



**Region 2 Enforcement & Compliance Assurance Division
Air Compliance Branch
CAA Inspection Report**

Inspection Date: 8/23/2023

Facility Name: PREPA AGUIRRE POWER STATION

Facility Address: State Road PR-3 Km. 152.7, Ward Montesoria, Aguirre, Salinas Puerto Rico

ICIS-Air ID #: PR0000007212300011

Facility Contact: Bianca Lewis Santiago, Director HSEQ, 787-209-0646, <blewis@genera-pr.com>

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EPA Asst. Inspector: Bryan Lange, 919-622-2374, <bryan.lange@erg.com>

State Inspector(s): N/A

Other Inspector(s): N/A

Summary of Observations

On August 23, 2023, EPA inspectors Ralph Lonergan, Julian Velez, Gloria Diaz-Galarza, and Bryan Lange (hereafter referred to as the inspection team) conducted an on-site inspection at the Aguirre Power Station (hereafter referred Aguirre).

Prior to arriving on-site, the inspectors investigated real-time PR power generation details.¹

System Total: 2,278 MW	San Juan: 499 MW
Aguirre: 228 MW	Costa Sur: 300 MW
Palo Seco: 100 MW	EcoElectrica: 470 MW
AES: 435 MW	

On July 1, 2023, Genera PR, LLC (Genera) became the operator of Aguirre.

- **Opening Meeting**

At 10:20 am the inspection team arrived at Aguirre.

¹ <https://genera-pr.com/data-generacion>

Following introductions, Mr. Lonergan requested a facility overview followed by a facility tour to observe unit operations and review recordkeeping procedures. A safety orientation preceded the facility overview.

- Facility Overview

Facility representatives were not aware of citizen complaints of opacity.

The following is a summary of the three power blocks:

- A. Boilers

Steam power plant can produce a total of 900 MWs (i.e., Unit AG1 and AG2 are each be capable of a full load 450 MW). AG1 is out of service for a generator repair and AG2 is producing 375 MW.

Unit AG1 failed August 7, 2022. Facility representatives expect to have it back in service on September 20, 2023.

There are operational limitations that prevent AG2 from producing power at full capacity. There is low vacuum at the condenser; the unit is operating with a single condenser. This issue has existed for 2-months and is expected to be resolved in 2-weeks. The repairs can be made while the unit is online. 3-months ago it operated at maximum capacity. AG2 was completely offline 2-weeks ago for a boiler failure. AG2 is currently operated in fixed mode.

The minimum power output in fixed mode for both these units is 230 MW of power; they can quickly produce an additional 25 MW. Increasing load requires additional oxygen and those adjustments are made automatically. When AG1 is back in service, it will be operated in a similar manner by LUMA. When operating below 230 MW the boiler design requires an adjustment of the furnace pressure to avoid an opacity deviation.

The EGUs primarily combust No. 6 fuel oil (Bunker C) but light oil is used for startup. Both fuels are received by barge. Facility representative explained that tank No. 5 is undergoing maintenance. Including tank 5, the overall capacity of all tanks is 200,000 barrels.

Soot blowing occurs twice per 12-hour shift (or 4 times per day). Each boiler has 26 lances/blowers across 4 levels. The cycle takes approximately 40-minutes. The soot blowing uses water from wells. Water is pre-treated by reverse osmosis and then it is demineralized. Aguirre has its own wastewater treatment plant that discharges into the bay.

- B. Combined cycle:

Combined cycle power plant consists of eight oil-fired gas turbines (CC1-1, CC1-2, CC1-3, CC1-4, CC2-1, CC2-2, CC2-3, and CC2-4) with two steam electric generators. At the time of the inspection, none of the turbines were operational. These units are operated as peaker units.² The units are often deployed in the afternoon (i.e., 6 pm) when demand is high. Two gas turbines, without the steam turbines, operated yesterday. Each has the capacity of 50 MW. Prior to Genera becoming the operator of Aguirre, these gas turbines were operated by Hydro-gas (a division of PREPA).

These units have two stacks.

