



COMMONWEALTH OF  
**PUERTO RICO**  
Environmental Quality Board

***FINAL TITLE V OPERATING PERMIT  
AIR QUALITY AREA  
ENVIRONMENTAL QUALITY BOARD***



**Permit Number:** PFE-TV-4911-70-1196-0015  
**Date of Receipt of the Application:** November 15, 1996  
**Final Issue and/or Effective Date:** March 16, 2015  
**Expiration Date:** March 16, 2020

*Handwritten signature in blue ink on the left margin.*  
Pursuant to the provisions of Part VI of the Environmental Quality Board Regulations for the Control of Atmospheric Pollution (RCAP) and the provisions of the Code of Federal Regulations (CFR), Title 40, Part 70:

**PUERTO RICO ELECTRIC POWER AUTHORITY  
PALO SECO STEAM POWER PLANT  
TOA BAJA, PUERTO RICO**

hereinafter **PALO SECO STEAM POWER PLANT (PREPA Palo Seco)** or **the permittee**, is authorized to operate a stationary source of air pollutant emissions limited to the units and conditions described in this permit. Until such time as this permit expires, is modified or revoked, **PREPA Palo Seco** may release air pollutants resulting from processes and activities that are directly related to and/or associated with the emission sources, as required, limited or conditioned by this permit, until its expiration date or until the permit is modified or revoked.

The conditions in this permit shall be enforceable by the federal and state governments. Those requirements that may be enforced only by the state government shall be identified as such in this permit. Copy of this permit must be kept in the aforementioned facility at all times.

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**Section I - General Information**

**A. Facility Information**

Company Name: Puerto Rico Electric Power Authority

Postal Address: P.O. Box 364267

City: San Juan

State: Puerto Rico

Zip Code: 00936-4267

Email of the facility: AEE-DPACC@aepr.com

Name of Facility: Palo Seco Steam Power Plant

Location of the Facility: State Road PR-165 Km. 30.8  
Toa Baja, Puerto Rico

Responsible Official: Carlos Castro Montalvo  
Generation Director

Telephone: 787-521-6407, 787-521-6408

Fax: 787-521-6409

Technical Contact Person: Jaime Martínez Cruz  
Head, Palo Seco Steam Plant

Jaime López  
Hydro-Gas Head

Telephone: 787-521-7002  
787-521-7004  
787-521-5162

Fax: 787-521-7005  
787-521-5170

SIC Primary Code: 4911

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## B. Process Description

Palo Seco Steam Power Plant (PREPA Palo Seco) is located on State Road PR-165 Km 30.8 the adjacent to the Palo Seco Ward of the municipality of Toa Baja. PREPA Palo Seco is a plant dedicated to generate electricity. PREPA Palo Seco consists of ten generating units distributed in the following two areas of the plant: steam power plant consisting of four oil-fired steam-electric units (boilers) (PS1, PS2, PS3 and PS4), and one power block consisting of six oil fired gas turbines (PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2) of simple cycle.

The boilers combust primarily No. 6 fuel oil (Bunker C) to generate electricity at a steam turbogenerator. The capacity of each one of the boilers PS1 and PS2 is 857.7 MMBtu/hr. Each boiler PS3 and PS4 have a capacity of 1,971 MMBtu/hr. The no. 6 fuel oil is received by barge, ship or pipeline to the fuel oil reserve tanks and is then transferred to the no. 6 fuel oil service tanks to be burned in the boilers. The combustion flue gases are exhausted to the atmosphere.

Propane in on-site tanks is used to ignite the boilers fuel oil burners. Propane is used only during fuel oil burner start-up, and shutdown of the fuel oil burners in the boilers. During a boiler start-up, No. 2 fuel oil (distillate oil) can be used to warm up the boiler. When the boiler has reached the desired steam conditions, no. 6 fuel oil is fired to continue the operation.

The power block consists of six combustion turbines or gas turbines that combust No. 2 fuel oil to generate electricity. The capacity of each turbine is 301.5 MMBtu/hr. No. 2 fuel oil is received by barge or ship into three tanks which feed the combustion process of the gas turbine units. These tanks can also be arranged to receive fuel directly from fuel delivery trucks or by pipeline.

PREPA Palo Seco plant receives no. 6 and no. 2 fuel oil from ships and barges unloaded at the station's oil discharge docks in the San Juan Bay. The fuel oils are stored in on site tanks prior to being combusted to generate electricity.

PREPA Palo Seco has three emergency engines for three emergency electric generators. Also, the facility has one engine for a fire pump.

As a consequence of operating at its permit level, PREPA Palo Seco is a major source because it has the potential to emit PM<sub>10</sub>, SO<sub>x</sub>, NO<sub>x</sub>, VOC, CO in excess of 100 tons per year, nickel compounds in excess of 10 tons per year, a combination of hazardous atmospheric pollutants in excess of 25 tons per year, and greenhouse gases (GHG) in excess of 100,000 tons per year, expressed as CO<sub>2</sub>e.

**Section II - Description of the Emission Units**

The emission units regulated by this permit are as follows:

Emission Unit	Description	Control Equipment
PS1 and PS2	Two boilers that burn residual fuel with steam/turbo generators. Boilers PS1 and PS2 have a capacity of 857.7 MMBtu/hr each.	None
PS3 and PS4	Two boilers that burn residual fuel with steam/turbo generators. Boilers PS3 and PS4 have a capacity of 1,971 MMBtu/hr each.	None
PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2	It is six oil-fired combustion turbines. Each emission unit is a combustion turbine of simple cycle. The capacity of each turbine is 301.5 MMBtu/hr.	None
GE-PS-1	Electric Generator for emergencies A of 500 kW (670 hp) with an engine of 765 hp, Detroit model 8V2000-R083K36. Use diesel fuel at a rate of 38 gal/hr. Displacement: 2 L/ cylinder (Model year: 2005)	None
GE-PS-2	Electric Generator for emergencies B of 500 kW (670 hp) with an engine of 765 hp, Detroit model 8V2000-R083K36. Use diesel fuel at a rate of 38 gal/hr. Displacement: 2 L/ cylinder (Model year: 2005)	None
GE-GIS-PS-1	Electric Generator for emergencies C de 250 kW, Kohler with an engine of 385 hp, John Deere model 6090HF484. Use diesel fuel at a rate of 17.6 gal/hr. Displacement: 0.98L/cylinder (Model year: 2007)	None
BI-PS-1	Fire Pump for the Fire Fighting System Engine of 208 hp, Cummins model 6BTA5.9-F1. Use diesel fuel at a rate of 10.4 gal/hr. Displacement: 5.88 L/6 cylinders Model year: 1997 Reconstructed: October 13, 2008	None

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### Section III - General Conditions of the Permit

1. **Sanctions and Penalties:** The permittee is obligated to comply with all the terms, conditions, requirements, limitations, and restrictions set forth in this permit. Any violation of the terms of this permit will be subject to administrative, civil or criminal penalties as established in the Puerto Rico Environmental Public Policy Act, Article 16 (Act Number 416, September 22, 2004, as amended).
2. **Right of Entry:** As specified under Rules 103 and 603(c)(2) of the RCAP, the permittee shall allow the EQB or an authorized representative, upon presentation of credentials and other documents as may be required by law, to perform the following activities:
  - (a) Enter upon the permittee's premises where an emission source is located or where emission related activities are conducted, or where records must be kept under the conditions of this permit, under the RCAP, or under the Clean Air Act;
  - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit, under the RCAP, or under the Clean Air Act;
  - (c) Inspect and examine any facility, equipment (including monitoring and air pollution control equipment), practices or operations (including QA/QC methods) regulated or required under this permit; as well as sampling emissions of air quality and fuels; and
  - (d) As authorized by the Clean Air Act and the RCAP, to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.
3. **Sworn Statement:** All reports required pursuant Rule 103(D) of the RCAP (i.e., semiannual monitoring reports and annual compliance certification) shall be submitted together with a sworn statement or affidavit by the Responsible Official or a duly authorized representative. Such sworn statement shall attest to the truth, correctness and completeness of such records and reports.
4. **Data Availability:** As specified under Rule 104 of the RCAP, all emission data obtained by or submitted to the Board, including data reported pursuant to Rule 103 of the RCAP, as well as that obtained in any other way, shall be available for public inspection and may also be made available to the public in any additional manner that the Board may deem appropriate.
5. **Emergency Plan:** As specified under Rule 107 of the RCAP, PREPA Palo Seco shall have available an Emergency Plan which must be consistent with adequate safety practices, and provides for the reduction or retention of the emissions from the plant during periods classified by the Board as air pollution alerts, warnings or emergencies. These plans shall identify the emission sources, include the reduction to be accomplished for each source and the means by which such reduction will be accomplished. These

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plans shall be available for inspection, as required by representatives of the Board at any times.

6. **Compliance Certification:** As specified under Rule 602(C)(2)(ix)(c) of the RCAP, PREPA Palo Seco shall submit each year a compliance certification. This certification must be submitted to both the Board and the U.S. Environmental Protection Agency (EPA)<sup>1</sup> every year no later than the 1<sup>st</sup> of April, covering the previous calendar year. The compliance certification shall include, but is not limited to, the information required under Rule 603(c) of the RCAP as follows:
- a. The identification of each term or condition of the permit that is the basis of the certification; and
  - b. The compliance status. Each deviation shall be identified and considered in the compliance certification; and
  - c. Whether compliance was continuous or intermittent; and
  - d. The methods or other means used for determining the compliance status of the source, with each term and condition, currently and over the reporting period, consistent with sections (a)(3) – (5) of the RCAP; and
  - e. Identification of possible exceptions to compliance, any periods which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (CAM) occurred; and
  - f. Such other facts as the Board may require to determine the compliance status of the source.
7. **Regulation Compliance:** As specified under Rule 115 of the RCAP, any violation to said Regulation, or to any other applicable rule or regulation, shall be grounds for the Environmental Quality Board (EQB) to suspend, modify, or revoke any relevant permit, approval, variance or other authorization issued by the EQB according to the Law of Uniform Administrative Procedures.
8. **Location Approval:** As specified under Rule 201 of the RCAP, nothing in this permit shall be interpreted as authorizing the location or construction of a major stationary source, or the modification of a major stationary source, or a major modification of a significant source, without obtaining first a location approval from the Board and without first demonstrating compliance with the National Ambient Air Quality Standards (NAAQS). This permit does not allow the construction of new minor sources without the required permit under Rule 203 of the RCAP.

<sup>1</sup>The certification to the EQB shall be mailed to: Manager, Air Quality Area, P.O. Box 11488, San Juan, PR, 00910. The certification to the EPA shall be mailed to: Chief, Enforcement and Superfund Branch, CEPD, US EPA- Region II, City View Plaza II Building, Suite 7000<sup>th</sup> Floor, 48 Road 165 Km 1.2, Guaynabo, P.R. 00968-8069.

