



U.S. Environmental Protection Agency
Office of Compliance and Enforcement
1200 Pennsylvania Avenue, NW
Washington, DC 20460

U.S. Environmental Protection Agency, Region 2
Caribbean Environmental Protection Division
Multimedia Permits and Compliance Branch

Industrial Facility NPDES Compliance Evaluation Inspection

Puerto Rico Electric Power Authority (PREPA)

G.P.O. Box 364267, San Juan, Puerto Rico 00936-4267

AGUIRRE POWER COMPLEX

Road PR-3, Int. 705

Salinas, Puerto Rico 00751

Coordinates: 18.000447 ° N; -66.451020 ° W

Sections 301 and 402 of the Clean Water Act
NPDES Regulations: 40 C.F.R. Part 122

NPDES Permit Number: PR0001660

Inspection Date: May 17, 2022

Inspection Report Prepared by:

Kevin Stockton
CWA Contract Inspector
PG Environmental

(720) 789-8050 kevin.stockton@pgenv.com

7/1/2022
(date)

On Behalf of:

Jaime López
Senior Enforcement Officer/Physical Scientist
Clean Water Act Team, U.S. EPA Region 2, CEPD
(787) 977-5851 Lopez.Jaime@epa.gov

7-18-2022
(date)

Approving Officer:

JOSE RIVERA

Digitally signed by JOSE RIVERA
Date: 2022.07.18 12:11:27
-04'00'

José A. Rivera
Lead Environmental Engineer
Clean Water Act Team, U.S. EPA Region 2, CEPD

(date)

CONTENTS

	Page
SECTION 1.0 INTRODUCTION.....	2
SECTION 2.0 FACILITY DESCRIPTION.....	3
NPDES PERMIT	4
CONSENT DECREE	5
SECTION 3.0 REVIEW OF FACILITY RECORDS.....	5
BEST MANAGEMENT PRACTICE (BMP) PLAN	5
STORMWATER POLLUTION PREVENTION (SWPP) PLAN	7
DISCHARGE MONITORING REPORTS (DMRs).....	7
SECTION 4.0 FACILITY WALKTHROUGH.....	8
ANALYTICAL LABORATORY AND MONITORING LOCATIONS	8
WASTEWATER TREATMENT PLANT	8
NPDES OUTFALLS.....	9
SKIMMERS AND STORMWATER CONVEYANCES	10
SECTION 5.0 CLOSING CONFERENCE.....	11

APPENDIX A: NPDES Permit Number: PR0001660

APPENDIX B: Photograph Log

APPENDIX C: Exhibit Log

Section 1.0 Introduction

On May 17, 2022, representatives from the U.S. Environmental Protection Agency (EPA) and an EPA contractor, PG Environmental, (hereinafter, collectively, the EPA Inspection Team) conducted a Compliance Evaluation Inspection (CEI) of the Puerto Rico Electrical Power Authority (PREPA) Aguirre Power Complex facility located in Salinas, Puerto Rico (hereinafter, the Facility).

Industrial wastewater and stormwater discharges from the Facility are regulated under National Pollutant Discharge Elimination System (NPDES) Permit No. PR0001660, effective June 1, 2019 (hereinafter, the Permit). PREPA also entered in a Consent Decree (CD) in April 1999, Civil Action No. 93-2527 CCC, with the United States Department of Justice (DOJ) and EPA for violations of the Clean Water Act (CWA).

The purpose of the CEI was to evaluate PREPA's operation and maintenance of the wastewater treatment facilities and stormwater collection system, and its implementation of programs and procedures to fulfill requirements of the Permit. The CEI consisted of an entry meeting to discuss the purpose of the inspection, a Facility walkthrough to evaluate operational and maintenance conditions, a records review to assess documentation protocols, and a closing meeting to discuss preliminary findings and areas of concern. The EPA Inspection Team conducted the records review off site using information provided electronically by Facility representatives following the onsite inspection.

The EPA Inspection Team arrived at the Facility at 9:00 AM (AST) for the inspection. Kevin Stockton of PG Environmental displayed his Clean Water Act inspector credential to the Facility representatives at the outset of the inspection and explained the purpose of the CEI was to observe compliance with the Permit. Table 1 describes the individuals that participated in the inspection.

