ENCLOSURE II

PUERTO RICO ELECTRIC POWER AUTHORITY
SAN JUAN REPOWERING PROJECT
Amended Final Permit (July, 2012)

This Enclosure II supersedes Final Permit (Enclosure II) issued on April 1, 2004.

The PREPA San Juan Repowering Project and the Liquefied Petroleum Gas (LPG) and Liquefied Natural Gas (LNG) Project as described in Enclosure I is subject to the following conditions.

I. Permit Expiration

This PSD Permit shall become invalid if construction:

1. has not commenced (as defined in 40 CFR Part 52.21(b)(9)) within 18 months
2. is discontinued for a period of 18 months or more; or
3. is not completed within a reasonable time.

I. Notification of Commencement of Construction and Startup

The Regional Administrator (RA) shall be notified in writing of the anticipated date of initial startup (as defined in 40 CFR Part 60.2) of each combustion turbine not more than sixty (60) days nor less than thirty (30) days prior to such date. The RA shall be notified in writing of the actual date of both commencement of construction and startup of each combustion turbine within fifteen (15) days after such date.

III. Plant Operations

All equipment, facilities, and systems, including the combustion and electric generation units, installed or used to achieve compliance with the terms and conditions of this PSD Permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. The continuous emission monitoring systems required by this permit shall be on-line and in operation 95% of the time when turbines are operating. PREPA shall demonstrate initial and continuous compliance with the operating, emission and other limits according to but not limited to the performance testing and compliance assurance requirements of this permit.

IV. Right to Entry

Pursuant to Section 114 of the Clean Air Act (Act), 42 U.S.C. §7414, the Administrator and/or his/her authorized representatives have the right to enter and inspect for all purposes authorized under Section 114 of the Act. The permittee acknowledges that the Regional

Administrator and/or his/her authorized representatives, upon the presentation of credentials shall be permitted:

1. to enter at any time upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this PSD Permit;

2. at reasonable times to access and to copy any records required to be kept under the terms and conditions of this PSD Permit;

3. to inspect any equipment, operation, or method required in this PSD Permit; and

4. to sample emissions from the source relevant to this permit.

V. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter, a copy of which shall be forwarded to the Regional Administrator.

VI. Operating Requirements

Each Combustion Turbine

1. Each Westinghouse 501 distillate oil fired combustion turbine unit shall be limited to a maximum fuel consumption rate (24 hour average) of 12,548 gallons per hour based on 135,000 British Thermal Units HHV per gallon.

2. Except for startup and shutdown, each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine unit shall only be allowed to operate between the following two heat input levels (24 hour average) (the term "load" refers to power output):

   a. base load (1,694 MM Btu/hr); and
   b. 60% load (1,167 MM Btu/hr)

3. Heat Recovery Steam Generators (HRSG) shall not combust supplemental fuel.

4. For the purposes of this PSD permit, startup and shutdown shall be defined as:

   a. Startup for each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine is defined as the period beginning with the initial firing of No. 2 fuel oil in the combustion turbine combustor and ending at the time when the load has increased to the 60% load. The duration of the startup shall not exceed for any given cold startup 5.4 hours (>72 hours shutdown), warm startup 2.75 hours (10 to 72 hours shutdown) and hot startup1 hour (<10 hours shutdown).

b. Shutdown for each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine is defined as the period of time beginning with the load decreasing from 60% load and ending when the cessation of operation of the combustion turbine. The duration of the shutdown shall not exceed three (3) hours for any given combustion turbine shutdown.

c. During startup and shutdown, PREPA shall comply with all mass emission limits except for Carbon Monoxide, NOx and VOC emissions which shall be limited to 0.943 lbs/MMBtu, 0.533 lbs/MMBtu and 0.070 lbs/MMBtu respectively for each start up and shut down. PREPA shall demonstrate compliance with the startup/shutdown CO and NOx emission rate pursuant to condition XIX of this permit. PREPA shall also comply with the opacity limits during each startup and shutdown. The total number of cold, warm and hot startup-shutdown cycles for both turbines combined shall be limited to 24, 104 and 200 respectively, in a year. The two turbines shall not be started up or shut down simultaneously.

5. At all times, including periods of startup, shutdown, and malfunction, PREPA shall, to the extent practicable, maintain and operate the two Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbines including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA and/or EQB which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the plant.

Auxiliary Diesel Generators

1. The maximum design capacity of each Auxiliary Diesel Generator shall be 2500 kilowatts (2.5 MW).

2. The Auxiliary Diesel generators shall be limited to a maximum operation of 40-hours total in a year. The maximum fuel usage shall be limited to 13,690 gallons per year on a monthly rolling average basis.