9. **Open Burning:** As specified under the Rule 402 of the RCAP, the permittee shall not cause or permit the open burning of refuse in their premises except as established under Rule 402 (E) of the RCAP to conduct training or research of fire fighting techniques.
10. **Objectionable Odors:** As specified under Rule 420 of the RCAP, the permittee shall not cause or permit emissions to the atmosphere of any matter which produces *objectionable* odors that can be perceived in an area other than that designated for industrial purposes. (This condition is enforceable only by the State.)
11. **Permit Renewal Applications:** As specified under the Rule 602(A)(1)(iv) of the RCAP, the permittee's applications for permit renewal shall be submitted at least twelve (12) months prior to the date of permit expiration. A responsible official must certify all required applications consistent with paragraph (c)(3) of Rule 602.
12. **Permit Duration:** As specified under Rule 603 of the RCAP, the following terms will apply during the duration of this permit:
- (a) Expiration: This authorization shall have a fixed term of five (5) years. The expiration date will be automatically extended until the Board approves or denies a renewal application (Rule 605(c)(4)(ii) of the RCAP) but only in those cases where the permittee submits a complete renewal application at least twelve months before the expiration date. (Rule 603 (a)(2), Rule 605 (c)(2) and Rule 605 (c)(4) of the RCAP)
- (b) Permit Shield: As specified under Rule 605(c)(4)(i) of the RCAP, the permit shield may be extended until the time it is renewed if a timely and complete renewal application is submitted.
- (c) In the case that this permit is subject to any challenge by third parties, the permit shall remain in effect until the time it is revoked by a court of law with jurisdiction in the matter.
13. **Recordkeeping Requirement:** As specified under Rule 603(a)(4) of the RCAP, PREPA Palo Seco shall retain all required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report or application. PREPA Palo Seco shall maintain readily accessible at the facility, copies of all records of required monitoring information that include the following:
- i. The date, place as defined in the permit, and time of sampling or measurements;
  - ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analysis;
  - iv. The analytical techniques or methods used;
  - v. The results of such analysis; and
  - vi. The operating conditions as existing at the time of sampling or measurement.

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14. **Semiannual Monitoring Reports/Samplings<sup>2</sup>:** As specified under Rule 603(a)(5)(i) of the RCAP, PREPA Palo Seco shall submit the Board, the reports of all required monitoring, every six months or more frequently if required by the EQB or any other underlying applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as established under Rule 602(C)(3) of the RCAP. The report that covers the period from January to June shall be submitted no later than October 1<sup>st</sup> of the same year, and the report covering the period from July to December shall be submitted no later than April 1<sup>st</sup> of the next year. Once the guidelines are developed by the Board, the permittee must use them to complete these reports.
15. **Deviations Reporting due to Emergencies:** As specified under Rule 603(a)(5)(ii)(a) of the RCAP, any deviation resulting from an upset (such as sudden malfunction or breakdown) or emergency conditions, as defined in Rule 603(e) of the RCAP, must be reported within the next 2 working days from the time the emission limits are exceeded due to the emergency, if PREPA Palo Seco wishes to assert the affirmative defense authorized under Rule 603 (e) of the RCAP. If PREPA Palo Seco raises the emergency defense upon an enforcement action, the permittee shall demonstrate that such deviation happens due to an emergency and that the Board was adequately notified. If such emergency deviation last for more than 24 hours, the affected units may be operated until the end of the cycle or 48 hours, what occurs first. The Board may only extend the operation of an emission source in excess of 48 hours, if the source demonstrates to the Board's satisfaction that the National Air Quality Standards have not been exceeded and that there is no risk to the public health.
16. **Deviation Reporting (Hazardous Air Pollutants):** The source shall act as specified in its Emergency Response Plan (established in Rule 107 (C) of the RCAP), when such Plan has shown no significant impact on an area other than those that have been designated for industrial purposes or will cease operations immediately if there is a significant impact on an area other than those that have been designated for industrial purposes (state-only enforceable condition). In accordance with Rule 603(a)(5)(ii)(b) of the RCAP, he shall notify the Board within the next 24 hours if a deviation that results in the release of emissions of hazardous air pollutants for more than occurs an hour in excess of the applicable limit. For the discharge of any regulated air pollutant that continues for more than 2 hours in excess of the applicable limit, the permittee shall notify the Board within 24 hours of the deviation. PREPA Palo Seco shall submit to the Board, within 7 days of the deviation, a detailed written report which includes probable causes, time and duration of the deviation, remedial action taken and the steps you are following to prevent recurrence.
17. **Severability Clause:** As specified under Rule 603(a)(6) of the RCAP, the clauses in this permit are severable. In the event of a successful challenge to any portion of the permit in an administrative or judicial forum, or in the event any of its clauses is held to be

<sup>2</sup> These reports cover two major elements. The first element is the summary of all periodic monitoring / sampling required in this permit. The second element requires that all deviations from permit conditions are clearly identified, summarized and reported to the Board.

invalid, all other portions of the permit shall remain valid and effective, including those related to emission limits, terms and conditions, be they specific or general, as well as monitoring, record keeping and reporting requirements.

18. **Permit Noncompliance:** As specified under Rule 603(a)(7)(i) of the RCAP, the permittee must comply with all conditions of the permit. Permit noncompliance constitutes a violation of the RCAP and will be grounds for taking the appropriate enforcement action, impose sanctions, revoke, terminate, modify, and/or reissue the permit, or to deny a permit renewal application.
19. **Defense not Allowed:** As specified under Rule 603(a)(7)(ii) of the RCAP, PREPA Palo Seco shall not allege as a defense in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
20. **Permit Modification and Revocation:** As specified under Rule 603(a)(7)(iii) of the RCAP, the permit may be modified, revoked, reopened, reissued, or terminated for cause according to the Law of Uniform Administrative Procedures. The filing of a request by PREPA Palo Seco for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
21. **Property Rights:** As specified under Rule 603(a)(7)(iv) of the RCAP, this permit does not convey any property rights of any sort, nor does it grant any exclusive privilege.
22. **Obligation to Furnish Information:** As specified under Rule 603(a)(7)(v) of the RCAP, PREPA Palo Seco shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, PREPA Palo Seco shall also furnish to the Board copies of documents related to this permit.
23. **Prohibition on Default Issuance:** As specified under Rule 605(d) of the RCAP, it shall never be considered that a permit has been issued by default as a result of the Board's failure to take final action on a permit application within 18 months. The Board's failure to issue a final permit within 18 months should be treated as a final action solely for the purpose of obtaining judicial review in a state court.
24. **Administrative Permit Amendments and Permit Modifications:** As specified under Rule 606 of the RCAP, the permit shall not be amended nor modified unless PREPA Palo Seco complies with the requirements for administrative permit amendments and permit modifications as described in the RCAP.
25. **Permit Reopenings:** As specified under Rule 608(a)(1), this permit shall be reopened and revised under the following circumstances:

- (A) Whenever additional applicable requirements under any law or regulation become applicable to PREPA Palo Seco, when the remaining permit term is of three (3) or more years. Such reopening shall be completed eighteen (18) months after promulgation of said applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to Rule 605(c)(4)(i) or Rule 605(c)(4)(ii) of the RCAP.
- (B) Whenever the EQB or the EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit.
- (C) Whenever the EQB or the EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

26. **Changes in Name or Responsible Official:** This permit is issued to **Puerto Rico Electric Power Authority – PREPA Palo Seco Steam Power Plant**. In the event that the company and/or installation change its name, the responsible official must submit an administrative amendment to this permit to reflect the change in name. If the event that the responsible official changes, the new responsible official must submit no later than 30 days after the change, an administrative amendment including a sworn statement in which he/she accepts and promises to comply with all the conditions of this permit.

27. **Changes in Ownership:** This permit is issued to **Puerto Rico Electric Power Authority – PREPA Palo Seco Steam Power Plant**. In the event that the company and/or installation is transferred to a different owner or change operational control and the Board determines that no other change in the permit is necessary, the new responsible official must submit an administrative amendment. The administrative amendment shall include a sworn statement in which the new responsible official accepts and promises to comply with all the conditions of this permit, and a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee. This is not applicable if the Board determines that changes to the permit are necessary.

28. **Renovation Work/ Demolition:** The permittee shall comply with the provisions set forth in 40 CFR §61.145 and §61.150, and Rule 422 of the RCAP, and Regulations for the Processing of General Permits (General Permit for the Handling of Asbestos Containing Materials) when doing renovation or demolition activities of asbestos containing materials at the facility.

29. **Requirements for Refrigerants (Climatologic and Stratospheric Ozone Protection):**

- a) In the event that the permittee has equipment or appliances, including air conditioning units, which use Class I or II refrigerants as defined in 40 CFR Part 82, Subpart A, Appendices A and B, PREPA Palo Seco shall take the necessary measures to ensure that all maintenance, service or repair services performed are done so according to the practices, certification and personnel requirements,

disposition requirements, and recycling and/or recovery equipment certification requirements specified under 40 CFR Part 82, Subpart F.

- b) Owners/ operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
- c) Service on Motor Vehicles: If PREPA Palo Seco performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term motor vehicle as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.

30. **Labeling of Products Using Ozone-Depleting Substances:** PREPA Palo Seco shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, subpart E.

- a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
- b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
- c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
- d) No person may modify, remove or interfere with the required warning statement except as described in §82.112.

31. **Compliance Clause:** Under no circumstances does compliance with this permit exempt PREPA Palo Seco from complying with all other applicable state or federal laws, regulations, permits, administrative orders or applicable court orders.

32. **Annual Fee:** As specified under Resolution R-06-17-8<sup>3</sup>, **Puerto Rico Electric Power Authority** shall pay an annual fee of **\$1,500,000.00**, or the charge established by the Board through resolution for all of the facilities included in the agreement between the Environmental Quality Board and Puerto Rico Electric Power Authority. This annual fee

<sup>3</sup> Resolution R-06-17-8 (Solicitud de Interpretación de Resolución RO-06-2 sobre Pago de los cargos de operación para permisos Título V) issued on June 5, 2006.

shall be submitted in two terms, the first payment must be submitted, on or before June 30 and the second payment, on or before December 30 of each year.

33. **Risk Management Plan (RMP):** If during the effectiveness of this permit, PREPA Palo Seco is subject to the 40 CFR Part 68, PREPA Palo Seco shall submit a Risk Management Plan (RMP) according with the compliance schedule in the 40 CFR §68.10. If during the effectiveness of this permit, PREPA Palo Seco is subject to the 40 CFR Part 68, PREPA Palo Seco shall submit a compliance certification with the requirements of part 68 as part of the annual compliance certification required under 40 CFR part 70, including the recordkeeping and the RMP.
34. **General Duty Requirements:** PREPA Palo Seco has the general obligation of identifying hazards which may result from accidental releases of any controlled substance under section 112(r) of the Clean Air Act or any other extremely hazardous substance in a process, using appropriate hazard assessment techniques, designing, maintaining and operating a safe facility and minimizing the consequences of accidental releases if they occur as required in section 112(r)(1) of the Act and Rule 107(D) of the RCAP.
35. **Reports:** Unless stated otherwise specifically provided in a condition, any requirement of information submittal to the Board shall be addressed to: Manager, Air Quality Area, P.O. Box 11488, San Juan, P.R. 00910.
36. **Particulate Fugitive Emissions:** As established in Rule 404 of the RCAP, PREPA Palo Seco shall not cause or permit:
- a) any materials to be handled, transported or stored in a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished, without taking reasonable precautions to prevent particulate matter from becoming airborne.
  - b) the discharge of visible emissions of fugitive dust beyond the boundary line of the property on which the emissions originate.
37. **Roof Surface Coating:** This is a state-only requirement. PREPA Palo Seco shall not cause or permit the roof surface coating by applying hot tar or any other coating material containing organic compounds without previous notification to the Board. The use of used oil or hazardous waste for roof surface coating is prohibited.
38. **Storage Tanks:** PREPA Palo Seco shall keep records of all fuel oil storage tanks listed as insignificant activities showing the dimensions of each tank and an analysis showing the capacity of each tank pursuant to the 40 CFR §60.116b. This documentation shall be readily available at any time for inspection of EQB personnel and shall be kept onsite for the life of the tank.
39. **Emissions Calculations:** PREPA Palo Seco shall submit, on the first day of April of each year, the actual or permissible emissions calculations for the previous natural year. The emissions calculations shall be submitted on the forms prepared by the Board for this

purpose and the responsible official must certify all the information submitted as true, correct and representative of the permitted activity.