Table 1. Primary Representatives Involved in the Inspection

Organization	Representatives
PREPA	Indira Mohip, Division Head Zulma Matos, Administrator Renecito Pabon, Environmental Control Supervisor Ileana Rodriguez, Water Quality Regulation Compliance Supervisor/Thermoelectric SPCC Officer Alexis Cruz, Generation Plant Manager
EPA Representatives	Jaime López, CEPD
EPA Contractor Representatives	Kevin Stockton, PG Environmental Page Cirillo, PG Environmental

This report presents observations made by the EPA Inspection Team about conditions at the Facility and protocols implemented by PREPA in order to comply with the provisions

of the Permit. However, the observations presented in this report do not constitute formal findings of compliance. Appendix A contains a copy of the Permit. Appendix B, Photograph Log, contains photographs taken by the EPA Inspection Team at the Facility. Appendix C, Exhibit Log, contains relevant documentation reviewed by the EPA Inspection Team.

During the field components of the inspection, the weather was sunny and temperatures were around 85 degrees Fahrenheit. National Oceanic and Atmospheric Administration (NOAA) data was not available for Salinas, so Table 2, below, shows precipitation totals from a nearby NOAA weather station in Ponce for the date of the inspection and seven days prior.

Table 2. Precipitation Totals for Ponce, Puerto Rico¹

Date	Precipitation (in)
5/10/2022	0.00
5/11/2022	0.04
5/12/2022	0.22
5/13/2022	0.00
5/14/2022	0.05
5/15/2022	0.00
5/16/2022	0.01
5/17/2022	0.00

Section 2.0 Facility Description

PREPA owns and operates the Aguirre Power Complex, which is engaged in the generation and transmission of electricity. The Facility is composed of two electrical power generating plants: a thermoelectric plant (Bunker C fuel oil) and a combined cycle plant (Bunker C fuel oil and natural gas). The thermoelectric plant consists of two 450 megawatt oil-fired units and two simple cycle 20 megawatt oil-fired combustion turbines. The combined cycle plant consists of two 296 megawatt units, each comprised of four combined cycle 50 megawatt oil-fired combustion turbines, four heat recovery steam generators, and one 96 megawatt electric steam turbine generator. The Facility's total combined electrical output rating is 1,540 megawatts. Figure 1, below, depicts the Facility's location southeast of Salinas, PR.

¹ Source: National Oceanic and Atmospheric Administration weather station RQ1PRPC0002 near Ponce, Puerto Rico.



Figure 1. Facility Location Map (Source: Google Earth; imagery date: 10/16/2021).

The Facility's onsite wastewater treatment plant provides treatment for the industrial wastewater generated during the power generation process. The wastewater treatment plant consists of two influent equalization tanks, three Nautilus flocculation and clarification units, three polishing filters, and two sludge settling basins. The plant's effluent is discharged into Jobos Bay, a navigable water of the United States. Settled sludge from the industrial wastewater treatment process is hauled to a landfill for disposal. [Appendix C, Exhibit 1](#) contains a schematic flow diagram for the Facility's wastewater treatment plant.

Stormwater drainage is collected by storm drains throughout the Facility that discharge via subsurface conveyances to five in-ground oil water separators (or "skimmers") and subsequently to Jobos Bay via the Facility's NPDES-permitted outfalls. [Appendix C, Exhibit 2](#) contains a Facility map that identifies the stormwater collection, conveyance, and treatment system.

NPDES Permit

The Permit was originally issued to the Facility in 1976 under Section 402 of the Act, 33 U.S.C. 1342, for the discharge of wastewater and stormwater runoff into Jobos Bay (Caribbean Sea), a navigable water of the United States. Since that time, the Permit has been reissued numerous times with the most recent issuance becoming effective on June 1, 2019, and expiring on May 31, 2024. The Permit is included as [Appendix A](#) to this report.

The Permit contains effluent limitations for Outfalls 001, 002, 003, 004, and 005, monitoring and reporting requirements, and other conditions for compliance. The Permit authorizes PREPA to discharge the following waste streams to Jobos Bay through each outfall:

- Outfall 001: Thermoelectric plant condensers cooling water, thermoelectric plant service water cooling towers blowdown, combined cycle plant sea water cooling towers make up and blowdown, thermoelectric plant tanks and condensers hydrostatic test waters, condensers screen wash water, reject water from ultra-filtration plant and stormwater.
- Outfall 002: Condensate of the fuel heaters, floor and equipment drains, miscellaneous use water and, stormwater runoff.
- Outfall 003: Wastewater treatment plant effluent, stormwater runoff and condenser screen wash water.
- Outfall 004: Combined cycle plant service water cooling towers blowdown, combined cycle equipment hydrostatic test waters, combined cycle plant miscellaneous use water, stormwater from the fuel tank dikes, stormwater runoff and groundwater.
- Outfall 005: Stormwater runoff treated in an oil water separator prior to discharge.

