DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N258659907

FACILITY: Holland BPW, 48th Street Peaking Station		SRN / ID: N2586
LOCATION: 491 E 48th St, HOLLAND		DISTRICT: Kalamazoo
CITY: HOLLAND		COUNTY: ALLEGAN
CONTACT: Trista Gregorski , Environmental Regulatory Specialist		ACTIVITY DATE: 07/13/2021
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-Site Inspection		
RESOLVED COMPLAINTS:		

On July 13, 2021 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 1 Energy Parkway Holland, Michigan at 9:30 AM to conduct an unannounced air quality inspection of Holland Board of Public Works, 48th Street Peaking Station (hereafter Holland BPW). Staff made initial contact with Trista Gregorski, Holland BPW, Environmental Regulatory Specialist, who is the environmental contact and stated the purpose of the visit. Staff was then brought to an office room for further discussions.

Holland BPW consists of three combustion turbine generators. One turbine is a gas-fired unit with an output of approximately 80 megawatts and uses dry low NOx technology. The other two turbines are oil/gas fired with an output of approximately 40 megawatts each. These two turbines utilize water injection to control NOx emissions. The turbines are equipped with continuous emission monitoring systems to measure NOx emissions. The three turbines provide electrical power for the municipality.

Holland BPW was last inspected by the AQD on September 28, 2019 and appeared to be in Compliance at that time with MI-ROP-N2586-2020 Staff asked, and Miss Gregorski stated that the facility does not have any boilers or cold cleaners.

Miss Gregorski gave staff a tour of the facility. Required personal protective equipment are safety glasses, steel toe boots, hearing protection, high visibility vest, and a hard hat. Staff observations and review of records provided during and following the inspection are summarized below:

EUTURBINE9:

This emission unit is an 80 MW turbine with dry low NOx control used for generating electricity. This unit was installed in 1999 and according to the permit has not undergone any modification or reconstruction. This unit is equipped with a CEMS unit that is used to track NOx emissions data. MI-ROP-N2586-2020 does not allow for Holland BPW to operate the turbine at less than 50% of base load for more than one consecutive hour, during stable conditions, not to include start up and shut down. This unit is also required to be fueled by pipeline quality natural gas.

Holland BPW is required to keep records of the hours and load that the turbine is operated at. Miss Gregorski explained that the CEMS records and stores all this data. Staff requested that the facility provide records for when EUTURBINE9 was operating at a load that was less than 50% of the baseload (40 MW) from January 2021 through July 2021. The records show the load value that the turbine is operating at and the time in minutes that it was at that load. For every load that was under the 40 MW the facility was under 60 minutes of operating time. Miss Gregorski

explained that in addition to the records the system is set up to send an alarm if the unit were to ever operate at a load below 50% for more than one hour. The facility appears to be compliance with this special condition for the reviewed time.

The facility has two NOx emission limits that it is required to comply with. The first is an hourly average except during periods of startup and shutdown. This limit is 22 ppmv on a dry gas basis at 15% O2. The second is an annual 12-month rolling limit. Holland BPW is limited to 222.5 TPY calculated on a 12-month rolling average. Holland BPW provided averaged hourly NOx emission data from January 2021 through July 2021. During this time, it did not appear that the facility exceeded the 22-ppm excluding startup and shutdown times. The facility uses the CEMS data as an emission factor of NOx in lbs/MMBTU. The facility records monthly natural gas usage (mcf) and Heat Input (MMBTU) to calculate NOx emissions. From January 2020 through July 2021 the maximum NOx 12-month rolling emissions were 18.03 TPY which occurred in September 2020. Holland BPW is well below the permitted limit.

Holland BPW is required to test EUTURBINE9 for carbon monoxide emissions at least once during the term of MI-ROP-N2586-2020. The facility conducted this testing on July 27, 2020. The testing produced an average emission factor of 2.99 pph of CO, which is well under the 125 pph CO permitted limit. The facility is calculating CO emissions for every month. These monthly calucations are then used to do the 12-month rolling CO emissions. The equation that is used to calculate CO emission based on the turbine load and can be found in Appendix 7 of the ROP. In December 2020 Holland BPW emitted their largest amount of CO emissions for the records reviewed from January 2020 through July 2021. It was calculated that December 2020's 12-month rolling emissions for EUTURBINE9 were 49.93 TPY of CO. This is well below the 222.5 TPY limit in the permit.