40. **Amendments or New Regulations:** In case a new regulation is established or an existing one is amended (state or federal) and the Board determines that it applies to the facility, PREPA Palo Seco shall comply with the provisions of this regulation or amendment within the time specified in the applicable state or federal regulations.

41. **Reservation of Rights:** Except as expressly provided in this permit:

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- a) Nothing herein shall prevent EPA or the Board from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the Title V permit, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties and fines.
  - b) Nothing herein shall be construed to limit the rights of EPA or the Board to undertake any criminal enforcement activity against PREPA Palo Seco or any person.
  - c) Nothing herein shall be construed to limit the authority of EPA or the Board to undertake any actions in response to conditions that present an imminent and substantial endangerment to public health or welfare, or the environment.
  - d) Nothing herein shall be construed to limit PREPA Palo Seco's rights to administrative hearing and judicial appeal of termination/ revocation/ disputes over modification/ denial actions in accordance with regulations and the Environmental Public Policy Act.

#### Section IV - Permissible Emissions

A. The permissible emissions authorized under this permit are mentioned below. The source shall certify annually that its actual emissions do not exceed the permissible emissions. This certification shall be based on the actual operation of the natural previous year and using the emission factors of AP-42 (Compilation of Air Pollutant Emission Factors) effective at the time of completing the TV application, that their emissions do not exceed the permissible emissions.

Pollutants	Permissible Emissions (tons /year)
PM	1,387.38
SO <sub>2</sub>	17,464.39
NO <sub>x</sub>	12,276.89
CO	856.94
VOC	130.04
Lead	0.37

Pollutants	Permissible Emissions (tons /year)
CO <sub>2</sub> e	5,418,568.60

Hazardous Air Pollutants (HAP's)	Permissible Emissions (tons /year)
<i>Nickel compounds</i>	14.04
<i>Manganese compounds</i>	6.94
<i>Formaldehyde compounds</i>	7.74
<i>Toluene</i>	1.03
<i>Polycyclic organic matter (POM)</i>	0.81
<i>Total HAP's</i>	36.78

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**Section V - Specific Permit Conditions**

**A. Normal operating scenario: PS1, PS2, PS3 and PS4 (Oil-fired boiler with steam/turbogenerator)**

The following table contains a summary of applicable requirements, as well as the test methods, for emission units PS1, PS2, PS3 and PS4 identified in Section II of this permit. The permit conditions include additional applicable requirements.

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
Particulate Matter Emission Limits	PM	0.3	Lbs/MMBtu	Fuel type	Monthly	Fuel type	Monthly
				Method 5	During the first year of the permit.	Record book	No later than sixty (60) days after the performance of the test.
Opacity Limit	Visible Emissions	20	Percent	COMS and Oxygen CEMS	Continuous or less frequent than every 15 seconds	Data acquisition System with Backup	See Conditions (A)(b)(iii)-(vi) below
				Method 9	Every two weeks	Record book	

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
Fuel consumption limit	Fuel oil no. 6	330,392,160	Gallons per year	Consumption	Daily	Record book	Monthly
	Propane (igniter fuel)	86,623	Gallons per year	Consumption	Daily	Record book	Monthly
	Diesel (warm-up)	377,160	Gallons per year	Consumption	Daily	Record book	Monthly
Sulfur content limit	Fuel oil no. 6 (normal scenario) Diesel (warm-up)	0.50	Percent by weight	Fuel Analysis	With every fuel receipt and upon any fuel blending	Analysis results	Monthly
	Propane	0.0187					
Asphaltene content limit	Asphaltene content	8	Percent by weight	Fuel analysis	With every fuel receipt and upon any fuel blending	Analysis results	Quarterly
Vanadium content limit	Vanadium content	150	ppmw	Fuel analysis	With every fuel receipt and upon any fuel blending	Analysis results	Quarterly
Time Between Water Washings	-	18	Months	Calendar	One water wash per outage	Record Book	Quarterly

**a. PARTICULATE MATTER EMISSION LIMIT:**

- (i) The permittee shall not cause nor permit the emission of particulate matter, in excess of 0.3 lb/MMBtu of heat input from PS1, PS2, PS3, and PS4. [Rule 406 of the RCAP]
- (ii) The permittee shall perform a performance test on each unit during the first year of the permit using Method 5 of the 40 CFR part 60, Appendix A in order to verify compliance with the standard. [Rule 603(a)(3) of the RCAP].
- (iii) The permittee must submit a test protocol to EQB 30 days prior to the start of the test, a detailed test protocol describing all test equipment, procedures and Quality Assurance (QA) measures to be used. The protocol must be specific to the test, facility, operating conditions and parameters to be measured. [Rule 106 (C) of the RCAP]

- (iv) The permittee must submit a written notification 15 days prior of the performance test in order to allow EQB to assign an observer. [Rule 106 (D) of the RCAP]
- (v) The permittee must submit a final report within 60 days after the performance test. [Rule 106 (E) of the RCAP]
- (vi) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records for required monitoring and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report or application.

**b. OPACITY LIMIT:**

- (i) In accordance with Rule 403(A) of the RCAP, the permittee shall not exceed the opacity limit of 20% (6-minute average), except for one period of not more than four minutes in any consecutive thirty (30) minute interval when the opacity shall not exceed 60%.
- (ii) The permittee shall calibrate, maintain, and operate the following:
  - (A) A continuous opacity monitoring system (COMS) to measure and record the percent opacity in each boiler exhaust stack; and
  - (B) An oxygen continuous emission monitoring system (CEMS) to measure and record the percent oxygen in each boiler exhaust stream.
- (iii) The permittee shall perform bi-weekly readings of each emission point (Units PS1, PS2, PS3 and PS4) according to 40 C.F.R. Part 60, Method 9. The readings shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. If opacity is measured at any time to be greater than 20%, either by a Method 9 visible emission reading or a COMS, all possible corrective actions shall be taken as soon as an exceedance of the opacity limit at Units PS1, PS2, PS3 and/or PS4 is observed.
- (iv) The permittee shall submit a written report of all excess emissions to EQB for every calendar quarter. All quarterly reports shall be postmarked on or before the 30th day following the end of each quarter and shall include the information specified below:
  - (A) The magnitude of excess emissions computed in accordance with 40 C.F.R. §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;
  - (B) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments;

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- (C) The optimal operating range(s) for the percent oxygen used during the quarter with the date(s) the ranges became effective;
  - (D) The oxygen CEMS readings at the times opacity exceeds 20% (6-minute average); and
  - (E) A written report of any oxygen measurements taken during optimization and verification studies along with opacity measurements.
- (v) Within thirty (30) days of the end of each calendar quarter, the permittee shall submit to the EQB all of the Method 9 reports for visible emissions readings taken during the previous quarter.
- (vi) In accordance with 40 CFR §60.7(d), the summary report form shall contain the information and be in the format shown in figure 1 of 40 CFR §60.7(d), unless otherwise specified by the Administrator.
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- (A) If the total duration of excess emissions for the reporting period is less than 1% of the total operating time for the reporting period and COMS downtime for the reporting period is less than 5% of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in 40 CFR §60.7(c) need not be submitted unless requested by the Administrator.
  - (B) If the total duration of excess emissions for the reporting period is 1% or greater of the total operating time for the reporting period, or the total COMS downtime for the reporting period is 5% or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in 40 CFR §60.7(c) shall both be submitted.
- (vii) In accordance with Rule 603(a)(4)(i) of the RCAP, the permittee shall retain opacity and oxygen monitoring records that include:
- (A) The date, place as defined in the permit, and time of sampling or measurements;
  - (B) The date(s) analyses were performed;
  - (C) The company or entity that performed the analysis;
  - (D) The analytical techniques or methods used;
  - (E) The results of such analysis; and
  - (F) The operating conditions as existing at the time of sampling or measurement.
- (viii) In accordance with Rule 603(a)(4)(ii) of the RCAP, the permittee shall keep all records of required monitoring data and supporting information for a period of five (5) years from

the date of the monitoring sample, measurement, report, or application. This includes a record of visible emissions readings by Method 9, COMS opacity records, and CEMS oxygen content records. Records shall contain the dates and times of inspections, as well as information about any corrective measures taken.

**c. FUEL CONSUMPTION LIMIT:**

(i) The permittee shall not exceed the total consumption limit for No. 6 fuel oil of **330,392,160 gallons** for any period of 12 consecutive months for the units PS1, PS2, PS3 and PS4. The fuel consumption for any consecutive 12-month period shall be calculated by adding the monthly consumption for the unit to the total fuel consumption for the unit for the previous 11 months.

(ii) The permittee shall not exceed the total consumption limit for propane of **86,623 gallons** for any period of 12 consecutive months only for the ignition of units PS1, PS2, PS3 and PS4. The permittee shall not exceed the total consumption limit for diesel of **377,160 gallons** for any period of 12 consecutive months only for the warm-up of units PS1, PS2, PS3 and PS4. The consumption for each fuel for any consecutive 12-month period shall be calculated by adding the monthly consumption for the unit to the total fuel consumption for the unit for the previous 11 months.

(iii) The levels of the fuel tank must be measured monthly and the amount of fuel that is received must be measured and recorded each time that the fuel is received. The amount of fuel consumption will be determined using the measurement in the levels of tank and the amount of fuel is received during this month.

(iv) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records of required monitoring data and supporting information for a period of 5 years from the date of the monitoring sample, measurement, report or application. These shall include a record of the monthly and annual fuel consumption reports.

(v) The permittee shall submit, with each annual compliance certification, an annual report summary indicating the fuel consumption of each boiler in term of the monthly and annual consumption.

(vi) The permittee shall only burn in the boilers the fuels specified in this permit for the purposes (normal operation, startup, warmup, etc.) indicated for each one. No solid waste or solid material will be allowed to be combusted in these boilers.

**d. SULFUR CONTENT LIMIT:**

(i) To comply with Rule 403 of the RCAP, the permittee shall not burn or allow the use of any no. 6 fuel oil or lighter<sup>4</sup> (Lighter means only fuel oil no. 2 for heating boilers.) in

<sup>4</sup>Lighter fuel means fuel oil no. 1, 2, 4 or 5.

