses is conducted. A new oil filter is also installed along with an oil change. An inspection and preventative maintenance was performed on EUGENK-5 on January 17, 2017 and on EUGENK-5 on June 27, 2017. Based on this information, FGEMERG-EXRICE appears to be in compliance.

FGCOLDCLEANERS:

The facility has one existing cold cleaner in the maintenance area. The lid was closed and it was not in use at the time of the inspection. The facility still uses EPA 2000 (#WCI-140). As noted in a previous inspection, the SDS does not contain ingredient information beyond identifying the solvent as nonhazardous. The manufacturer was called and it was determined that the solvent is 97% VOC. The emissions are released into the in-plant environment. Written operating instructions for the cold cleaner were taped to the lid and visible.

After the records were reviewed, Mr. Andrews took us on a tour of the facility. First, we viewed EUGEN3 and checked the name plate. The nameplate on the generator showed 1,825 kW and 2,876 hp. The name plate is located on the side of the generator that is facing away from the access doors. We verified that the EUSECURITYGEN had a non-resettable hours meter. This room requires additional access so Mr. Andrews called one of their maintenance workers to escort us into the room.

Next, we viewed the EUPLANTHEATER. The hours meter read 3973 total run hours. The EUVAPBOILER had a nameplate that read 23.2 MMBtu/hr. It was off at the time of the inspection so the non-resettable hours meter was not viewable. EUOFFICEBLR showed a total run time of 40,941 hours. The nameplate had a date of 1995 and a capacity of 2.2 MMBtu. The air compressors were also viewed during this part of the inspection.

We observed both EUGEN1 and EUGEN2. These were labeled as 1-1 Diesel Gen and 1-2 Diesel Gen. We also viewed the EUGENK-5 and EUGENK-10 fire pumps. K-10 had 24.5 total run hours and K-5 had 87.3 total run hours on the non-resettable hours meter. Finally, we saw the cold cleaner located in the maintenance area. It was not in use at the time, the lid was closed, and instructions on proper use were on the top of the lid.

Mr. Andrews escorted us back to his office. We discussed additional records which needed to be emailed to me to determine compliance. We thanked him for his time and left the facility around 12:30pm.

After the requested records were emailed, it appears that the facility is in compliance with all the conditions of the Renewable Operating Permit (ROP) MI-ROP-B2934-2013a.

NAME Aimee O'Neil

DATE 7/6/17

SUPERVISOR MA 7/6/2017