3. The Auxiliary Diesel Generator(s) shall not operate concurrently with any two combustion turbines except during combustion turbine startup and Auxiliary Diesel Generator testing.

VII. Emission Limitations

Each Westinghouse 501 Combustion Turbine

1. Carbon Monoxide (CO) (3-hour rolling average)
The concentration/mass emission rate of CO in the exhaust gas, corrected to 15%

oxygen, shall not exceed:
(i) 25 ppmdv/0.06 lbs/MMBtu at the base load heat input level; and
(ii) 60 ppmdv/0.14 lbs/MMBtu between 60% and the base load heat input level

2. Volatile Organic Compounds (VOC) (1-hour average)
The concentration/mass emission rate of VOC (as methane) in the exhaust gas, corrected to 15% oxygen, shall not exceed:
(i) 6.2 ppmdv/0.0083 lbs/MMBtu at the base load heat input level; and
(ii) 10 ppmdv/0.0133 lbs/MMBtu between 60% and the base load heat input level

3. Oxides of Nitrogen (NO_x) (8-hour rolling average)

The concentration of NO_x in the exhaust gas shall not exceed 34.2 parts-per-million by volume on a dry basis (ppmdv), corrected to 15% oxygen and 0.131 lbs/MMBtu at load 60% and above.

4. Opacity: Opacity of emissions, as measured by 40 CFR Part 60, Method 9 and an Opacity monitor, shall not exceed 20% except for a period or periods of not more than 4 minutes in any 30-minute interval when the opacity shall not exceed 60%.

Each Auxiliary Diesel Generator

1. Carbon Monoxide (CO)
The CO emissions shall not exceed 23.3 lbs/hr

2. Volatile Organic Compounds (VOC)
The VOC emissions shall not exceed 4.19 lbs/hr

3. Oxides of Nitrogen (NO_x)
The NO_x emissions shall not exceed 102 pounds per hour (lbs/hr) calculated as NO_2.

4. Opacity
Opacity of emissions, as measured by 40 CFR Part 60, Method 9, shall not exceed 20%, except for a period or periods of not more than 4 minutes in any 30-minute interval when the opacity shall not exceed 60%.

VIII Pollution Control Equipment and Opacity Measurement

1. Each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine shall continuously operate in accordance with its design specified combustion parameters.

2. PREPA shall install and shall continuously operate at each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine a steam injection system; and a curve showing the variation of the steam to fuel ratio for each unit shall be established during the performance testing. PREPA operators will use this curve determined during

the performance testing and contained within the written report submitted to EPA.

3. PREPA shall conduct weekly opacity observations at each turbine emission point in accordance with 40 CFR Part 60, Method 9. The opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Opacity shall not exceed 20%, except for a period not more than 4 minutes in any 30-minute interval when opacity shall not exceed 60%.

IX. Continuous Emission Monitoring (CEM) Requirements

1. Prior to the date of startup and thereafter, PREPA shall install, calibrate, maintain, and operate the following continuous monitoring systems in each of the combustion turbine exhaust stack.

   a. A CEM to measure and record stack gas carbon monoxide concentrations. The system shall meet all applicable EPA monitoring performance specifications (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 4, and Appendix F).

   b. A continuous emission monitoring system (CEM) to measure and record stack gas NO_x (as measured as NO_2) concentrations. The system shall meet all applicable EPA monitoring performance specifications (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 2, and Appendix F).

   c. A continuous opacity monitoring system (COM) to measure and record stack opacity levels. The system shall meet all applicable EPA monitoring performance specifications (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 1).

   d. Continuous monitoring systems to measure and record steam to fuel ratios. Upon request of EPA, PREPA shall conduct a performance evaluation of the monitor when testing procedures are formalized by the Agency in the future.

2. Not less than 90 days prior to the date of startup of each combustion turbine, PREPA shall submit a written report to EPA of a Quality Assurance Project Plan for the certification of the combustion turbine's monitoring systems. Performance evaluation of the monitoring systems may not begin until the Quality Assurance Project Plan has been approved by EPA.

3. PREPA shall conduct performance evaluations of the COMS's, CEMS's and continuous monitoring systems during the initial performance testings required under Permit Condition X of this permit or within 30 days thereafter in accordance with the applicable performance specifications in 40 CFR Part 60, Appendix B, and 40 CFR Part 52, Appendix E. PREPA shall notify the Regional Administrator (RA) 15 days in advance of the date upon which demonstration of the monitoring system(s) performance

will commence. In addition, PREPA shall comply with Method 203, except that PREPA may conduct performance audits under Section 5.3 of Method 203 semi-annually instead of quarterly.