Units PS1, PS2, PS3 and PS4, with a sulfur content which exceeds 0.50% by weight. [U.S. v. PREPA, Consent Decree, Civil Action No. 93-2527 CCC]

- (ii) Only the use of propane gas for ignition of the fuel oil burners of the PS1, PS2, PS3 and PS4 units is allowed. The permittee shall not burn or allow the use of propane in the four units with a sulfur content that exceeds 0.0187% by weight.
- (iii) The permittee, a service contractor retained by the permittee, or any other qualified agency shall sample the fuel and/or verify sulfur content from supplier's receipt or invoice upon every delivery for transfer to the facility's storage tanks. The fuel sampling shall include but not be limited to determining the fuel's sulfur content (% by weight). The compliance with the standard of sulfur content shall be determined using the methods established in ASTM 4294.
- (iv) Prior to combustion, the permittee shall analyze the composition of any fuel blended after the receipt of shipment (including but not limited to blending due to additions to reserve tanks or mixing of fuel from various plant locations). The fuel sampling shall include but not be limited to determining the sulfur content (% by weight).
- (v) For Units PS1, PS2, PS3 and PS4, the permittee shall submit a monthly report indicating on a daily basis the sulfur content (percent by weight) in the fuels burned or combusted by each unit during the reporting period and the amount of fuel burned at each unit. This report shall be submitted to EQB to the attention of the Chief of the Validation and Data Management Division. All quarterly reports shall be postmarked on or before the thirtieth (30<sup>th</sup>) day following the end of each calendar quarter. [Rule 410 of the RCAP]
- (vi) In accordance with Rule 603(a)(4)(i) of the RCAP, the permittee shall retain monitoring records that include:
- i. The date, place as defined in the permit, and time of sampling or measurements;
  - ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analysis;
  - iv. The analytical techniques or methods used;
  - v. The results of such analysis; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- (vii) In accordance with Rule 603(a)(4)(ii) of the RCAP, the permittee shall keep all records of required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report, or application. This includes records of the sulfur content (% by weight) of received fuel shipments, and the sulfur content of consumed fuels.
- (viii) The permittee shall submit, with each annual compliance certification, a summary of the reports for that year indicating the sulfur content (% by weight).

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The word "fuel" written vertically.  
A signature or scribble below "fuel".

**e. ASPHALTENE CONTENT LIMITS:**

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- (i) To assure compliance with Rule 403 of the RCAP and according to a February 3, 1994 agreement between the EQB and PREPA, the permittee shall not burn or allow the use of any fuel, in any fuel burning equipment, with an asphaltene content that exceeds 8% by weight.
  - (ii) The permittee, a service contractor retained by the permittee, or any other qualified agency shall sample the fuel and/or verify asphaltene content from supplier's invoice upon every delivery for transfer to the facility's storage tanks. The fuel sampling shall include but not be limited to determining the fuel's asphaltene content (% by weight), using either method IP 143 or ASTM 3279 for compliance purposes.
  - (iii) Prior to combustion, the permittee shall analyze the composition of any fuel blended after the receipt of shipment (including but not limited to blending due to additions to reserve tanks or mixing of fuel from various plant locations). The fuel sampling shall include but not be limited to determining the asphaltene content (% by weight).
  - (iv) For Units PS1, PS2, PS3 and PS4, PREPA Palo Seco shall submit a quarterly report indicating on a daily basis the asphaltene content (percent by weight) in the fuels burned or combusted and the amount of fuel burned at each unit. This report shall be submitted to the EQB to the attention of the Chief of the Validation and Data Management Division. All quarterly reports shall be postmarked on or before the thirtieth (30<sup>th</sup>) day following the end of each calendar quarter.
  - (v) In accordance with Rule 603(a)(4)(i) of the RCAP, the permittee shall retain monitoring records that include:
    - i. The date, place as defined in the permit, and time of sampling or measurements;
    - ii. The date(s) analyses were performed;
    - iii. The company or entity that performed the analysis;
    - iv. The analytical techniques or methods used;
    - v. The results of such analysis; and
    - vi. The operating conditions as existing at the time of sampling or measurement.
  - (vi) In accordance with Rule 603(a)(4)(ii) of the RCAP, the permittee shall keep all records of all required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report, or application. This includes records of the asphaltene content (% by weight) of received fuel shipments, and the asphaltene content (% by weight) of consumed fuels.
  - (vii) The permittee shall submit, with each annual compliance certification, a summary of the reports for that year indicating the asphaltene content (% by weight).

**f. VANADIUM CONTENT LIMITS:**

- (i) To assure compliance with Rule 403 of the RCAP, the permittee shall not burn or allow the use of any fuel, in any fuel burning equipment, with a vanadium content which exceeds 150 ppmw.
- (ii) The permittee, a service contractor retained by the permittee, or any other qualified agency shall sample the fuel and/or verify vanadium content from supplier's invoice upon every delivery for transfer to the facility's storage tanks. The fuel sampling shall include but not be limited to determining the vanadium content (ppmw), using method ASTM D1548, ASTM D5708, and/or ASTM D5863 (Test Method A) for compliance purposes.
- (iii) Prior to combustion, the permittee shall analyze the composition of any fuel blended after the receipt of shipment (including but not limited to blending due to additions to reserve tanks or mixing of fuel from various plant locations). The fuel sampling shall include but not be limited to determining the vanadium content (ppmw).
- (iv) For Units PS1, PS2, PS3 and PS4, PREPA Palo Seco shall submit a quarterly report indicating on a daily basis the vanadium content (ppmw) in the fuels burned or combusted and the amount of fuel burned at each unit. This report shall be submitted to EQB to the attention of the Chief of the Validation and Data Management Division. All quarterly reports shall be postmarked on or before the thirtieth (30<sup>th</sup>) day following the end of each calendar quarter.
- (v) In accordance with Rule 603(a)(4)(i) of the RCAP, the permittee shall retain monitoring records that include:
- i. The date, place as defined in the permit, and time of sampling or measurements;
  - ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analysis;
  - iv. The analytical techniques or methods used;
  - v. The results of such analysis; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- (vi) In accordance with Rule 603(a)(4)(ii) of the RCAP, the permittee shall keep all records of all required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report, or application. This includes records of the vanadium content (ppmw) of received fuel shipments and the vanadium content (ppmw) of consumed fuels.
- (vii) The permittee shall submit, with each annual compliance certification, a summary of the reports for that year indicating the vanadium content (ppmw).

**g. WATER WASHING DURING ENVIRONMENTAL OUTAGE:**

- (i) To assure compliance with Rule 403 of the RCAP, the permittee shall water wash Units PS1, PS2, PS3 and PS4 no less than one (1) time every eighteen (18) months. Upon

agreement of PREPA, the EQB and the U.S. EPA, this permit requirement may be administratively revised to include water washing of Units PS1, PS2, PS3 and/or PS4 no less than one (1) time every twenty-four (24) months. The environmental outage will include cleaning and maintenance of the gas-side of the boiler including combustion sensitive equipment such as burners and fuel oil handling equipment that can affect compliance with Rules 403 or 404 of the PRCAP and can be more readily inspected during a planned outage than during operation of the boiler.

(ii) In accordance with Rule 603(a)(4)(i) of the RCAP, the permittee shall retain monitoring records that include:

- i. The date, place as defined in the permit and time of sampling or measurements related to water washing;
- ii. The date(s) water washes were performed;
- iii. The company or entity that performed the water wash;
- iv. The techniques or methods used;
- v. The results of such water wash; and
- vi. The operating conditions existing at the time of sampling or measurement or water wash.

(iii) In accordance with Rule 603(a)(4)(ii) of the RCAP, the permittee shall keep all records of all required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report, or application. This includes a record of water washes which contains the dates and times of washes, as well as information about any corrective measures taken.

**h. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS: COAL-AND OIL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS CONTAINED IN 40 CFR PART 63 SUBPART UUUUU**

(i) The four boilers (PS1, PS2, PS3, and PS4) are affected by the applicable requirements of the National Emission Standards for Hazardous Air Pollutants: Coal -and Oil -Fired Electric Utility Steam Generating Units contained in 40 CFR part 63 Subpart UUUUU, known as the Mercury and Air Toxics Control Standards (MATS). The affected units must demonstrate compliance with these regulations and requirements outlined in the conditions under V.A.h., on or before **April 16, 2015**, or by the date specified in the extension or extensions of compliance that are granted by the Board Environmental Quality and the federal Environmental Protection Agency under 40 CFR §63.6(i).

(ii) In accordance with Section 63.9991 (a)(1) of 40 CFR , the permittee shall comply with each emission limit and each applicable standard of practice work as specified in Table 2, paragraph 5 and Table 3, paragraphs 1, 3, and 4 of 40 CFR part 63 Subpart UUUUU for PS1 , PS2 , PS3 and PS4 units. The permittee shall comply with the following applicable emission limits for existing boilers PS1, PS2, PS3, and PS4:

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- a. Filterable particulate matter (PM): 0.030 lb / MMBtu or 0.30 lb / MWh<sup>5</sup>
  - b. Hydrochloric acid (HCl): 0.00020 lb / MMBtu or 0.0020 lb / MWh
  - c. Hydrofluoric acid (HF): 0.000060 lb / MMBtu or 0.00050 lb / MWh
  - d. In accordance with Section 63.10000 (c) (2) (iv) if any of the units is designated in the subcategory of limited use (limited-use liquid oil-fired subcategory) as defined in Section 63.10042 of 40 CFR, the unit not be subject to the emission limits set out in subsections (h)(ii)(a) to (c) of this section V(A) are from Table 2 of the UUUUU Subpart of Part 63 of 40 CFR, but must meet the requirements of practical work performance tune-up in Table 3, paragraphs 1, 3, and 4 of 40 CFR part 63 Subpart UUUUU.
- (iii) The permittee shall comply with each applicable operating limit as specified in Table 4 of this subpart. [Section 63.9991 (a) (2) of 40 CFR]
  - (iv) The permittee shall meet the general requirements as described in section 40 CFR 63.10000.
  - (v) The permittee shall comply with the requirements applicable initial compliance as specified in section 40 CFR 63.10005.
  - (vi) The permittee shall comply with the requirements of initial compliance with the emission limits and work practice applicable as specified in section 40 CFR 63.10011.
  - (vii) Continuous compliance shall be demonstrated as applicable and as specified in the sections 63.10006, 63.10007, 63.10009, 63.10010, 63.10020, 63.10021, 63.10022 and 63.10023 of 40 CFR.
  - (viii) The permittee shall comply with the applicable notices and reports as specified in Sections 63.10030, 63.10031, 63.10032, and 63.10033 of 40 CFR.
  - (ix) The permittee shall comply with the general provisions of Sections 63.1 through Section 63.15 applicable, which are included in Table 9 of 40 CFR Subpart UUUUU. [40 CFR Section 63.10040]
  - (x) If the Puerto Rico Electric Power Authority requests an Extension of Compliance to the Environmental Quality Board under section 112 (i)(3)(B) of the Clean Air Act to extend to a fourth year date enforcement UUUUU Subpart of Part 63 of 40 CFR (MATS) and if the Compliance Extension is granted by the Board, the compliance date will be **April 16, 2016**, and the permittee shall submit a revision to its Title V operating permit to incorporate the conditions of the Extension of Compliance, a term not exceeding 60 days from the granting of the Extension of Compliance.

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<sup>5</sup> Gross electric output.

