



U.S. Environmental Protection Agency
Office of Compliance and Enforcement
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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

SAN JUAN POWER PLANT

Road PR-28, Puerto Nuevo

San Juan, Puerto Rico 00934

Coordinates: 18.253027 ° N; -66.061280 ° W

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

NPDES Permit Number: PR0000698

Inspection Date: May 19, 2022

Inspection Report Prepared by:

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7/1/2022
(date)

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Section 1.0 Introduction

On May 19, 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) San Juan Power Plant facility located in San Juan, Puerto Rico (hereinafter, the Facility).

Discharges of industrial wastewater and stormwater from the Facility are regulated under National Pollutant Discharge Elimination System (NPDES) Permit No. PR0000698, effective September 1, 2018 (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 storm water 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 9:30 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 Victor Ortiz, Plant Manager Alexandra Colon, Plant Chemist Kiromie Torres, NPDES Coordinator Alberto Perez, PREPA Radamés Alvarado, Operations Department Head Yaritza Acevedo, AEE/DPACC
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. Table 2, below, shows precipitation totals from a nearby National Oceanic and Atmospheric Administration (NOAA) weather station in San Juan for the date of the inspection and seven days prior.

Table 2. Precipitation Totals for San Juan, Puerto Rico¹

Date	Precipitation (in)
5/13/2022	0.06
5/14/2022	0.04
5/15/2022	0.01
5/16/2022	0.04
5/17/2022	0.01
5/18/2022	0.00
5/19/2022	0.01
5/20/2022	0.00

Section 2.0 Facility Description

PREPA owns and operates the San Juan Power Plant, which is engaged in the generation and transmission of electricity. The Facility consists of four 100 megawatt (MW) oil-fired generating units and two 200 MW combined cycle generating units for a combined total generating capacity of 800 MW. The Facility is located on State Road No. 28 in the municipality of San Juan, next to the Puerto Nuevo piers on the southwest shore of San Juan Bay, Puerto Rico. Figure 1, below, depicts the Facility's location in San Juan, PR.

¹ Source: National Oceanic and Atmospheric Administration weather station RQW00011641 in San Juan, Puerto Rico.