4. PREPA shall submit a written report to EPA of the results of all monitor performance specification evaluations conducted on the monitoring system(s) within 60 days of the completion of the tests. The monitoring systems must meet all the requirements of the applicable performance specification test in order for the monitors to be certified.

X. Performance Testing Requirements For Each Combustion Turbine

1. Within 60 days after achieving the maximum production rate of the combustion turbine, but no later than 180 days after initial startup as defined in 40 CFR Part 60.2, and at such other times as specified by the EPA, PREPA shall conduct performance tests for NOx, CO and VOCs at the combustion turbines. All performance tests shall be conducted at base load conditions, 60% load conditions and/or other loads specified by EPA.

2. Three test runs shall be conducted for each load condition and compliance for each operating mode shall be based on the average emission rate of these runs.

3. At least 60 days prior to actual testing, PREPA shall submit to the EPA a Quality Assurance Project Plan detailing methods and procedures to be used during the performance stack testing. A Quality Assurance Project Plan that does not have EPA approval may be grounds to invalidate any test and require a re-test.

4. PREPA shall use the following test methods, or a test method which would be applicable at the time of the test and detailed in a test protocol approved by EPA:

   a. Performance tests to determine the stack gas velocity, sample area, volumetric flow rate, molecular composition, excess air of flue gases, and moisture content of flue gas shall be conducted using 40 CFR Part 60, Appendix A, Methods 1, 2, 3, and 4.

   b. Performance tests for the emissions of CO shall be conducted using 40 CFR Part 60, Appendix A, Method 10.

   a. Performance tests for the emissions of NO_x shall be conducted using 40 CFR Part 60, Appendix A, Method 20

   d. Performance tests for the emissions of VOCs shall be conducted using 40 CFR Part 60, Appendix A, Method 25A. PREPA may subtract methane/ethane emissions from the VOC emissions determined using Method 25A. Methane and ethane emissions shall be determined using 40 CFR Part 60, Appendix A, Method 18.

   e. Performance tests for the visual determination of the opacity of emissions from the stack shall be conducted using 40 CFR Part 60, Appendix A, Method 9 and the

procedures stated in 40 CFR Part 60.11.

5. Test results indicating that emissions are below the limits of detection shall be deemed to be in compliance.
6. Additional performance tests may be required at the discretion of the EPA or EQB for any or all of the above pollutants.

7. For performance test purposes, sampling ports, platforms and access shall be provided by PREPA on each of the combustion turbine units in accordance with 40 CFR Part 60.8(e).

8. PREPA shall submit a written report to EPA of the results of all emission testing within 60 days of the completion of the performance test.

9. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

XI. Record keeping Requirements

1. Logs shall be kept and updated daily to record the following:

   a. the hours of operation of each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine, amount of daily fuel use;

   b. the amount of electrical output (MW) on an hourly basis from each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine;

   c. the steam/fuel ratio at each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine to control NO_x emissions;

   d. any adjustments and maintenance performed on each Westinghouse 501 distillate oil fired or LPG fired or LNG fired combustion turbine;

   e. any adjustments and maintenance performed on monitoring systems; and

2. All monitoring records, fuel sampling test results, calibration test results and logs must be maintained for a period of five years after the date of record, and made available upon request. All rolling averages shall be computed on an hourly basis.

3. Compliance assurance with the NOx and CO mass emission limit shall be demonstrated using data from the CEMs, fuel flow and equation 19.1 in 40 CFR Part 60 Appendix A Method 19. PREPA will comply with this condition in addition to the requirement to conduct performance tests.

XII Operating Requirements (based on PSD netting analyses)

Combustion Turbine(s)

1. Each Westinghouse 501 distillate oil fired combustion turbine unit shall continuously use upon start-up No. 2 distillate fuel oil which contains no more than:
   a. 0.050 percent sulfur by weight; and
   b. 0.10 percent nitrogen by weight.

2. Each Westinghouse 501 distillate oil fired combustion turbine unit shall be limited to a maximum heat input of 1,694 million British Thermal Units per hour (MMBtu/hr)(24 hour average), based upon higher heating value (HHV). Maximum total fuel use for both turbines shall be limited to 188,201,000 gallons/year. Daily compliance shall be determined by adding the total amount of gallons of fuel used by both turbines during each calendar day to the total gallons of fuel use by both turbines in the preceding 364 calendar days

3. Both Westinghouse 501 distillate oil fired combustion turbines shall only be allowed to operate for up to 15,000 hours per year. Daily compliance shall be determined by adding the total amount of hours operated by both turbines during each calendar day to the total hours operated by both turbines in the preceding 364 calendar days.