- C. Black Start

Two (2) combustion turbines (AGGT2-1 and AGGT2-2) fire No. 2 fuel oil to generate electricity. Each can generate 21 MW of power. These units are sometimes referred to by the turbine manufacture i.e., John Brown No. 1 and No. 2. The units have been out of service since 2015. Since 2015, the electrical grid has provided the black start function (i.e., power is transmitted from electric generating units at Costa Sur or AES).

Facility representatives explained there is a desire to run these units again in 2-months. Mr. Jaime Lopez is the point of contact for these units.

² Peaker units are specifically designed to provide electricity during periods of high electricity demand, or "peak" demand.

- D. Emergency Generators

There are four 600 kV emergency generators onsite that provide electricity for critical functions including lighting the control room. There are also 2 diesel fired fire pumps.

- Plant Tour

A facility tour was conducted to confirm the information provided by the facility. ERG took photos of selected emission units and operational records (e.g., logbooks, checklists).

- A. Boiler Control Room

At the time of the inspection, only boiler AG2 was operational. Soot blowing was occurring. The inspection team observed the following parameters:

- Control screens No.1 and No.2 showed 216 MW of generated power and the measured opacity was 3.74 and 3.21 percent; 6-minute average opacity was 4.96 and 3.55 percent.
- Control screen No.3 showed the flame overview.
- Control screen No.4 showed the boiler and turbine system.
- Control screen No.5 showed 217 MW of generated power and the measured opacity was 6 and 2 percent.

Facility representatives explained that there is some discrepancy between the control room MW output and the dispatch display.

- B. Spare Parts Warehouse

The CD requires that Genera maintain facility specific inventory of certain spare parts. The inspection team verified that the quantity in stock of a chosen component was consistent with the count in the most recent July 2023 inventory. As requested, the warehouse staff collected and presented the identified item. There was one air relief valve (No. 101-89124) and the July inventory stated there should be 2. The inspectors acknowledge that time has passed since the date of the inventory. A second part was required (i.e., 115-80093-DD-027) and there was agreement between the count and inventory.

- C. Combined Cycle

At the time of the inspection, no units were operating. Yesterday (August 22, 2023), units CC1-1 and CC1-2 were operated for approximately 4-hours.

Mr. William Rivera, the combined cycle operator, explained these electric generating unit (EGU) limitations. Only four of the eight are operational (i.e., CC1-1, CC1-2, CC2-3, CC2-4). All four were operated last week because Palo Seco was down for 24-hours. The rotors for units CC1-3 and CC1-4 are broken and must be installed and demonstrated after the repair. The main power transformer is broken for Units CC2-1 and CC2-2.

Steam turbine No. 2 has not operated since 2017. Steam turbine No. 1 has been unavailable since December of 2022, but it will be available when a condensate tank is constructed.

Mr. Rivera was a certified VE observer. He stands at the cooling tower for his Method 9 observations. Observations are unpredictable given their inconsistent deployment of these EGUs.

- D. Black Start

The inspection team reviewed the logbook and found that the John Brown unit last ran in October 2015. The logbook also showed equipment testing had occurred in August 2023.

- E. Emergency Engines

Photographs of lifetime hours and nameplates for representative engines were taken. Hours of operation are as follows:

- Cummins Fire Power Model: CFP7E-F20 = 856 hours,
- Detroit Diesel Model: 81237416 = 449 hours, 12 minutes.

One fire pump area was flooded, the hour counter and nameplate were not accessible.

- Closing Meeting

After the conclusion of the inspection, Mr. Lonergan expressed gratitude for all the assistance provided during the inspection and all the cooperation in providing the information needed to complete the inspection. The inspectors concluded the inspection closing meeting on August 23, 2023 at around 1:42 pm.

Lead Inspector's Name: *for* Ralph Loneragan

JULIAN VELEZ Digitally signed by JULIAN
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Lead Inspector

Assisting Inspector's Name: Julian Velez

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Date: 2023.10.18 12:09:55
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Assisting Inspector

Supervisor's Name: Joseph Cardile

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Joseph
Date: 2023.10.19 15:19:27
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Supervisor