(xi) The deadline to apply for Extensions of Compliance to the Environmental Quality Board for MATS is **December 17, 2014**. To request an Extension of Compliance with the emission standards under subpart UUUUU, the permittee must submit a written document addressed to the Board to include all information required in Section 63.6 (i) (6) of 40 CFR. This includes;

(A) A description of the controls to be installed to meet the standard;

(B) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:

(1) The date by which on-site construction, installation of emission control equipment, or a process change is planned to be initiated, and

(2) The date on which final compliance is to be achieved.

(3) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and

(4) The date on which final compliance is to be achieved.

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(xii) The request for a Compliance Extension in accordance with 40 CFR Section 63.6(i)(5) shall include all information necessary to demonstrate to the satisfaction of the Board that the control equipment or process changes to control the same pollutant (or stream of pollutants) that would be controlled by the source by the relevant emission standard.

(xiii) If the Puerto Rico Electric Energy Authority requests an Order under Section 113 (a) of the Clean Air Act to the Federal Environmental Protection Agency to extend to a fifth year the compliance date for 40 CFR Part 63 Subpart UUUUU, and if it is granted, the permittee must submit a revision to the Title V Operating Permit to incorporate the conditions of the Administrative Order approving the Extension of Compliance in a term not exceeding 30 days from the issuance of the Administrative Order. The deadline to request EPA an Administrative Order for the Compliance Extension of MATS date, is not later than 180 days from the compliance date of MATS. The permittee must comply with all procedures and information requirements set out in the EPA's Memorandum<sup>6</sup> of Office of Enforcement and Compliance Assurance (OEACA Policy Memorandum) of December 16, 2011.

**i. Monitoring Requirements for PS1, PS2, PS3 and PS4 Pursuant to Rule 403**

(A) The following monitoring requirements apply to units PS1, PS2, PS3 and PS4 (hereinafter generating unit) with regards to the Special Condition for Opacity pursuant to Rule 403 of the RCAP.

<sup>6</sup> The Environmental Protection Agency's Enforcement Response Policy for Use of Clean Air Act Section 113(a) Administrative Orders In Relation To Electric Reliability And The Mercury and Air Toxics Standard.

1. Optimization

a. PREPA Palo Seco shall establish and maintain optimal operating ranges that assure compliance with Rule 403 of the RCAP. PREPA Palo Seco shall review and revise such ranges as necessary depending on operating conditions of the boiler. The optimal operating ranges shall be established at fixed loads (50%, 75% and 100% maximum continuous rating), frequency control and sootblowing modes for the following parameters:

- (1) minimum and maximum percent oxygen levels;
- (2) average cold end air heater temperature, minimum degrees Fahrenheit;
- (3) atomizing steam-to-oil pressure differential, minimum psiad<sup>7</sup>;
- (4) sootblower header steam pressure, minimum psiag<sup>8</sup> (during sootblowing only); and
- (5) fuel viscosity at burner header, maximum ssu<sup>9</sup>.

b. PREPA Palo Seco shall maintain the established optimal operating ranges and shall not operate any generating unit outside of the optimal operating ranges established for any parameter set forth above in paragraph 1.a. The requirements of this paragraph shall not apply during the following periods:

- (1) start up or shutdown (loads below 50%) periods for which operating ranges do not apply; or
- (2) malfunction<sup>10</sup> periods; or
- (3) during any period, as necessary but not to exceed fifteen (15) minutes, in which PREPA Palo Seco is taking a burner elevation in or out of service in conformance with best practices.

c. Within twenty four (24) hours from the onset of the malfunction period, the permittee shall assess whether operation of an affected generating unit within the previously established optimal operating ranges is appropriate for the period of malfunction. If PREPA Palo Seco determines that operation within the previously established optimal operating ranges is inappropriate, no later than 120 hours from the onset of the malfunction period, PREPA Palo Seco shall modify the previously established optimal

<sup>7</sup> Psiad, pound per square inch, differential

<sup>8</sup> Psiag, pound per square inch, gauge

<sup>9</sup> SSU, Saybolt Universal Seconds

<sup>10</sup> Malfunction shall mean any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

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operating ranges and maintain any optimal operating range modified for the duration of the period of malfunction.

**2. Continuous Monitoring**

a. The permittee shall install, repair, replace, calibrate and test, in accordance with the table provided below and/or manufacturer's recommendations, the following monitors:

- (1) continuous oxygen;
- (2) average cold end air heater temperatures;
- (3) differential pressure across air heaters;
- (4) atomizing steam/fuel oil differential pressure at burner header;
- (5) sootblower steam pressure at header;
- (6) fuel viscosity;
- (7) furnace pressure;
- (8) fuel flow rates;
- (9) gross power in kilowatts;
- (10) feedwater temperature economizer inlet; and
- (11) opacity monitors (after installation as addressed in paragraph 3).

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b. The permittee shall measure, average, record, calibrate and conduct quality assurance testing for the monitors required above in accordance with the table below. Such activities shall be conducted in a manner consistent with recognized electrical generating industry practices and standards that include manufacturer's recommendations and standard engineering procedures.

Continuous Monitoring Requirements				
Monitor	Measurement Frequency	Averaging Frequency	Recording Frequency	Quality Assurance
Oxygen	Continuously or no less frequently than every 15 sec	6 minutes	12-minute average	As per 40 CFR Part 60 Appendix F
Opacity	Continuously or no less frequently than every 10 sec	6 minutes	6-minute average and 10 sec	As per 40 CFR Part 51 Appendix M, Method 203
Average Cold End	Continuously	None	Hourly	Yearly as per

Continuous Monitoring Requirements				
Monitor	Measurement Frequency	Averaging Frequency	Recording Frequency	Quality Assurance
Air Heater Temperatures				OPM <sup>11</sup>
Differential Pressure Across Air Heaters	Continuously	None	Hourly	Yearly as per OPM
Atomizing Steam/Fuel oil Differential Pressure at Burner Header	Continuously	None	Hourly	Yearly as per OPM
Sootblower Steam Pressure	Continuously by Electronics	None	None	Yearly as per OPM
Fuel viscosity	Continuously	None	Hourly	Yearly as per OPM
Furnace Pressure	Continuously	None	Hourly	Yearly as per OPM
Fuel Flow Rate	Continuously	None	Continuously	Yearly as per OPM
Gross Power	Continuously	None	Continuously	Yearly as per OPM
Feedwater Temperature at Economizer Inlet	Continuously	None	Hourly	Yearly as per OPM

- c. The permittee shall calibrate, operate, performance test and conduct quality assurance procedures for each oxygen monitor in accordance with 40 CFR Part 60 Appendix F.
- d. Within sixty (60) days after installation in accordance with paragraph 3 of Section V.A.2.(A), PREPA shall performance test each opacity monitor in accordance with 40 CFR Part 60 Appendix B, Performance Specification 1. Upon completion of the performance test, PREPA shall calibrate and operate each opacity monitor in accordance with 40 CFR Part 51 Appendix M, Method 203.
- e. In addition, following performance testing and calibration, conducted pursuant to paragraph 2.d above, PREPA Palo Seco shall perform ongoing quality assurance assessments for each opacity monitor, in accordance with 40 CFR Part 51 Appendix M, Method 203.
- f. For the monitors required above by paragraph 2.a (2) through 2.a (11), PREPA Palo Seco shall periodically ensure that zero or span drifts do not exceed 3% of the upper end of the optimal operating range.

<sup>11</sup> OPM is an abbreviation for Operations and Preventive Maintenance that is required by paragraph 6 of this part.

g. PREPA Palo Seco shall:

- (1) for the data generated by the monitors identified in paragraph 2.a. above, observe the monitoring data generated in order to ensure that the optimal operating ranges are maintained to assure compliance with the opacity limit;
- (2) calculate, on a monthly basis, the heat rate of each generating unit (Btu/kilowatt hour);
- (3) while sootblowing, compare the sootblowing steam pressure data with the optimal operating range for sootblowing; and
- (4) at a minimum, install alarms in the control rooms for monitors listed above in subparagraphs 2.a.(1), (4) and (7), and install, in the control rooms, alarms for opacity monitors in accordance with paragraph 3 of this Part. These alarms shall alert an operator when a generating unit is operating outside any optimal operating range established. With respect to the monitor listed above in paragraph 2.a (10), PREPA shall ensure that each generating unit is equipped, at a minimum, with an alarm that shall notify an operator when the feed water temperature at the economizer inlet is below the optimal temperature range.

3. **Opacity Monitor Installation**

- a. PREPA Palo Seco shall install **new** opacity monitors at the stacks of each generating unit and operating unit and operate and conduct performance tests and calibration of such monitors in accordance with paragraphs 2 and 6 of this Part in order to ensure long-term operation of each generating unit in compliance with Rule 403 of the RCAP.
- b. Upon completion of installation of an opacity monitor, PREPA Palo Seco shall install, in the control room for such monitor, an alarm for such monitor.

4. **Fuel Quality**

- a. The permittee shall sample and analyze the following fuel parameters in accordance with the method of analysis set forth below. All other sampling and analysis required shall be conducted in accordance with appropriate ASTM or IP Methods.
  - (1) asphaltenes: IP 143 or ASTM 3279;
  - (2) sulfur: ASTM D4294;
  - (3) vanadium: ASTM D1548; and
  - (4) viscosity: ASTM D445 or ASTM D88.

b. Prior to receipt of any shipment of fuel, PREPA Palo Seco shall receive from the fuel supplier a certified laboratory analysis of the fuel to be delivered for the following parameters:

- (1) gross heat content, Btu/lb;
- (2) API gravity;
- (3) viscosity (Saybolt @122°F);
- (4) asphaltenes, ppmw;
- (5) sulfur, wt %;
- (6) vanadium, ppmw;
- (7) sodium plus potassium, ppmw;
- (8) calcium, ppmw;
- (9) ash, wt %;
- (10) filterable solids and water, wt %; and
- (11) pour point, °F.

c. Prior to combustion, PREPA Palo Seco shall sample and analyze the composition of any fuel blended after receipt of shipment (including, but not limited to blending due to additions to reserve tanks or mixing of fuel from various Power Plant locations) for asphaltenes, sulfur, vanadium and viscosity, in accordance with paragraph 4.a above.

d. Any analysis conducted in accordance with paragraph 4.c. above shall be certified by both a laboratory supervisor and the chemist who performed such analysis (certification may be made by one person where the laboratory supervisor is also the chemist who performed such analysis).

e. PREPA Palo Seco shall provide taps for sampling prior to each oil heater at each generating unit.

## 5. Spare Parts Inventory

a. PREPA Palo Seco shall maintain a spare parts inventory of spare hardware components for each generating unit to ensure that repairs and replacement of any hardware component is performed with as little interruption to the operation of the generating unit as possible.

- b. PREPA Palo Seco shall document the hardware purchasing and replenishment of the inventory.

**6. Operations and Preventive Maintenance**

- a. Proper operations and preventive maintenance shall include, at a minimum, the following elements:

- (1) operation checklists and preventive maintenance checklists for each generating unit with schedules for inspection;
- (2) operations activities and preventive maintenance activities relating to hardware components that affect or potentially affect compliance with Rule 403 of the RCAP, including but not limited to all monitors required above in paragraph 2;
- (3) visible emission readings; and
- (4) operations manuals for the PREPA Palo Seco facility.