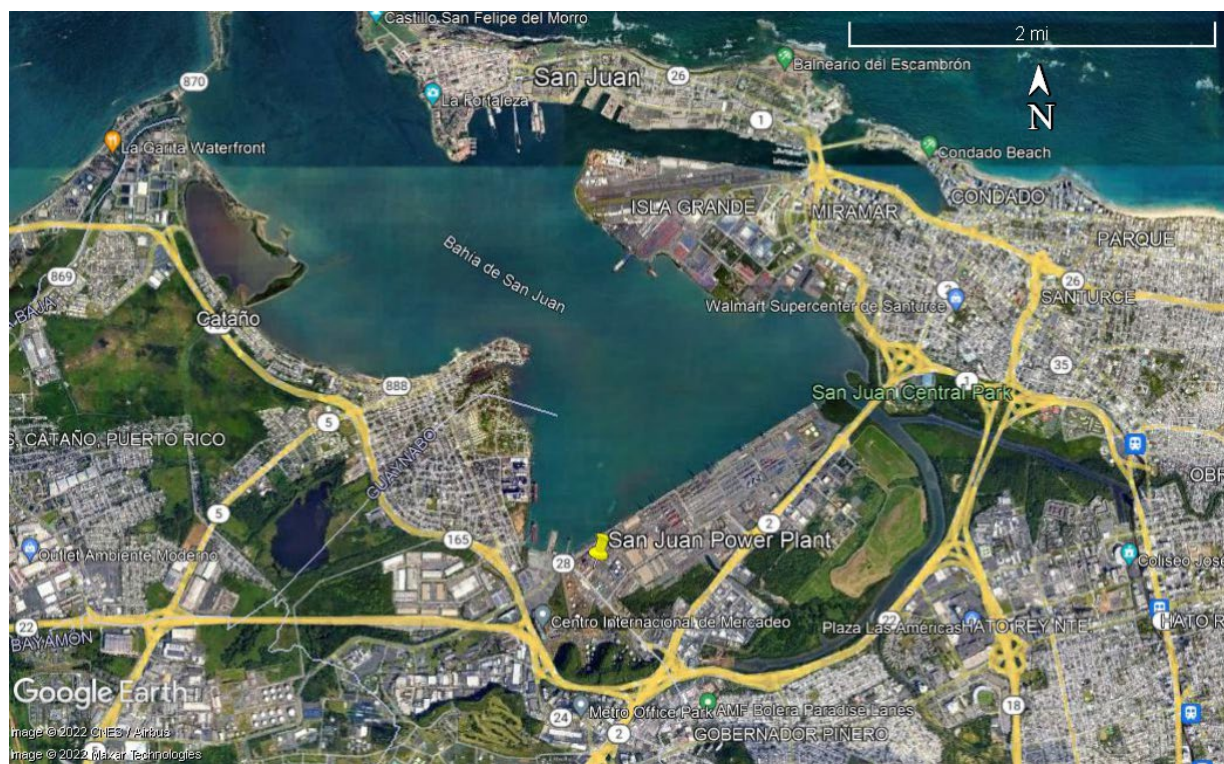


Figure 1. Facility Location Map. Source: Google Earth, imagery date: 4/8/2016

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 three wastewater storage tanks, two Nautilus flocculation and clarification units, effluent multimedia filters, two final effluent storage tanks, and two sludge settling basins. Acid and caustic storage tanks are located at the treatment plant within containment dikes. The plant's effluent is discharged via Outfall 002 into San Juan Bay, a navigable water of the United States. Settled sludge from the industrial wastewater treatment process is hauled to a landfill for disposal.

Stormwater drainage is collected by storm drains throughout the Facility that discharge via subsurface conveyances to oil/water separators and subsequently to San Juan Bay via the Facility's NPDES-permitted outfalls.

Appendix C, Exhibit 1 contains a schematic flow diagram for the stormwater and wastewater flows at the Facility. 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 1987 under Section 402 of the Act, 33 U.S.C. 1342, for the discharge of wastewater and storm water runoff into San Juan Bay, 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 September 1, 2018, and expiring on August 31, 2023.

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

- Outfall 001: Non-contact cooling water (all units), screen wash water (units 7-10), cooling tower basin drain cleaning (all units), utility water (units 5-10), rejected water from the reverse osmosis (RO) system, backwash water of the ultrafiltration systems, stormwater runoff.
- Outfall 002: Wastewater treatment plant effluent, steam condensate from fuel line heating system, stormwater runoff.
- Outfall 003: Steam condensate from fuel line heating system (units 7 and 8; service tanks 9 and 10), utility water – floor equipment drains (units 5-8), reserve and service fuel oil tank, condensate water, stormwater.

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.

Pollution Prevention Plan (PPP) Plan

The EPA Inspection Team reviewed the Facility's Pollution Prevention Plan (PPP), revised May 2022, which "addresses potential sources of pollutants that may impact the quality of storm water runoff or process waste water discharges from the facility, as well as the pollution prevention measures for such fluids" (refer to [Appendix C, Exhibit 3](#)). Facility representatives explained that the PPP was developed in order to address both the Preventative Maintenance Plan (PMP) and Pollution Prevention and the Stormwater Pollution Prevention (SWPP) Plan/Best Management Practice (BMP) Plan requirements in the Permit (Parts IV.B.4 and IV.B.5, respectively).