Consent Decree

In April 1999, PREPA entered in a CD, Civil Action No. 93-2527 CCC, with DOJ and EPA for violations of the CWA. The CD included injunctive relief and imposed civil penalties for violations of the effluent limitations and NPDES requirements pursuant to Sections 301 and 402 of the CWA. Also, the CD included, among others conditions, stipulated penalties and submittal of quarterly reports.

Section 3.0 Review of Facility Records

During the inspection, the EPA Inspection Team requested specific records from Facility Representatives related to implementation of programs and activities to comply with the requirements of the Permit. The records were provided to the EPA Inspection Team electronically following the inspection.

Best Management Practice (BMP) Plan

The EPA Inspection Team reviewed the Facility's BMP Plan, which describes the Facility's potential pollution sources and procedures for preventing, containing, and minimizing impacts of materials stored and handled on site.

Part V.B.1.v.2 of the Permit states, "the BMP Plan shall be reviewed every five years and modified as necessary."

Observation 1. The Facility's BMP Plan had not been updated for more than five years. At the time of the CEI, the Facility's BMP Plan (Revision 7) had not been reviewed and modified since March 2016 (refer to [Appendix C, Exhibit 3](#)). Facility representatives explained that they were awaiting issuance of the next version of the Permit before updating the BMP Plan.

Part V.B.1.v.5 of the Permit states, “The permittee shall comply at all times with the provisions, measures or practices included in the most recent version of the BMP Plan.”

Part IV.B.4.vi of the Permit states, “At least once each calendar year, the Permittee must conduct a Comprehensive Site Compliance Inspection when a stormwater discharge is occurring. Include the following areas in all inspections: access roads and rail lines; grit, screening, and other solids handling; storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station. Routine facility inspections of all areas of the facility where materials or activities exposed to stormwater, and of all stormwater control measures used must be conducted at least quarterly (i.e., once each calendar quarter), or more frequently (i.e., monthly), as appropriate.”

Observation 2. The Permittee had not implemented Facility inspections to comply with the Permit’s inspection requirements as described in the BMP Plan. Section 8 of the Facility’s BMP Plan describes procedures for inspecting seventeen distinct areas of the Facility and provides a checklist-style inspection form that includes a page for corrective actions. Facility representatives provided the EPA Inspection Team with documentation from BMP inspections conducted within one year prior to the inspection. The EPA Inspection Team noted that the form included in the BMP Plan was not used to document BMP inspections. Rather, inspections of certain areas of the plant were documented using a form printed out from the Facility’s work order system and completed by hand. The EPA Inspection Team noted that the inspection forms only document the overall status of various locations and equipment (e.g., Sanitary Pump Station No.3, Switch Yard 230 KV), but do not document the implementation or maintenance status of control measures to prevent spills and releases of pollutants into the Facility’s skimmers, drainage systems, and Outfalls (refer to [Appendix C, Exhibit 4](#)). Additionally, inspections were not conducted in the seventeen areas identified in the BMP Plan, did not include the page for corrective actions included in the BMP Plan, and in some cases were not completely filled out.

Part IV.B.4.n of the Permit states “The Permittee must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of the Pollution Prevention Team. Training must cover both the specific control measures used to achieve the effluent limits in this Part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit. EPA recommends training be conducted at least annually (or more often if employee turnover is high).

Observation 3. The Permittee had not implemented an employee training program to comply with the Permit’s employee training requirements as described in the Facility’s BMP Plan. Section 7 of the Facility’s BMP Plan (Employee Training) states that all employees are trained in specific topics including Clean Water Regulations and Oil Spill Prevention and Control (refer to [Appendix C, Exhibit 3](#)). However, based on conversations with Facility representatives, a training program for all

Facility employees on stormwater pollution prevention and good housekeeping did not exist.

Stormwater Pollution Prevention (SWPP) Plan

Part V.B.4 (Stormwater Pollution Prevention Plan) of the Permit states, “The Permittee shall develop and implement a stormwater pollution prevention (SWPP) [Plan]. The permittee may submit an integrated SWPP and PMP that addresses the requirements of this section and Special Condition IV.B.3 - Preventive Maintenance Plan and Pollution Prevention. Compliance with this provision also addresses the BMP Plan requirement in Special Condition IV.B.”