During the inspection EUTURBINE9 was in operation. Staff took operational data from the units CEMS. Staff noted that the turbine was operating at a load of 51.07 MW and emitting 8.75 ppm as an uncorrected value.

FGUNITS-7&8:

EUTURBINE7 and EUTURBINE8 are both 40 MW turbines with water injection used for generating electricity. Both units were installed in 1991 and according to the permit has not undergone any modification or reconstruction. Both units are equipped with a CEMS unit that is used to track NOx emissions data. These units were not in operation during the inspection.

The facility has two NOx emission limits that it is required to comply with. The first is a daily average except during periods of startup and shutdown. This limit is 95 ppmv on a dry gas basis at 15% O2. The second is an annual 12-month rolling limit. Holland BPW is limited to 249 TPY combined between both turbines for their 12-month rolling average. Holland BPW provided averaged hourly NOx emission data from January 2021 through July 2021. Holland BPW does not typically operate these two turbines at the same time. The data did show that the facility did not exceeded the 95-ppm excluding startup and shutdown times. The facility uses the CEMS data as an emission factor of NOx in lbs/MMBTU. The facility records monthly natural gas usage (mcf) and Heat Input (MMBTU) to calculate NOx emissions. Since January 2020 the maximum NOx 12-month rolling emissions for EUTURBINE7 and EUTURBINE8 were 5.27 TPY and 2.34 respectively.

The combined maximum 12-month rolling emissions are 7.61 TPY which is well below the permitted limit.

Both EUTURBINE7 and EUTURBINE8 have the capacity of being fueled by No.2 diesel fuel oil. The fuel that Holland BPW purchases is an Ultra Low Sulfur Diesel records of delivery and Sulfur content are being kept. Both EUTURBINE7 and EUTURBINE8 were operated on fuel oil in June 2021. This is the first time these turbines have been operated on fuel oil in a long time. Records show that since January 2020 this was the only month that either of the turbines operated on fuel oil. EUTURBINE7 recorded 3949 gallons of fuel oil usage and EUTURBINE8 recorded 4145 gallons of fuel oil usage. These calculate to a few pounds of SO2 emissions for the fuel oil usage. Records show that this as 0.0 tons of SO2 emissions for these months due to rounding. The facility has recorded 12-month rolling SO2 emissions as 0.0 TPY for EUTURBINE7. The maximum 12-month rolling emissions since January 2018 for EUTURBINE8 were recorded as 0.0 TPY. This is well below the combined limit of 249 TPY of SO2 emissions.

FGCI-ENGINES:

Both turbines are equipped with black start engines to the turbines up to operating and startup speeds. These turbines are subject to Part 63 Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE). This regulation requires that every 500 hours of operation the oil be changed, and the hoses and belts be inspected. It also requires that every 1000 hours the of operation the air cleaner be inspected and replaced as necessary. Holland BPW is doing this on an annual basis. The last time EUENGINE7 had the maintenance conducted was on December 17, 2020. The last time EUENGINE8 had the maintenance conducted was on December 16, 2020. Holland BPW is also keeping record of all other preventative maintenance activities done to both units. Records are being kept for each engine's run time on an annual basis. EUENGINE7 had a total run time of 17.8 hours during 2020. EUENGINE8 had a total run time of 9.5 hours during 2020.

Each engine is equipped with a non-resettable hour meter. Staff did record hour meter readings during the inspection. Engine 7 hour meter was recorded as 131 hours. Engine 8 hour meter was recorded as 146 hours.

EUOILTANKS:

There are two 300,000 gallon oil tanks that are located at the facility. MI-ROP-N2586-2015a has them as subject to Part 60 Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. These tanks are used to house the Ultra Low Sulfur diesel fuel used by the blackstart engines and turbines.

Acid Rain Permit:

EUTURBINE7, EUTURBINE8, and EUTURBINE9 are subject to the CSPAR, Acid Rain, and Transport Rule requirements. Miss Gregorski showed staff that the required reports were being submitted to the USEPA. Staff was also provided with documentation that Holland BPW was not exceeding the emission allowances allocated by the program.

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-N2586-2020. Staff stated to Mrs. Gregorski that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 11:30 AM.-CJY

NAME Cody Yungjohann DATE 9/17/21 SUPERVISOR RJL 9/22/21