Region 2 Enforcement & Compliance Assurance Division
Air Compliance Branch

CAA Inspection Report

Inspection Date: 9/15/2022

Facility Name: VI WATER AND POWER AUTHORITY RICHMOND GENERATING STATION

Facility Address: Charlotte Amalie, VI 00820

ICIS-Air ID #: VI0000007800100001

Facility Contact: Maxwell George, Environmental Affairs Manager, 340-690-8993, maxwell.george@viwapa.vi

EPA Lead Inspector: Victor Tu, Environmental Engineer, ECAD/ACB, 212-637-3476

EPA Asst. Inspector: Ralph Lonergan, Environmental Engineer, ECAD/ACB, 212-637-3516

State Inspector(s): State inspector name, title, phone number.

Other Inspector(s): N/A

Pertinent Regulatory Requirements

- Prevention of Significant Deterioration (PSD) permits issued by EPA
- 2017 Judicial Consent Decree
- 40 CFR, Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion
- 40 CFR, Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines at Area sources

Summary of Observations

On September 15, 2022, Environmental Protection Agency (EPA) inspectors Ralph Lonergan and Victor Tu arrived at the facility at approximately 9:00 AM and met with Maxwell George, Environmental Manager. The inspectors showed Mr. George our inspector credentials and we proceeded to a conference room for an opening meeting. The following individuals were present at the opening meeting:

Maxwell George Jr., Environmental Manager
Rhonda Hiburd, Environmental Specialist
Nailah Elliott, Environmental Specialist
Mr. Burke, Operation Manager
Niger Hosrin, Aggreko Representative
Hector Requena, Aggreko Representative

During the opening conference, Mr. George gave updates on the status of the power generating units at the facility. Mr. George informed us that 18 Jenbacher Engines have been installed and operating since August 27, 2019. These engines operate on propane and have a capacity of 1.2 MW each. These engines use catalytic oxidation control devices to control VOC and CO emissions. Mr. George stated that under "normal circumstance", these engines would be required to be stack tested within 180 days of startup, but because of the Covid pandemic, testing was not possible. EPA approved a Force Majeure request to delay the stack testing.

Mr. George stated that the stack testing was completed on August 12, 2021. The report was submitted to EPA on January 6, 2022. Mr. George stated that the engine met all requirements of the NSPS and NESHAPS requirements (40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ), but the stack test results showed that all 18 engines exceeded the VOC emissions limit established in the Title V permit. According to Mr. George, the Title V VOC emission limit is based on the operator's (Aggreko) guarantee. The 18 engines are currently used as primary units for energy generation. The gas turbines are mainly used as peaking units, but also supplement the base load demand as needed. Mr. George stated that the base demand is approximately 36 MW and peak demand is approximately 41 MW.

The Gas Turbines that are in operation at the facility are Unit 20, Unit 17 and Unit 19. Unit 20 can produce 21 MW in output, Unit 17 can produce 19 MW in output and Unit 19 can produce 16 MW of output. The maximum output of the facility is 74 MW. Mr. George stated that the facility has enough capacity, so unit 19 is usually not operated unless it is necessary.

EPA inspectors asked if and when the stack tests that is required by the Consent Decree for all the Turbines has been completed. Mr. George stated that the facility started testing the units in June 2021 and completed the stack tests in August 2021. Mr. George also stated that VIWAPA decided to stack test all units during this round of stack testing, even though some units were previously tested prior to June 2021.

In addition to the three gas turbines and the 18 Jenbacher Engines, the facility also operates one emergency diesel generator, for black start, and 3 fire pumps (two electric and one diesel).

After the opening conference, the EPA Inspectors and Mr. George went on a facility tour. The group's first stop was the spare parts trailers/buildings. Spare parts for the water injection systems and the continuous emissions monitors (CEMS) are required to be kept on site by the Amended Consent Decree. A review of the location and quantities of several parts indicated that the spare parts inventories are mostly up to date. Inspectors did note that one part was used but not removed from the inventory list. The inventory list was corrected at the time of the inspection. Inspectors also looked at the calibration gas cylinders used for the CEMS. EPA inspectors did not identify any issues with the cylinders at the time of the inspection.

At approximately 12:15 PM, the group stopped at the control room. We also observed the operating parameters for the existing turbine Units 17, 19 and 20. Unit 19 was operating because Unit 20 tripped at the time of the inspection. Mr. George informed EPA inspectors that the HRSG connected to Unit 17 and 20 was not operational. Unit 16 was also not functional. All operating turbines can be controlled via the control room. Boilers 10 and 11 were also not operational.

At approximately 12:45 PM, the group stopped at the area outside the security gate where Aggreko's 18 Jenbacher Engines were located. All units appeared to be in operation at the time of the inspection. The Aggreko representative that was accompanying the group explained that each unit is tuned up approximately every 2000 hours. During the tune-up, a Testo device is used to test the air emissions. During the walkthrough, EPA inspectors noted that one of two Testo units was not functioning and the second Testo unit was out of calibration. The calibration sticker on the unit shows that the unit was due for calibration on 1/4/2022. A photo was taken of the calibration sticker.

At approximately 1:20 PM, the group stopped at the area where the emergency diesel generator was located. Inspectors recorded the total operating hour as 8,099 hours.

The field tour concluded at approximately 1:30 PM and the EPA inspectors and VIWAPA representatives returned to the conference room for a closing meeting. Inspectors thanked the VIWAPA representatives for accommodating the inspection. Inspectors provided a summary of the team's observations and indicated that additional information and documents may be requested after the inspection.

VIWAPA provided the following documents at the time of the inspection:

1. 2021 Stack Test Report for 17 Jenbacher Rice Generator Unit
2. VIWAPA Air Consent Stipulated Penalty Payment Summary
3. Quarterly Report Required by Consent Decree (July 1 – September 30, 2019)
4. Record of 2022 catalyst changeout of Jenbacher Rice Generator Units
5. VIWAPA Authorization to Construct Permit (February 12, 2018) for the construction of and installation of 18 new Jenbacher Rice generators
6. Stipulated Penalty Payment under Consent Decree (January 1 – March 31, 2022)
7. Aggreko Air Emissions Guarantee
8. Draft Notice to Aggreko

EPA requested the following documents be provided after the inspection:

1. Copy of the preconstruction permit for the Jenbackers engines
2. Notice to DPNR about the exceedance of the 180 days for the initial stack testing of Jenbackers engines
3. 2021 Catalyst changeout table (with actual dates of changeout and hours of operation)
4. 2020 Catalyst changeout table (with actual dates of changeout and hours of operation)
5. Operating hour logs for Emergency Diesel Generators
6. Stack Testing for Turbines (December 8, 2021)

Lead Inspector's Name: Victor Tu, Environmental Engineer

12/6/2022

X Victor Tu

Lead Inspector

Signed by: VICTOR TU

Assisting Inspector's Name: Ralph Lonergan, Environmental Engineer

12/6/2022

X Victor Tu for Lonergan

Assisting Inspector

Signed by: VICTOR TU

Supervisor's Name: Harish Patel

12/6/2022

X Harish Patel

Supervisor
Signed by: Environmental Protection Agency