Auxiliary Diesel Generator

The Auxiliary Diesel Generator shall continuously use upon start-up distillate fuel oil which contains no more than:
   a) 0.050 percent sulfur by weight
   b) 0.10 percent nitrogen by weight

Boiler Units 7,8,9 and 10

a. Each existing boiler unit 7 through 10 shall use No. 6 oil or lighter.

b. The sulfur content in the fuel oil shall not exceed 0.50% by weight.

c. The maximum total fuel use in these four boiler units shall be limited to 173.1 million gallons per year.

Distillate Oil Storage Tanks

A fixed roof tank shall be used for the storage of distillate oil.

Cooling Towers:

1. The cooling tower drift shall be limited to less than or equal to 0.005% of the circulating flow using two stages of mist eliminators.

2. The mist eliminators shall be inspected every year for wear and tear and replaced pursuant to good operational practices.

XIII Emission limits (based on the PSD netting analyses):

(Emission values expressed as lbs/MMBtu are based on the higher heating value (HHV) of the fuel)

Each Combustion Turbine

1. Sulfur Dioxide (SO_2) (3-hour rolling average)
   The SO_2 emissions shall not exceed 0.05 lbs/MMBtu.

2. Sulfuric Acid Mist (H_2SO_4)
   The H_2SO_4 emissions shall not exceed 0.0077 lbs/MMBtu.

3. Particulate Matter (PM)
   The PM emissions shall not exceed 0.041 lbs/MMBtu.

4. Particulate Matter < 10 microns (PM-10)
   The PM-10 emissions shall not exceed 0.052 lbs/MMBtu

6. Lead (Pb):
   The Pb emissions shall not exceed 9 E -06 lb/MMBtu.

Auxiliary Diesel Generator

1. Sulfur Dioxide (SO_2)
   The SO_2 emissions shall not exceed 2.35 lbs/hr.

2. Particulate Matter < 10 microns (PM-10)
   The PM-10 emissions shall not exceed 4.65 lbs/hr.

Boiler Units 7,8,9 and 10

1. The total NO_x emissions calculated as NO_2 from all four boiler units shall not exceed 1571 pounds per hour (lbs/hr) on a rolling 8-hour average basis. The potential to emit NO_x emissions from all four units shall be limited to 5,078 tons/year. PREPA shall meet these emission limits irrespective of nitrogen content of the no. 6 fuel oil.

2. The PM-10 emissions shall be limited to 0.0753 lbs/MMBtu.

3. The PM emissions shall be limited to 0.199 lbs/MMBtu.

4. The Sulfuric Acid emissions shall be limited to 0.0405 lbs/MMBtu.

Cooling Towers

Particulate Matter < 10 microns (PM-10) (one hour average) shall not exceed 0.0035 lbs/hour.

XIV Pollution Control Equipment (based on PSD netting analyses)

1. Each Westinghouse 501 distillate oil fired combustion turbine shall continuously use upon startup No.2 fuel oil in which:

   a. the sulfur content does not exceed 0.050 % by weight; and
   b. the nitrogen content does not exceed 0.10% by weight.

2 PREPA shall construct and maintain the facility in a manner that physically prevents blending of no. 2 fuel oil with any other oil at the facility. PREPA shall also label and color code the delivery system for the no. 2 oil.

4. PREPA shall install and operate at each existing boiler unit 7 through 10 a modified burner system. These burner systems shall be installed and operated at least four months prior to the startup of the combustion turbines. The modifications of these burners shall consist of replacing swirler assemblies, oil nozzles and plug assemblies or any equivalent technology that meets the level of reduction expected from this equipment and meet the NOx emission limit in XIII . PREPA shall notify EPA 60 days prior to installing equivalent technology.

XV. Fuel Sampling Requirements (based on PSD netting analyses)

1. PREPA shall receive/sample fuel oil for the combustion turbines and the boiler Units 7 through 10 as follows:

   a. For Combustion Turbines- PREPA shall take a distillate fuel (no. 2 oil) oil sample prior to unloading the oil from the supplier. PREPA shall not receive any distillate fuel oil with a sulfur content greater than 0.050% by weight. Prior to unloading the oil from the supplier, PREPA shall verify that the sulfur content of the oil being delivered is no greater than 0.050% by weight by evaluating the fuel oil analyses provided by the supplier and by independently analyzing and confirming the sulfur content of the fuel oil. The distillate fuel oil shall also be analyzed for the nitrogen content.

   b. For Boiler Units 7 through 10- PREPA shall sample no. 6 fuel oil for sulfur content upon delivery.