- b. PREPA Palo Seco shall perform the operations and preventive maintenance activities listed below in order to ensure that each generating unit achieves and maintains compliance with Rule 403 of the RCAP:

- (1) operate each generating unit within the optimal operating ranges established; PREPA Palo Seco shall not be required to operate each generating unit within the optimal operating ranges established during start up, shutdown (loads below 50%), or malfunction periods or during any period, as necessary but not to exceed fifteen (15) minutes, in which PREPA Palo Seco is taking a burner elevation in or out of service in conformance with best practices;
- (2) respond and document operator response to data and analysis generated pursuant to the continuous monitoring referenced in paragraph 2,
- (3) implement inspections pursuant to the checklists in order to determine if each generating unit is functioning properly;
- (4) monitor and record the frequency of water-washing each boiler (furnace and back passage surfaces);
- (5) monitor and record the frequency of steam cleaning the tubes of each generating unit;
- (6) monitor and record the frequency of cleaning the burner tips and guns;
- (7) determine deficiencies, including inspection of alarms and, where necessary, repair of alarms within two working days; and

(8) document any deficiencies discovered, analyze and document the reasons for the deficiencies, and document the steps taken to correct any deficiencies.

c. In addition to monitor the emissions with the COMS, PREPA Palo Seco shall conduct visible emissions testing once every two weeks in accordance with the requirements listed below:

(1) visible emission readings shall be conducted by certified visible emission readers in accordance with Test Method 9, 40 CFR Part 60 Appendix A (Method 9), for minimum of six minutes;

(2) all visible emission readings recorded shall be recorded in accordance with Method 9; and

(3) where a PREPA visible emission reader records, in accordance with Method 9, an average opacity level greater than 20% opacity for a period equal to or greater than six (6) minutes, PREPA Palo Seco shall review the operating conditions of the relevant generating unit to determine and document the cause of any emissions with such elevated opacity, correct any deficiency and document the steps taken to correct any deficiency.

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d. PREPA Palo Seco shall ensure that PREPA employees are properly trained in all operations of the emissions units and shall document training provided.

**B. Normal operating scenario: PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2 (Oil fired combustion turbine)**

The following table contains a summary of applicable requirements, as well as the test methods, for emission units PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2 identified in Section II of this permit. The permit conditions include additional applicable requirements.

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
Emission limit for particulate matter	Particulate matter	0.3	Lb/MMBtu	Fuel type and AP-42 emissions calculations	Monthly	Record book of fuel type and emissions calculations	Semiannually
Visible Emissions Limit	Visible Emissions	20	Per cent	Method 9	Once during the first year of permit approval.	Tests results	Semiannually
				Visible emissions inspections	Bi Weekly	Record book	Semiannually

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
Sulfur emission limit	Sulfur Content	0.5	Percent by weight	Fuel sample	Daily	Sulfur percent records	Monthly
				Fuel supplier analysis	With each receipt	Daily Record of the sulfur content on fuel	
Fuel Consumption Limit	No. 2-Distillate Oil (diesel)	117,384,000	Gallons per year	Consumption	Daily	Record book	Monthly

**a. PARTICULATE MATTER EMISSION LIMIT:**

- (i) The permittee shall not cause nor permit the emission of particulate matter, in excess of 0.3 lb/MMBtu from emission units PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2. [Rule 406 of the RCAP]
- (ii) PREPA Palo Seco shall calculate the emissions of particulate matter monthly using applicable AP-42 (Compilation of Air Pollutant Emission Factors) emission factors to the unit and the average rate of fuel heat input.
- (iii) PREPA Palo Seco shall also maintain in the facility a monthly report of the type of fuel used. Copy of these reports shall be submitted every six months along with the semi-annual reports.
- (iv) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records for required monitoring and supporting information for a period of 5 years from the date of the monitoring sample, measurement, report or application.

**b. VISIBLE EMISSIONS LIMIT:**

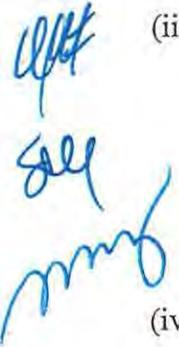
- (i) The permittee shall not exceed the opacity limit of 20% for units PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2 in 6 minutes average. Nevertheless, the permittee may discharge into the atmosphere visible emissions of an opacity up to 60% for a period of no more than four (4) minutes in any 30 minutes interval. [Rule 403(A) of the RCAP]
- (ii) Because it is not viable to install a continuous opacity monitoring system (COMS) in these turbines, as alternate test method, PREPA shall contract an independent opacity reader, certified in a school approved by EPA or EQB, to perform one (1) opacity reading to each stack of each turbine, during the first year of the permit using Method 9 established under 40 CFR part 60, Appendix A. The applicable turbine shall be operating at the time of performance of the opacity readings.

- (iii) PREPA Palo Seco shall perform opacity visual inspections biweekly during the hours of the day using a visible emissions reader certified by a school approved by EPA or the Board. When the certified reader establishes that the opacity limit is exceeded according to Rule 403 of RCAP, PREPA Palo Seco shall verify that the equipment causing the visible emissions is operating in accordance with the specifications of the manufacturer and the conditions of the permit. If it is not operating adequately, PREPA Palo Seco shall take corrective actions to eliminate the excess of opacity immediately, and shall document the cause of the emissions with such elevated opacity, shall correct any deficiency and shall document the taken steps to correct any deficiency. PREPA Palo Seco shall realize tests of visible emissions biweekly in accordance with the requirements listed below:
- (A) The visible emissions readings shall be performed in accordance with 40 CFR Part 60 Method 9, Appendix A, for a minimum of six minutes. The visible emissions readers shall be certified according to Method 9 by a school approved by the EPA or the Board.
- (B) All visible emissions readings shall be recorded in accordance with Method 9.
- (C) If the day that corresponds to take the reading, the unit is not in operation or the conditions of Method 9 are not complied, PREPA Palo Seco shall document it in the report of readings and inform it in the visible emissions summary to be submitted to the Board along with the semi-annual reports required in this permit. The next readings shall be realized bi weekly.
- (D) PREPA Palo Seco shall submit a summary of the readings of visible emissions along with the semi-annual report required in this permit. This report shall include a summary of the results of the readings and the beginning and ending hours and the dates in which the readings were performed. The report also shall include the total number of the readings of visible emissions realized in that period for the units subject to this requirement. PREPA Palo Seco shall retain a copy of the report of the reading of visible emissions that include date and the hour of the reading by at least 5 years, in compliance with the Rule 603(a)(4)(ii) of the RCAP.
- (iv) PREPA Palo Seco shall submit to the Board, a copy of the format to be used to record the readings of visible emissions at least 30 days prior to the reading of the initial opacity reading.
- (v) The permittee shall notify in writing the Board at least 15 days of prior of the initial reading of Method 9, to allow the EQB the opportunity to have an observer present. [Rule 106 (D) of the RCAP]
- (vi) Two copies of the report of the initial reading under Method 9 shall be submitted by the permittee within 60 days after the tests. This report shall contain the information required in Rule 106(E) of the RCAP. The requirements of the subsequent readings shall

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be submitted in the summary of readings that shall be submitted with the semiannual report required in condition 14 of Section III of this permit.

**c. SULFUR CONTENT LIMIT:**

- (i) The permittee shall not burn or allow the use in any fuel burning equipment, any fuel with a sulfur content, by weight, which exceeds 0.5% in the units PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2. [Rule 410 of the RCAP]
- (ii) The permittee shall keep a copy of the fuel supplier certification indicating the fuel sulfur content to demonstrate compliance with the requirement of keeping a daily record of the sulfur content in the No. 2 fuel oil. PREPA Palo Seco shall obtain an analysis of sulfur content upon every delivery at the site for transfer to the storage tanks at the facility from any other source to verify sulfur content from supplier's invoice. The fuel sampling shall include but not be limited to determining the fuel's sulfur content (% by weight).
-  (iii) The permittee shall submit to EQB a monthly report indicating the daily fuel consumption and the sulfur content, by weight, for the fuel consumed in the six oil-fired combustion turbines. This report shall be submitted to the Board within the first 30 days of the month following for which the report is representative. The report shall be addressed to the Chief of the Validations Data and Mathematical Model Division of the Air Quality Area and shall keep available at any time at the facility for EQB and EPA revision. [Rule 410 of the RCAP]
- (iv) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records of required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report or application. These include a record of the results of fuel sampling, monthly fuel consumption reports and the sulfur content in the fuel burned.
- (v) The permittee must submit a summary with the semiannual compliance reports, indicating the sulfur content by weight for the fuels consumed monthly.

**d. FUEL CONSUMPTION LIMIT:**

- (i) The permittee shall not exceed the total consumption limit for No. 2 fuel oil of **117,384,000 gallons** for any period of 12 consecutive months for the units PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2. The fuel consumption for any consecutive 12-month period shall be calculated by adding the monthly consumption for the unit to the total fuel consumption for the unit for the previous 11 months.
- (ii) The levels of the fuel tank must be measured monthly and the amount of fuel that is received must be measured and recorded each time that the fuel is received. The amount of fuel consumption will be determined using the measurement in the levels of tank and the amount of fuel is received during this month.

- (iii) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records of required monitoring data and supporting information for a period of five (5) years from the date of the monitoring sample, measurement, report or application.
- (iv) The permittee shall submit, with each semiannual report, a summary indicating the fuel content of each turbine in terms of monthly consumption.

**e. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR COMBUSTION TURBINES CONTAINED IN 40 CFR PART 63, SUBPART YYYY**

- (i) Any existing, new, or reconstructed source that have or operates stationary combustion turbines, is subject to the National Emission Standards for Hazardous Air Pollutants for Combustion Turbines contained in 40 CFR Part 63, Subpart YYYY.

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- a. According to 40 CFR section 63.6090, the existing stationary combustion turbines in all subcategories does not have to comply with the requirements of this Subpart YYYY or 40 CFR Part 63 Subpart A. No initial notification is necessary for any existing internal stationary combustion turbine, even if a new or reconstructed turbine in the same category would require an initial notification.
- b. If a turbine was reconstructed built and began operations after March 4, 2004, the unit must meet the applicable requirements of emission limits and /or operating limitations of this Subpart YYYY on the date of commencement of operations.

**C. Normal Operating Scenario: Internal Combustion Engines GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1**

The following table contains a summary of applicable requirements, as well as the test methods, for emission units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 identified in Section II of this permit. The permit conditions include additional applicable requirements.

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
Visible Emissions Limit	Visible Emissions	20	Percent (6 minutes average)	Method 9	Once during the first year of the permit.	Test Results	Within 60 days after the test.
Limits on hours of operation	Hours	500	Hours per year	Non- resettable hour meter	Daily	Record	Every 6 months

Condition	Parameter	Value	Units	Test Method	Frequency	Record Keeping Requirements	Reporting Frequency
SO <sub>2</sub> Emission Limit	Sulfur content in the fuel oil no. 2 for GE-PS-1 and GE-PS-2	0.5	Percent by weight	Certification from the fuel supplier	With each fuel receipt	Record with each receipt of the fuel sulfur content	Every 6 months
	Sulfur content in the fuel oil no. 2 for generator GE-GIS-PS-1 and BI-PS-1	0.0015	Percent by weight	Certification from the fuel supplier	With each fuel receipt	Record with each receipt of the fuel sulfur content	Every 6 months

**a. VISIBLE EMISSIONS LIMIT:**

- (i) The permittee shall not exceed the opacity limit of 20% for units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 in 6 minutes average. Nevertheless, the permittee may discharge into the atmosphere visible emissions of an opacity up to 60% for a period of no more than four minutes in any 30 minutes interval. [Rule 403(A) of the RCAP]
- (ii) PREPA Palo Seco shall contract an independent opacity reader, certified in a school approved by EPA or EQB, to perform one opacity reading to each stack of the units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1, during the first year of the permit using Method 9 established under 40 CFR part 60, Appendix A. The engines shall be operating at the time of performance of the opacity readings.
- (iii) PREPA Palo Seco shall submit to the Board, a copy of the format to be used to record the readings of visible emissions at least 30 days prior to the reading of the initial opacity reading.
- (iv) The permittee shall notify in writing the Board at least 15 days of prior of the initial reading of Method 9, to allow the EQB the opportunity to have an observer present. [Rule 106 (D) of the RCAP]
- (v) Two copies of the report of the initial reading under Method 9 shall be submitted by the permittee within 60 days after the tests. This report shall contain the information required in Rule 106(E) of the RCAP.