Part IV.B.5.f 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 1. The Permittee had not conducted annual Comprehensive Site Compliance Inspections in compliance with the Permit, nor had the Permittee conducted routine Facility inspections as described in the Facility’s PPP. In addition to the Permit requirements, Section 10 of the Facility’s PPP (Inspections) describes procedures for inspecting 13 distinct areas of the Facility in order to “identify conditions or practices that could lead to a substance release” (refer to Appendix C, Exhibit 3). The PPP does not prescribe a frequency at which these inspections are to be conducted. As part of the records request, the EPA Inspection Team requested documentation of BMP and/or stormwater pollution prevention inspections conducted at the Facility. Facility representatives provided OWS BMP inspection reports, but did not provide any inspection reports relating to a comprehensive site inspection or stormwater pollution prevention inspections of the 13 distinct areas of the Facility. The EPA Inspection Team observed multiple areas of concern with regard to stormwater pollution prevention and good housekeeping at the Facility (refer to Observation 5).

Part IV.B.5.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 2. The Permittee had not implemented an employee training program as required by the Permit or as described in the Facility’s PPP. In addition to employee training described in the Permit, Section 11 of the Facility’s PPP (Employee Training) describes specific training requirements for Facility employees, including stormwater pollution prevention training (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.

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 gauges data, and QA/QC data analysis results. The EPA Inspection Team’s period of review covered January 2019 through April 2022. Appendix C, Exhibit 4 contains a summary of the Facility’s reported effluent violations during the period of review.

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

Observation 3. The EPA Inspection Team observed 142 effluent violations occurred at the Facility's outfalls during the period of review. Seventy-one (71) of the 142 violations occurred at Outfall 003 and sixty-one (61) of the 142 violations occurred at Outfall 002, the majority of which were exceedances of the Permit's effluent limitations for pH (7.3 – 8.5 SU), temperature (90 °F), nickel (8.28 µg/L), zinc (85.62 µg/l), or copper (3.73 ug/L). The most common reported causes for these violations relate to breaks or overflows of Facility tanks or equipment (refer to Appendix C, Exhibit 4).

The EPA Inspection Team observed multiple leaks from Facility equipment at the time of the inspection (refer to Observation 4). Many of the reported causes for metals limit exceedances also note that waters came into contact with combustion materials or other residues (e.g., metal shavings) before flowing into an OWS and subsequently to Outfall 002. The EPA Inspection Team observed metal materials and equipment stored without cover or containment, Facility employees using a metal grinder, and rust colored residue on the impervious surface in the drainage area for Outfall 002 during the Facility walkthrough (refer to Observation 5).

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 on some of the sampling probes at the Facility's internal sampling points. The EPA Inspection Team recommended posting sampling procedures at each monitoring location or at an equally accessible location.

The EPA Inspection Team observed sampling instruments at IWS-603 and IWS-605 without calibration stickers (refer to Appendix B, Photographs 1 through 4). 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.

Because the Permit does not include any composite sampling requirements, the Facility does not use any automatic composite samplers. The EPA Inspection Team noted that all of the Facility's NPDES outfall and sampling points were identified with the appropriate signage.

Wastewater Treatment Plant

At the time of the inspection, one of the three influent wastewater storage tanks (Tank 1) at the Facility's wastewater treatment plant was out of service (refer to Appendix B, Photographs 5 and 6). Facility representatives explained that Tank 1 was drained in preparation to be replaced due to concerns with its structural integrity. Additionally, one the three Nautilus units at the wastewater treatment plant was out of service at the time of the inspection for cleaning and repairs (refer to Appendix B, Photographs 7, 8, and 9). The EPA Inspection Team observed the Facility's two sludge basins, where sludge from the wastewater treatment process is dried out so it can be hauled away for disposal at a landfill. At the time of the inspection, the west sludge basin contained liquid sludge and the east sludge basin had been drained for cleaning (refer to Appendix B, Photographs 10 and 11).

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 receiving water (refer to Appendix B, Photograph 12). Based on previous inspections of the Facility, and discussions with Facility personnel, the level of foaming in the discharge on the day of the CEI was typical.
- Outfall 002 was only observable from a distance of approximately 100 feet. No discharge was visible at the time of the inspection. Large boulders were partially obstructing the outfall. Trash and debris, including filter sock BMPs, were present on the rocks near the outfall (refer to Appendix B, Photographs 13 and 14).
- Outfall 003 was not observable due to its location beneath the barge. No flow was visible from the Outfall 003 observation point (refer to Appendix B, Photographs 15 and 16).