2. Compliance with the sulfur content standard shall be determined using the testing methods established in 40 CFR 60.335(d).

3. Compliance with the nitrogen content standard for the distillate oil to be used in the combustion turbines shall be determined using analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

XVI. Continuous Emission Monitoring (CEM) Requirements (based on PSD netting analyses)

1. Prior to the date of startup and thereafter, PREPA shall install, calibrate, maintain, and operate the following continuous monitoring systems in each of the combustion turbine exhaust stack.

   a. A CEM to measure and record stack gas oxygen or CO_2 concentrations. The system shall meet all applicable EPA monitoring performance specifications (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 3, and Appendix F).

   b. A continuous monitoring system to measure and record fuel flow rate. The system shall meet all applicable EPA monitoring performance specifications.

1. At least four months prior to the date of startup of any combustion turbine and thereafter, PREPA shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEM) to measure and record stack gas NO_x (as measured as NO_2) concentrations in each of the boiler unit 7 through 10 exhaust stack. The system shall meet all applicable EPA monitoring performance specifications (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 2, and Appendix F). In addition, PREPA shall install a CEM to measure and record stack gas oxygen concentrations meeting (including but not limited to 40 CFR Part 60.13 and 40 CFR Part 60, Appendix B, Performance Specifications 3, and Appendix F). PREPA shall also continuously measure and record fuel flow rate in lbs per hour. The CEMs shall be on line and in operation 95% of the time when the boilers are operating.

3. Not less than 90 days prior to the date of startup of each combustion turbine/burner modifications in the existing boiler units 7 through 10, PREPA shall submit a written report to EPA of a Quality Assurance Project Plan for the certification of the monitoring systems. Performance evaluation of the monitoring systems may not begin until the Quality Assurance Project Plan has been approved by EPA.

4. PREPA shall conduct performance evaluations of the COMS's, CEMS's and continuous monitoring systems during the initial performance testings required under Permit Condition XVII of this permit or within 30 days thereafter in accordance with the applicable performance specifications in 40 CFR Part 60, Appendix B, and 40 CFR Part

52, Appendix E. PREPA shall notify the Regional Administrator (RA) 15 days in advance of the date upon which demonstration of the monitoring system(s) performance will commence.

5. PREPA shall submit a written report to EPA of the results of all monitor performance specification evaluations conducted on the monitoring system(s) within 60 days of the completion of the tests. The monitoring systems must meet all the requirements of the applicable performance specification test in order for the monitors to be certified.

XVII. Performance Testing Requirements (based on PSD netting analyses)

1. PREPA shall conduct performance tests for each combustion turbine and each boiler unit 7 through 10 as follows:

   a. Each Combustion Turbine- Within 60 days after achieving the maximum production rate of the combustion turbine, but no later than 180 days after initial startup as defined in 40 CFR Part 60.2, and at such other times as specified by the EPA, PREPA shall conduct performance tests for SO_2, H_2SO_4, PM, PM_{10} and Lead at the combustion turbines. All performance tests shall be conducted at base load conditions, 60% load conditions and/or other loads specified by EPA.

   b. Each Boiler Unit 7 through 10- Within 60 days after modifying burners, but no later than 180 days after the modified burners' startup as defined in 40 CFR Part 60.2, and at such other times as specified by the EPA, PREPA shall conduct performance tests for NOx, PM, PM_{10}, and H_2SO_4 at each boiler unit exhaust stack. All performance tests shall be conducted at maximum load conditions, 60% load conditions and/or other loads specified by EPA.

2. Three test runs shall be conducted for each load condition and compliance for each operating mode shall be based on the average emission rate of these runs.

3. At least 60 days prior to actual testing, PREPA shall submit to the EPA a Quality Assurance Project Plan detailing methods and procedures to be used during the performance stack testing. A Quality Assurance Project Plan that does not have EPA approval may be grounds to invalidate any test and require a re-test.