Observation 4. The Permittee had not developed and implemented a SWPP at the time of the inspection. The EPA Inspection Team requested a copy of the Facility’s most recent SWPP Plan, but one was not provided by Facility representatives. The EPA Inspection Team noted that the Facility’s BMP Plan contained descriptions of some procedures and practices to prevent stormwater pollution prevention, but it was not identified as a combined BMP/SWPP Plan and did not contain all of the elements described in Part V.B.4 of the Permit. Specifically, the BMP Plan did not contain preventative measures to minimize the potential for releases of pollutants in stormwater runoff or procedures for conducting annual comprehensive site compliance inspections while a stormwater discharge is occurring (refer to Appendix C, Exhibit 3).

Discharge Monitoring Reports (DMRs)

During the onsite inspection, the EPA Inspection Team observed that the Facility’s DMRs were maintained in hard copy format at the Facility. The files were maintained with corresponding laboratory data, including original test results, chains of custody, rain gauge data, and QA/QC data analysis results. The EPA Inspection Team’s period of review covered January 2019 through April 2022.

Part III of the Permit includes effluent limits and monitoring requirements for each outfall.

Observation 5. The EPA Inspection Team observed 88 effluent violations occurred at the Facility’s outfalls during the period of review. Seventy-seven (77) of the 88 violations occurred at Outfall 002, the majority of which were exceedances of the Permit’s effluent limitations for pH (7.3 – 8.5 SU) and Copper (3.73 ug/L). The most common reported cause for these violations is “material dragged in the pluvial system” indicating that uncontained pollutants have discharged to Jobos Bay from the Facility in stormwater runoff at Outfall 002. Appendix C, Exhibit 5 contains a summary of the reported effluent violations during the period of review.

According to the Facility’s BMP Plan, the stormwater drainage area for Outfall 002 includes “boilers and turbines, parking, service oil tanks, gas turbines, warehouse, and engineering and construction administration areas” (refer to Appendix C, Exhibit 3). During the CEI, the EPA Inspection Team observed that the Permittee had not implemented control measures to minimize erosion of

sediment and other pollutants into the storm drain system (refer to Observation 7).

Section 4.0 Facility Walkthrough

In order to assess conditions of infrastructure and equipment at the Facility, the EPA Inspection Team, accompanied by Facility representatives, toured the following locations during the CEI: NPDES permitted outfalls, internal sampling points, skimmers, materials storage areas, the onsite analytical laboratory, and the onsite wastewater treatment plant.

Analytical Laboratory and Monitoring Locations

The EPA Inspection Team observed that written sampling procedures were maintained at the Facility's analytical laboratory along with sampling instruments and equipment. Calibration logs for Facility sampling instruments were also maintained in the laboratory and calibration dates were documented on some of the sampling probes at the Facility's internal sampling points. The EPA Inspection Team recommended that Facility representatives put stickers on all field sampling instruments (thermometers, pH probes, flow meters, etc.) to identify when the instrument was last calibrated and when the next calibration is due.

Automatic composite samplers were located at several of the Facility's discharge monitoring locations, but Facility representatives explained that they were not being utilized for compliance monitoring at the time of the inspection. Instead, Facility representatives were taking composite samples in the field using portable automatic composite samplers containing ice to preserve the samples until they could be returned to a refrigerator in the laboratory.

The EPA Inspection Team noted that all of the Facility's NPDES sampling points were identified with the appropriate signage.

Wastewater Treatment Plant

At the time of the inspection, the wastewater treatment plant was operating with one of the two influent equalization tanks out of service. Facility representatives explained that PREPA was in the process of constructing a new influent equalization tank and a new final effluent storage tank for the wastewater treatment plant (refer to [Appendix B, Photograph 1](#)). Facility representatives explained that the new tanks were being built as part of a larger project to reuse effluent from the plant at the Facility, expected to be complete in 2024. All three Nautilus units and all three pressure filters were operational.

At the time of the inspection, the Facility's north sludge basin contained liquid sludge in the process of dewatering, and the Facility's south sludge basin contained dewatered sludge (refer to [Appendix B, Photographs 8 and 9](#)). Facility representatives explained that the dewatered sludge is hauled to an industrial landfill approximately once every six to eight months.

Condition 5 of Attachment B (Standard Conditions) of the Permit states, "The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance

with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.”