Skimmers and Stormwater Conveyances

The EPA Inspection Team observed the Facility's OWSs #2 and #10. These OWSs were open-top concrete structures with multiple cells departed by baffles. OWS #2 was receiving dry weather flow from a leaking condensate storage tank at the time of the inspection (refer to Observation 4). OWS #10 was discharging at the time of the inspection (refer to Appendix B, Photographs 17 and 18). Facility representatives explained that OWS #10 was receiving dry weather flow from groundwater infiltration in the Facility's stormwater collection system.

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 4. Multiple pieces of Facility equipment appeared to be in need of maintenance at the time of the inspection and were causing leaks of process water. Specifically, the EPA Inspection Team observed the following:

- A visibly corroded condensate storage tank in the southwest area of the Facility was leaking at the base and causing runoff into a storm drain inlet that discharges to OWS #2 and subsequently to Outfall 002 (refer to Appendix B, Photographs 19 through 25). Vegetation was present in the flow path to the storm drain inlet indicating sustained flow (refer to Appendix B, Photograph 22). Following the CEI, Facility representatives provided the EPA Inspection Team with documentation showing that PREPA had requested funding from the Puerto Rico Central Government Engineering and Technical Services Division to replace the tank (refer to Appendix C, Exhibit 5). Facility representatives stated that they hoped to have the work complete by the end of 2022.
- A screen wash driver pump in the southwest area of the Facility was leaking (refer to Appendix B, Photograph 26). Flow had accumulated on the uncovered, impervious surface upgradient from an unprotected storm drain inlet that discharges to OWS #2 and subsequently to Outfall 002 (refer to Appendix B, Photograph 27). Screen wash water was also leaking from a pipe in between the screens and the screen wash driver pumps (refer to Appendix B, Photographs 28 and 29).

Part IV.B.5.i of the Permit (Good Housekeeping) states, “The permittee must keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.”

Observation 5. The Permittee had not implemented good housekeeping practices to comply with the Permit’s good housekeeping requirements and as described in the Facility’s PPP. Specifically, Section 15 of the Facility’s PPP (Housekeeping) describes specific housekeeping policies to “maintain a clean and orderly work environment, which will in turn reduce the potential for spills and releases” (refer Appendix C, Exhibit 3). However, the EPA Inspection Team observed multiple areas of concern with regard to stormwater pollution prevention and good housekeeping at the Facility.

The Permittee had not kept clean all exposed areas that are potential sources of pollutants. Specifically, the EPA Inspection Team observed the following in the southwest area of the Facility. Stormwater from the southwest area of the Facility drains to Outfall 002.

- Metal materials and equipment were stored without cover or containment directly on impervious surface upgradient from unprotected storm drain inlets (refer to Appendix B, Photographs 30 through 33). Rust colored residue had accumulated on the impervious surface (refer to Appendix B, Photographs 31 and 32).

- An unprotected storm drain inlet was partially obstructed by trash and debris (refer to [Appendix B, Photographs 34 and 35](#)).
- Facility employees were using a metal grinder in an equipment maintenance area upgradient from an unprotected storm drain inlet (refer to [Appendix B, Photograph 36](#)). Sediment was accumulated adjacent to the unprotected inlet and floatables and debris were visible on the water surface inside the inlet (refer to [Appendix B, Photograph 37](#)).

Additionally, the Permittee had not kept materials labeled. The EPA Inspection Team observed an unlabeled chemical tote and an unlabeled 55-gallon drum, both containing liquid, in the southwest area of the Facility (refer to [Appendix B, Photographs 38, 39, and 40](#)). The chemical tote was stored in a secondary containment structure that was full of liquid at the time of the inspection (refer to [Appendix B, Photograph 38](#)).

Section 5.0 Closing Conference

On May 19, 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 3:00 PM (AST).