4. PREPA shall use the following test methods, or a test method which would be applicable at the time of the test and detailed in a test protocol approved by EPA:

   a. Performance tests to determine the stack gas velocity, sample area, volumetric flow rate, molecular composition, excess air of flue gases, and moisture content of flue gas shall be conducted using 40 CFR Part 60, Appendix A, Methods 1, 2, 3, and 4.

   b. Performance tests for the emissions of NO_x shall be conducted using 40 CFR Part 60, Appendix A, Method 20.

c. Performance tests for the emissions of SO_2 shall be conducted using 40 CFR Part 60, Appendix A, Method 8.

d. Performance tests for the emissions of H_2SO_4 shall be conducted using 40 CFR Part 60, Appendix A, Method 8.

e. Performance tests for the emissions of PM shall be conducted using 40 CFR Part 60, Appendix A, Method 5.

f. Performance tests for the emissions of PM_{10} shall be conducted using 40 CFR Part 51, Appendix M, Method 201 (exhaust gas recycle) or Method 201A (constant flow rate), and Method 202. PM_{10} emissions shall be the sum of noncondensible emissions determined using Method 201 or 201 A and condensible emissions determined using Method 202.

g. Performance tests for the emissions of Pb (lead) shall be conducted using 40 CFR Part 60, Appendix A, Method 12.

h. Compliance with the cooling tower PM/PM-10 emission limit shall be determined by multiplying the maximum cooling water circulation rate with cooling water's drift rate and total dissolved solids (TDS) concentration. The TDS shall be monitored once per day.

5. Test results indicating that emissions are below the limits of detection shall be deemed to be in compliance.

6. Additional performance tests may be required at the discretion of the EPA or EQB for any or all of the above pollutants.

7. For performance test purposes, sampling ports, platforms and access shall be provided by PREPA on each of the combustion turbine units in accordance with 40 CFR Part 60.8(e).

8. PREPA shall submit a written report to EPA of the results of all emission testing within 60 days of the completion of the performance test.

9. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

XVIII. Record keeping Requirements (based on PSD netting analyses)

1. Logs shall be kept and updated daily to record the following:

   a. the gallons of No. 2 fuel oil fired on an hourly basis at each Westinghouse 501 distillate oil fired combustion turbine and the auxiliary generator;

b. the hours of operation of each Westinghouse 501 distillate oil fired combustion turbine and the auxiliary generator;

c. the sulfur and nitrogen content of fuel oil burned in each turbine and the auxiliary generator;

d. any adjustments and maintenance performed on each Westinghouse 501 distillate oil fired combustion turbine;

e. any adjustments and maintenance performed on monitoring systems;

f. all fuel sampling results; the distillate fuel oil supplier's and PREPA's analyses verifying that the sulfur content is no greater than 0.050%

g. the gallons of fuel oil fired on an hourly basis at each existing boiler unit 7 through 10;

h. the hours of operation of each existing boiler unit 7 through 10;

i. all calculations and information related to emission determinations

2. All monitoring records, fuel sampling test results, calibration test results and logs must be maintained for a period of five years after the date of record, and made available upon request. All rolling averages shall be computed on an hourly basis.

PREPA SAN JUAN REPOWERING PROJECT

PERMIT CONDITIONS XIX and XX APPLY
TO BOTH PSD AND PSD-NETTING RELATED CONDITIONS

XIX. Compliance Assurance

Combustion Turbine(s)

1. Capacity Restriction
   (max fuel use of 188,201,000 gallons per year, 15,000 hours of operation per year and 12,548 gph-24 hr average)

   a. Daily compliance with the limit on fuel use shall be determined by adding the total amount of gallons of fuel used by both turbines during each calendar day to the total gallons of fuel use by both turbines in the preceding 364 calendar days. This fuel use shall not exceed 188,201,000 gallons.

   b Daily compliance with the limit on number of hours of both combustion turbines shall be determined by adding the total amount of hours operated by both turbines during each calendar day to the total hours operated by both turbines in the preceding 364 calendar days. The total number of hours shall not exceed 15,000..

   c. Daily compliance with the maximum firing rate of 12,548 gallons per hour in each turbine shall be demonstrated by adding the total amount of fuel fired by each turbine every hour and adding the total amount of fuel fired by each turbine during the previous 23 hours and dividing this number by 24. The minimum firing rate of 8,644 gallons per hour shall be maintained in each turbine to demonstrate compliance with the requirement to operate the turbines at a minimum of 60% load except during startup and shutdown.

2. Startup/Shutdown

   a. The number of hours taken to startup and shutdown each turbine shall be recorded. A verifiable load data between zero and 60% shall be correlated with the number of hours for each startup and shutdown. The total number of startups and shutdowns shall be recorded and complied with on a calender-year basis.

   b. Continuous opacity monitoring system shall be operating during each period of startup and shutdown. Opacity readings shall not exceed 20%.

   c. PREPA shall comply with all mass emission limits except CO and NOx during startup and shutdown as summarized in conditions 3a, 3b, 3c and 3e below.

   d. The CO and NOx emissions during startup shall not exceed 323 lbs/hr and 263 lbs/hr respectively, calculated in the following manner: For each startup, PREPA

will monitor and record the total CO and NOx emissions (lbs) for initial 8 hours. PREPA shall sum up all CO and NOx emissions in lbs that occurred during initial 8 hours (including startup hours) and divide by 8 to obtain startup emission rate in lbs per hour.