Observation 6. Some equipment at the Facility’s wastewater treatment plant appeared to be in need of maintenance. Specifically, corrosion was visible on the walls of the effluent and sludge collection troughs in the Nautilus flocculation and clarification units (refer to [Appendix B, Photographs 2, 3, and 4](#)). Also, one of the Nautilus units had a mixer that was out of service and awaiting repair/replacement (refer to [Appendix B, Photograph 5](#)).

The EPA Inspection Team also observed an active leak from the polymer feed system at the wastewater treatment plant (refer to [Appendix B, Photographs 6 and 7](#)). The leak was entering a floor drain which appeared to discharge to a secondary containment structure south of the plant. Upon observing the leak with the EPA Inspection Team, Facility representatives stated that a work order had not yet been generated to repair the leak, and Facility representatives proceeded to generate one from the field.

NPDES Outfalls

The EPA Inspection Team observed the following at the Facility’s NPDES Outfalls:

- The flow at Outfall 001 appeared clear with foaming in the discharge structure immediately prior to the subsurface diffuser that carries the effluent into Jobos Bay (refer to [Appendix B, Photograph 10](#)). Based on previous inspections of the Facility, and discussions with Facility personnel, the level of foaming in the discharge structure on the day of the CEI appeared typical.
- The EPA Inspection Team was unable to directly observe Outfall 002 due to the outfall location being inaccessible. The area around the Outfall 002 was heavily vegetated (refer to [Appendix B, Photograph 11](#)).
- The flow at Outfall 003 appeared clear with minimal foam (refer to [Appendix B, Photographs 12 and 13](#)).
- The flow at Outfall 004 appeared clear and without floatables (refer to [Appendix B, Photograph 14](#)).
- The EPA Inspection Team was unable to directly observe Outfall 005 due to the outfall location being inaccessible. However, no flow was observed at the sampling point immediately upstream from the outfall (refer to [Appendix B, Photographs 15 and 16](#)).

Skimmers and Stormwater Conveyances

The EPA Inspection Team observed the Facility's Skimmers (oil/water separators) D, K and 004. These skimmers were open-top concrete structures with multiple cells separated by baffles. Each of the skimmers contained filter sock BMPs in the effluent cell, all of which appeared to have been recently installed or replaced. Facility representatives stated that the skimmers are taken offline and cleaned approximately once every eighteen months. The EPA Inspection Team observed the following at each skimmer:

- Significant algal growth was present in Skimmer K (refer to Appendix B, Photograph 17).
- The EPA Inspection Team did not observe any maintenance concerns at Skimmer 004 (refer to Appendix B, Photographs 18 and 19).
- Peeling paint and staining were present on the walls inside Skimmer D (refer to Appendix B, Photographs 20 and 21).

Part V.B.4.I of the Permit (Erosion and Sediment Controls) states, "The permittee must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. The permittee must place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants."

Observation 7. The Permittee had not minimized onsite erosion and sedimentation in exposed areas that drain to stormwater conveyances. The EPA Inspection Team observed multiple areas at the Facility where unstabilized gravel and sediment had washed into storm drains. Stormwater drainage from an employee parking area surfaced with aggregate in the east area of the Facility drains to three storm drain inlets that discharge to Skimmer D and subsequently to Outfall 002. At the time of the inspection, no structural (e.g., storm drain inlet protection) or non-structural (e.g., stabilization) control measures were implemented to minimize erosion of sediment and other pollutants into the storm drain system. Aggregate and sediment were present in the storm drain catch basins (refer to Appendix B, Photographs 22 through 27). During review of the Facility's DMRs, the EPA Inspection Team observed 34 reported violations at Outfall 002 for which "material dragged into the pluvial system" (or similar) was the reported cause (refer to Appendix C, Exhibit 5).

The EPA Inspection Team also observed unprotected storm drains containing aggregate and sediment to the west of the Facility's wastewater treatment plant (refer to Appendix B, Photographs 28 through 31).

Section 5.0 Closing Conference

On May 17, 2022, following the Facility walkthrough, the EPA Inspection Team met with Facility representatives for a closing conference and shared preliminary observations. The EPA Inspection Team reiterated that all preliminary observations discussed were not compliance determinations. Any and all preliminary observations shared were subject to further investigation by the EPA Inspection Team upon the additional review of records and documentation. Additional observations may be contained in this inspection report that were not identified at the time of the closing conference after the additional review of materials following the inspection.

The CEI concluded at approximately 4:00 PM (AST).