**b. LIMITS OF HOURS OF OPERATION:**

- (i) The maximum hours of operation for each of the units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 is 500 hours per year. [PFE-70-0107-0094-II-C, PFE-70-0613-0322-II-C]
- (ii) The permittee shall install, operate and maintain a non-resettable hour meter for each of the engines of units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 so that the hours of operation and fuel consumption can be verified. The permittee shall determine the hours of operation using the measurements on the operating hour's meter. The hours of

operation for any period of 12 consecutive months shall be calculated by adding the hours of operation of the unit to the total operating time of the unit during the previous 11 months.

- (iii) PREPA Palo Seco shall prepare and maintain a daily record (the record may be updated only the days that the engine operates) of the hours of operation of the unit and reason (purpose operating, emergency, maintenance, etc.) of operation. The permittee must submit a summary of the hours of operation every six months along with the semi-annual compliance reports.
- (iv) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records of required monitoring data and supporting information for a period of 5 years from the date of the monitoring sample, measurement, report or application.

**c. SULFUR CONTENT LIMIT:**

- (i) The permittee shall not burn or allow the use of fuel No. 2 with a sulfur content, by weight, which exceeds 0.5% in the units GE-PS-1, and GE-PS-2. [PFE-70-0107-0094-II-C]
-  (ii) The permittee shall not burn or allow the use of fuel No. 2 with a sulfur content, by weight, which exceeds 0.0015% (15 ppm) in the units GE-GIS-PS-1 and BI-PS-1. [PFE-70-0107-0094-II-C, PFE-70-0613-0322-II-C, and 40 CFR Section 60.4207(b)]
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 (iii) The permittee shall keep a copy of the fuel supplier certification indicating the fuel sulfur content to demonstrate compliance with the requirement of keeping a daily record of the sulfur content in the No. 2 fuel oil. PREPA Palo Seco shall obtain the certification of sulfur content with each receipt of fuel at the facility before transferring to the engine's tank to verify the sulfur content to be received.
- (iv) The permittee shall submit a monthly report indicating on a daily basis the sulfur content (percent by weight) in the fuel burned and the amount of fuel burned in the unit. This report shall be submitted to the Board within the first 30 days of the month following for which the report is representative. The report shall be addressed to the Chief of the Validations Data and Mathematical Model Division of the Air Quality Area and shall keep available at any time at the facility for EQB and EPA revision. [Rule 410 of the RCAP]
- (v) As specified in Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain all records of required monitoring data and supporting information for a period of 5 years from the date of the monitoring sample, measurement, report or application. These include a record of the hours of operation and the sulfur content in the fuel burned.
- (vi) The permittee shall submit, every six months with semiannual compliance reports, a summary of the reports indicating the sulfur content by weight for the fuels consumed monthly.

**d. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR RECIPROCATING INTERNAL COMBUSTION ENGINES (40 CFR Part 63 Subpart ZZZZ) AND NEW SOURCE PERFORMANCE STANDARDS FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES (40 CFR Part 60 Subpart IIII)**

- (i) The engines of units GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 are subject to 40 CFR Part 63, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Engines Stationary Internal Combustion Engines (RICE NESHAP), as defined in Section 63.6585(a) of 40 CFR.
- (ii) **For GE-PS-1 and GE-PS-2 engines:** The permittee shall meet the following requirements:

Requirements	Reference
Continuous Compliance Requirements	Section 63.6605, and 63.6640 of 40 CFR.
Notification Requirements	Section 63.6645 (f) of 40 CFR
General Provisions	None, except as specified in Section 63.6645 (f) of 40 CFR

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- a. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency situations.
  - b. If the engine is used for the purposes specified in 40 CFR §63.6640(f)(2)(ii) or (iii) or §63.6640(f)(4)(ii), the permittee shall maintain a record of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.
  - c. To maintain the emergency engine category, the permittee shall comply with the limitations on use and operation contained in 40 CFR §63.6640(f). For any engine operation that does not meet these requirements, the engine will not be considered as one of emergency under this subpart and shall comply with all requirements for non-emergency engines.
  - d. If GE-PS-1, and GE-PS-2 engines are reconstructed, the permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart IIII (for CI engines), as applicable. This may include stricter limits on the sulfur content in the fuel.
- (iii) **For the engine GE-GIS-PS-1:** In accordance with Section 63.6590(c) of 40 CFR, the engine GE-GIS-PS-1 must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR Part 60 Subpart IIII (New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines)

- a. You must comply with all applicable requirements under this Subpart III.
- b. In accordance with section 60.4205(b) of 40 CFR, each engine must comply with the applicable emission standards in Section 60.4202, for all pollutants, for the same model year and maximum engine power. In accordance with 40 CFR sections 89.112, and 89.113, each engine must not exceed the following emissions:
  - i. 4.0 g/kW-hr for NMHC + NO<sub>x</sub>,
  - ii. 3.5 g/kW-hr for CO, and
  - iii. 0.20 g/kW-hr for PM.
  - iv. Opacity within the limits set out in 40 CFR section 89.113.
- c. The permittee shall obtain a certification from the manufacturer that the engine meets the emission standards specified for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants. [40 CFR 60.4202(b)(2)]
- d. The permittee shall operate and maintain this engine so that it complies with the emission standards required under item b. of this condition of this section during the engine life. [40 CFR section 60.4206]
- e. In accordance with section 60.4207(b) of 40 CFR, the permittee shall use diesel for this engine that meets the requirements of 40 CFR Section 80.510(b). That is,
  - i. The maximum sulfur content of the fuel shall not exceed 15 ppm or 0.0015% by weight.
  - ii. The cetane index may not exceed 40 (minimum) or the aromatic content may not exceed 35% (maximum) volume.
- f. The permittee shall comply with the applicable monitoring requirements of 40 CFR Section 60.4209.
- g. The permittee shall demonstrate compliance, purchasing an engine certified to the standards in 40 CFR Section 60.4205(b) and item b. of this condition for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related written specifications, except as permitted by paragraph (g) of section 60.4211. [40 CFR Section 60.4211(c)]
- h. The permittee shall operate the engine according to the requirements of paragraph (f) of section 60.4211, to be considered an emergency engine under this subpart. If the engine is not operated according to the requirements of that paragraph (f) of

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section 60.4211, the engine will not be considered an emergency engine under this subpart and the permittee shall comply with all applicable requirements under the same subpart for non-emergency engines.

- i. The permittee shall comply with the test methods and other procedures of Section 40 CFR 60.4212, as applicable.
  - j. The permittee shall comply with the applicable notification requirements, reporting and recordkeeping in 40 CFR section 60.4214.
  - k. The permittee shall comply with the General Provisions of sections 60.1 through section 60.19 that apply, which are included in Table 8 of 40 CFR Subpart IIII.
- (iv) **For the motor BI-PS-1:** In accordance with Section 63.6590(c) of 40 CFR, the BI-PS-1 engine must meet the requirements of Subpart ZZZZ meeting the requirements of 40 CFR Part 60 Subpart IIII (New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines). The permittee must comply with all applicable requirements under Subpart IIII.

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- a. In accordance with Section 60.4205(c) of 40 CFR, the engine must comply with the applicable emission standards in Table 4 of Subpart IIII, for all pollutants. According to Table 4, the engine may not exceed the following emissions:
    - i. 7.8 g/HP-hr for NMHC + NO<sub>x</sub>,
    - ii. 2.6 g/HP-hr for CO, and
    - iii. 0.40 g/HP- hr for PM.
  - b. The permittee shall operate and maintain this engine so that it complies with the emission standards required under item b of this condition of this section during the engine life. [ 40 CFR section 60.4206]
  - c. In accordance with section 60.4207(b) of 40 CFR, the permittee shall use diesel for this engine that meets the requirements of 40 CFR Section 80.510(b). That is,
    - i. The maximum sulfur content of the fuel shall not exceed 15 ppm or 0.0015% by weight.
    - ii. The cetane number may not exceed 40 (minimum) or aromatic content may not exceed 35% (maximum) volume.
  - d. The permittee shall comply with the requirements of section 60.4208(h) and (i) of 40 CFR.
  - e. The permittee shall comply with the monitoring requirements of section 60.4209(a) of 40 CFR.

- f. The permittee shall comply with the compliance requirements of section 60.4206 and section 60.4211(a), (b), (f) and (g) of 40 CFR.
- i. The permittee shall operate the engine according to the requirements of paragraph (f) of section 60.4211, to be considered an emergency engine under this subpart. If the engine is not operated according to the requirements of that paragraph (f) of section 60.4211, the engine will not be considered an emergency engine under this subpart and the permittee shall comply with all applicable requirements under the same subpart for non-emergency engines.
- g. The permittee shall comply with the test methods and other procedures of section 40 CFR 60.4212, as applicable.
- h. The permittee shall comply with the applicable notification requirements, reporting and recordkeeping in 40 CFR section 60.4214(b) and with (d) if applicable.
- i. The permittee shall comply with the General Provisions of section 60.1 through section 60.19 that apply, which are included in Table 8 of 40 CFR Subpart III.

**Section VI – Recordkeeping Requirements:**

- A. PREPA Palo Seco shall have available at all times in the facility a copy of the Emergency Plan required under Rule 107 of the RCAP.
- B. PREPA Palo Seco must keep a record of all research or training related firefighting activities.
- C. PREPA Palo Seco must keep a record of the purchases of refrigerant and the refrigerant added to the devices or equipment that generally have 50 lbs of refrigerant or more. [40 CRF §82.166]
- D. PREPA Palo Seco must keep available documents that establish the dimensions of the storage tanks and an analysis showing their capacity as specified in 40 CRF §60.116b. This required record will be kept at the installation while the source is in operation.
- E. All monitoring records, results of the fuel sampling tests, results of the calibration tests, charts prepared by instrumentation, all the reports submitted and the logs must be kept for a period of 5 years after the date they are recorded and shall be made available at the request of the EPA or the EQB. All rolling averages shall be calculated on a daily basis.
- F. The levels of the fuel tank, both for fuel oil no. 6 and fuel oil no. 2 must be measured on a monthly basis and the amount of fuel received shall be measured and written down every time fuel is received. The amount of fuel consumed shall be determined using tank level measurements and the amount of fuel received during the corresponding month.