The CO and NOx emissions during shutdown shall not exceed 323 lbs/hr and 263 lbs/hr respectively, calculated in the following manner: For each shutdown, PREPA will monitor and record the total CO and NOx emissions (lbs) for 8 hour period before a complete shutdown. PREPA shall sum up all CO and NOx emissions in lbs that occurred during prior 8 hours (including shutdown process time) and divide by 8 to obtain shutdown emission rate in lbs per hour.

CO and NOx emissions in pounds per hour shall be calculated as described below (Emission Limits in lbs/hr- condition 3 a and b).

3. Emission Limits in lbs/MMBtu and ppm

   a. Nitrogen Oxides- PREPA will continuously measure and record stack gas NOx concentrations in ppmvd using a CEM. The emission rate in ppmvd shall be measured and recorded every hour as an eight-hour rolling average. Monitored oxygen concentrations (vol % dry) will be used to convert NOx concentrations to emission rates (lbs/MMBtu) pursuant to equation 19.1 in EPA Method 19 (40 CFR Part 60 Appendix A). NOx emission rates in lbs/MMBtu will be calculated and recorded every hour as an eight-hour rolling average (lbs/MMBtu) and every day as a 365-day rolling average (tons/yr). Emission for both turbines will be summed. PREPA will comply with this condition in addition to the requirement to conduct a performance test.

      Startup/Shutdown: The emission rate in lbs/hr will be determined and recorded for a 8-hour period for each startup and shutdown by multiplying the emission rate in lbs/MMBtu times the fuel flow (lbs/hr) times the fuel's typical heating value 18,536 Btu/lb. NOx emission rates will be calculated and recorded for each startup and shutdown as an eight-hour average in lbs/hr.

      PREPA shall use a computerized data logger to record all emissions and emission rates.

   b. CO- PREPA will measure and record ppmvd by the CEMs continuously and determine emission in lbs/MMBtu every hour. PREPA shall demonstrate compliance with the CO mass emission limit in lbs/MMBtu by using data from the CEMs, fuel flow and equation 19.1 (with appropriate molecular weight modification) in 40 CFR Part 60 Appendix A Method 19. PREPA will comply with this condition in addition to the requirement to conduct a performance test. CO emissions will be calculated and recorded every hour as a three-hour rolling average (lbs/hr). PREPA will comply with this condition in addition to the requirement to conduct a performance test.

Startup/Shutdown: The emission rate in lbs/hr will be determined and recorded for a 8-hour period for each startup and shutdown by multiplying the emission rate in lbs/MMBtu times the fuel flow (lbs/hr) times the fuel's typical heating value 18,536 Btu/lb. CO emission rates will be calculated and recorded for each startup and shutdown as an eight-hour average in lbs/hr.

PREPA shall use a computerized data logger to record all emissions and emission rates.

c. PM-10- Initial stack test is required within 180 days of the startup of this plant. PREPA shall conduct subsequent stack tests every 30-months. PREPA shall conduct weekly opacity observations at each emission point in accordance with 40 CFR Part 60, Method 9. The opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Opacity as measured by Method 9 and by an Continuous Opacity Monitor shall not exceed 20%. All possible corrective actions shall be taken as soon as visible emissions are observed from the turbine stacks. PREPA shall maintain records of all corrective actions and the duration of visible emissions to verify compliance with PM-10 emissions.

d. Sulfur Dioxide- PREPA shall calculate by 40 CFR Part 60, Method 19 the hourly sulfur dioxide emissions based on the average fuel sulfur content of the previous week, the hourly fuel flow and assuming that all sulfur gets converted to sulfur dioxide. This hourly emissions shall be added to previous two hours' emissions and divided by three. This 3-hour average shall not exceed 89.9 lbs/hour. PREPA shall use a computerized data logger to record all emissions and emission rates.

e. VOC- Initial stack test is required within 180 days of the startup of this plant. PREPA shall conduct subsequent stack tests every 30-months.

<u>Boilers (Units 7 through 10)</u>

1. Maximum fuel use restriction

The maximum total fuel use in these four boiler units shall be limited to 173.1 million gallons per year. Daily compliance with the annual maximum fuel usage shall be determined by adding the total amount of gallons of fuel used by four boiler units during each calendar day to the total gallons of fuel use by those boiler units in the preceding 364 calendar days.