### Section VII - Reporting Requirements:

- A. Certification of Compliance: In accordance with Rule 602(C)(2)(ix)(c) of the RCAP, PREPA Palo Seco shall submit an annual certification of compliance. This certification of compliance shall be submitted to both the EQB and the EPA<sup>12</sup> no later than April 1<sup>st</sup> of each year, covering the previous year. The certification of compliance must include, but shall not be limited to, the information required in Rule 603(c) of the RCAP.
- B. Calculation of Emissions: On April 1<sup>st</sup> of each year, PREPA Palo Seco shall send the estimate of real or permissible emissions for the previous calendar year. The estimate of emissions shall be provided in the forms prepared by the EQB for such purposes. The responsible official will certify that all the information submitted is correct, true and representative of the permitted activity. Emission calculations must include, but not be limited to, PM/PM<sub>10</sub>, NO<sub>x</sub>, VOC, CO, SO<sub>x</sub>, HAP's and GHGs (greenhouse gases) emissions.
- C. In accordance with Rule 603(a)(5)(i) of the RCAP<sup>13</sup>, PREPA Palo Seco shall submit of reports of any required monitoring every six months, or more frequently if required by the underlying applicable requirement or by the Board. All instances of deviations from permit requirements must be clearly identified in such reports. The responsible official must certify all required reports as established under Rule 602(C)(3) of the RCAP. The report that covers the period from January to June shall be submitted no later than October 1<sup>st</sup> of the same year, and the report covering the period from July to December shall be submitted no later than April 1<sup>st</sup> of the next year. Once the guidelines are developed by the Board, the permittee must use them to complete these reports.
- D. Monthly Reports of Fuel Consumption: Units PS1, PS2, PS3, PS4, PSGT1-1, PSGT1-2, PSGT2-1, PSGT2-2, PSGT3-1 and PSGT3-2 are affected by Rule 410 of the RCAP, therefore PREPA Palo Seco must submit, on a monthly basis, a report indicating sulfur content by percent by weight and daily fuel consumption for each fuel for each unit. The report must also include the sulfur content in fuel oil no. 2 of the units: BI-PS-1, GE-PS-1, GE-PS-2 and GE-GIS-PS-1. The report must be submitted to the Board to the attention of the Chief of the Validation Data and Mathematical Model Division during the first 30 days of the month following the month for which it is representative.
- E. In accordance with rule 603(a)(5)(ii) of the RCAP<sup>14</sup>, any deviations resulting from upset conditions (just as fault or unexpected rupture) or from emergency as defined in section (e) of Rule 603 of RCAP shall be reported within two (2) working days.

<sup>12</sup> The EQB certification must be addressed to: Manager, Air Quality Area, Box 11488, San Juan, P.R. 00910. The EPA certification must be addressed to: Chief, Enforcement and Superfund Branch, CEPD, US EPA Region II, City View Plaza – Suite 7000, #48 Road 165 Km 1.2, Guaynabo, P.R. 00968-8069.

<sup>13</sup> These reports cover two major elements. The first element is the summary of all periodic monitoring / sampling required in this permit. The second element requires that all deviations from permit conditions are clearly identified, summarized and reported to the Board.

- F. In accordance with rule 603 (a)(5)(ii)(b) of the RCAP, PREPA Palo Seco shall notify the Board within 24 hours of any deviation that results in a release of hazardous air pollutant that continues for more than one hour in excess of the applicable limit. In case of a release of any other regulated air pollutant that continues for more than 2 hours in excess of the applicable limit, the Board will be notified within 24 hours of the deviation. PREPA Palo Seco shall also submit to the Board, within 7 days, a written detailed report which includes probable causes, time and duration of the deviation, remedial action taken, and steps which are being undertaken to prevent a reoccurrence. (State enforceable only.)
- G. PREPA Palo Seco shall submit one to the EPA and two to the EQB of the written report of the results of all emission samplings within 60 days after performance of the emission tests. [Rule 106(E) of the RCAP]
- H. PREPA Palo Seco must comply with the applicable notification requirements of 40 CFR §63.6145 and 40 CFR part 63, subpart A by the dates specified unless it is determined that these rules do not apply.
- I. PREPA Palo Seco must comply with the applicable notification requirements of 40 CFR §63.6645 and 40 CFR part 63, subpart A by the dates specified.

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**Section VIII - Insignificant Emission Units**

PREPA Palo Seco provided the following list of insignificant activities below in order to permit a better understanding of its operations and equipment distribution. Given that it is not required to keep this list up-to-date, the activities may have suffered changes from the time when it was submitted, however, PREPA Palo Seco must include the list of insignificant activities that are exempt due to size or production and some of these may require a construction permit under Rule 203 of the RCAP.

Emission Unit ID	Description (Exemption criteria)
Tanks R1, R2, R3, R4, S1, S2, S3, S4, D1, D2, D3	Less than 1 ton/yr VOC (each) [Appendix B (3)(ii)(P) of the RCAP].
Untreated tank and certified tanks (2)	Less than 1 ton/yr VOC (each) [Appendix B (3)(ii)(P) of the RCAP].
Used oil, lubricating oil, hydrazide, aqueous ammonia and cyclohexilamine tanks	Less than 10,000 gallons [Appendix B(3)(ii)(N) of the RCAP].

Emission Unit ID	Description (Exemption criteria)
Treated water sewers and sewer manholes	VOC in water of less than 3,500 ppb [Appendix B (3)(ii)(L) of the RCAP]
Fuel oil and light oil discharge docks	Less than 1 ton/yr VOC (each) [Appendix B (3)(ii)(P) of the RCAP].
Oil absorbing material (pads/rags)	Less than the significant levels of Appendix E of the RCAP for lead, chromium, chlorine, arsenic, cadmium, manganese, mercury, nickel and selenium. [Appendix B (2) of the RCAP]
Acid and caustic soda tanks	Less than 10,000 gallons [Appendix B(3)(ii)(N) of the RCAP]
Liquid propane tanks	Less than 10,000 gallons [Appendix B(3)(ii)(N) of the RCAP].
Gas turbine fuel tanks (6)	Less than 10,000 gallons [Appendix B(3)(ii)(N) of the RCAP].
Fire water station diesel tank	Less than 10,000 gallons [Appendix B(3)(ii)(N) of the RCAP].

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**Section IX - Permit Shield**

1- Pursuant to Rule 603(d) of the RCAP, compliance with the conditions of the permit shall be deemed compliance with any applicable requirement at the date the permit is issued, whenever said requirement is specifically identified in the permit. Likewise, it will be considered to be in compliance with any requirement specifically identified as Not Applicable in the permit.

A. Non- applicable requirements

Determination of Non-Applicability	
Code	Reason
New Source Performance Standards for Stationary Gas Turbines (40 CFR Part 60, Subpart GG)	Turbines PSGT1-1, PSGT1-2, PSGT2-1 and PSGT2-2 were installed on December 1972. Turbines PSGT3-1 y PSGT3-2 were installed on February 1973. 40 CRF Part 60 Subpart GG is not applicable to sources constructed before October 3, 1977.

<b>Determination of Non-Applicability</b>	
<b>Code</b>	<b>Reason</b>
New Source Performance Standards for fossil-fuel-fired steam generators (40 CFR Part 60, Subpart D)	The PS1 boiler was installed in June 1969. The PS2 boiler was installed in March 1961. The PS3 boiler was installed in February 1970 and PS4 boiler was installed in July 1970. Subpart D of 40 CFR Part 60 does not apply to boilers constructed before August 17, 1971.
National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process heaters (40 CFR Part 63, Subpart DDDDD)	Not applicable to boilers PS1, PS2, PS3 and PS4 that are steam generating units of electric utilities covered under Subpart UUUUU of Part 63 of 40 CFR (Section 63.7491 (a) of 40 CFR).
National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial and Institutional Boilers (40 CFR Part 63, Subpart JJJJJ)	Not applicable to boilers PS1, PS2, PS3 and PS4 located at major sources of hazardous air pollutants, neither to boilers that are steam generating units for electric utilities covered under Subpart UUUUU of Part 63 of 40 CFR (Section 63.1195 (k) of 40 CFR).
New Source Performance Standards for Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII)	This subpart does not apply to internal combustion engines of the GE-PS-1 and GE-PS-2 because these units were ordered before July 11, 2005 and manufactured before April 1, 2006.
New Source Performance Standards for Spark Ignition Internal Combustion Engines (40 CFR Part 60, Subpart JJJJ)	This subpart applies to internal combustion engines with spark and not to internal combustion engines of compression ignition as the GE-PS-1 units, GE-PS-2, GE-GIS-PS-1 and PS-BI-1.
Rule 406 of the RCAP	This subpart does not apply to internal combustion engines GE-PS-1, GE-PS-2, GE-GIS-PS-1 and BI-PS-1 as these engines do not meet the definition of fuel burning equipment of Rule 102 of the RCAP, not producing power by indirect heat transfer.

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### Section X - Permit Approval

Pursuant to the powers granted to the Environmental Quality Board by the Environmental Public Policy Act, Public Law Number 416 of September 22, 2004, and after verifying the administrative record and compliance with the Uniform Administrative Procedures Act, Public Law Number 170 of August 12, 1998, as amended, the US Clean Air Act, the Puerto Rico Environmental Public Policy Act, and the Environmental Quality Board Regulations for the Control of Atmospheric Pollution, the Environmental Quality Board approves the permit subject to the terms and conditions stipulated therein.

In San Juan, Puerto Rico, today March 12, 2015.

### ENVIRONMENTAL QUALITY BOARD

  
Suzette M. Meléndez Colón  
Vice President

  
Rebeca I. Acosta Pérez  
Associate Member

  
Weldin F. Ortiz Franco  
President

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## **APPENDIX**

## Appendix I - Definitions and Abbreviations

### A. Definitions:

Act – US Clean Air Act, as amended, 42 U.S. 7401, et seq.

Responsible Official – See definition for Responsible Official as established in the Environmental Quality Board Regulations for the Control of Atmospheric Pollution (1995).

Regulations - Environmental Quality Board Regulations for the Control of Atmospheric Pollution.

Title V - Title V of the US Clean Air Act (42 U.S.C. 7661).

### B. Abbreviations

API	American Standard Testing Methods [sic]
AP-42	Compilation of Air Pollutant Emission Factors
ASTM	American Standard Testing Methods
Btu	British Thermal Unit
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub> e	Carbon dioxide equivalent
EPA	US Environmental Protection Agency
GHG	Greenhouse Gases
Hp	horsepower
HAP	Hazardous Air Pollutants
EQB	Puerto Rico Environmental Quality Board
Lbs	Pounds
MMBtu	Million Btu
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrogen Oxide

OPM	Operations and Preventive Maintenance
Pb	Lead
PM	Particulate Matter
PM <sub>10</sub>	Particulate matter with a mass median aerodynamic diameter equal to or less than 10 microns.
PREPA	Puerto Rico Electric Power Authority
Ppmw	parts per million by weight
Psid	pounds per square inch, differential
Psig	pounds per square inch, gauge
RCAP	Environmental Quality Board Regulations for the Control of Atmospheric Pollution
RMP	Risk Management Plan
SIC	Standard Industrial Classification
SO <sub>x</sub>	Sulfur Oxides
SO <sub>2</sub>	Sulfur Dioxide
SSU	Second Saybolt Universal
VOC	Volatile Organic Compounds

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