2. Emission limit in lbs/MMBtu and tons/year

Nitrogen Oxides- PREPA will continuously measure and record stack gas NOx concentrations in ppmvd using a CEM. Monitored oxygen concentrations (vol % dry) will be used to convert NOx concentrations to emission rates (lbs/MMBtu) pursuant to

equation 19.1 in EPA Method 19 (40 CFR Part 60 Appendix A). NOx emission rates will be calculated and recorded every hour as an eight-hour rolling average (lbs/hr) and every day as a 365-day rolling average (tons/yr). Emission for all four units will be summed. PREPA will comply with this condition in addition to the requirement to conduct a performance test.

PREPA shall use a computerized data logger to record all emissions and emission rates.

3. Sulfur content of no. 6 fuel oil

   For Boiler Units 7 through 10- PREPA shall sample no. 6 fuel oil upon delivery and analyze for the sulfur content.

4. PM/PM-10

   In addition to initial stack tests, PREPA shall conduct subsequent stack tests every 60-months. PREPA shall conduct weekly opacity observations at each emission point in accordance with 40 CFR Part 60, Method 9. The opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Opacity as measured by Method 9 and by an Continuous Opacity Monitor shall not exceed 20%. All possible corrective actions shall be taken as soon as visible emissions are observed from the turbine stacks. PREPA shall maintain records of all corrective actions and the duration of visible emissions to verify compliance with PM-10 emissions.

Certification-Combustion Turbines and Units 7 through 10

A responsible PREPA official as defined under the title V of the Clean Air Act shall submit a yearly compliance certification to EPA and EQB as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information contained in or accompanying this compliance certification submission; I certify that, based on my inquiry of those individuals immediately responsible for obtaining the information, the information is true, accurate and complete."

XX. Reporting Requirements

Each Combustion Turbine

1. PREPA shall submit a written report of all excess emissions to EPA for every calendar quarter. All quarterly reports shall be postmarked by 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 CFR Part 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. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions for each turbine unit. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported. For CO and NOx emission rates during the startup/shutdowns, report all emissions in lbs/MMBtu for each startup and shutdown calculated during that quarter.

c. 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.

d. When no excess emissions have occurred or the monitoring systems have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

e. Results of quarterly monitor performance audits, as required in 40 CFR Part 60, Appendix F (including the Data Assessment Report) and all reporting requirements in 40 CFR 60.7 including the submission of excess emissions and CEMs downtime summary sheets

f. For the purposes of this PSD Permit, excess emissions indicated by monitoring systems shall be considered violations of the applicable emission limits.

g. Any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable emission limit stated in Permit Condition VII and XIII of this permit and actions taken on any unit must be reported by telephone within 24 hours to:

Chief, Air Permit Division
Puerto Rico Environmental Quality Board
P.O. Box 11488, Santurce, Puerto Rico 00910
(787) 767-8071

h In addition, the U. S. EPA's Caribbean Environmental Protection Division and Puerto Rico Environmental Quality Board (EQB) shall be notified in writing within fifteen (15) days of any such failure. This notification shall include: a description of the malfunctioning equipment or abnormal operation; the date of the initial failure; the period of time over which emissions were increased due to the failure; the cause of the failure; the estimated resultant emissions in excess of those allowed under Condition VII and XIII of this permit; and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.

2. For the purpose of reporting required pursuant to 40 CFR Section 60.7 (New Source Performance Standards), periods of excess emissions that shall be reported include:

Nitrogen Oxides- Any one-hour period during which the average steam-to-fuel, as measured by continuous monitoring system, falls below the steam-to-fuel ratio determined to demonstrate compliance with 40 CFR Section 60.332 by the performance test required in 40 CFR Section 60.8. Each report shall include the average fuel consumption, ambient conditions, gas turbine load, the periods of excess emissions, and graphs or figures developed under 40 CFR Section 60.335(a).

3. Any period during which fuel sulfur content exceeds 0.050 % and fuel nitrogen content exceeds 0.10% shall be reported immediately to the EQB.

Each Boiler Unit 7 through 10

1. PREPA shall submit a written report of all excess emissions to EPA for every calendar quarter. All quarterly reports shall be postmarked by 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 CFR Part 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.

   c. In addition to the reporting pursuant to XXI-2, all reports related to boiler units 7 through 10 shall be submitted to:

      Chief, Air Permit Division
      Puerto Rico Environmental Quality Board
      P.O. Box 11488, Santurce, Puerto Rico 00910

XXI. Other Requirements

1. PREPA shall meet all other applicable federal, state and local requirements, including but not limited to those contained in the Puerto Rico State Implementation Plan (SIP), the General Provisions of the New Source Performance Standards (NSPS) (40 CFR Part 60, Subpart A), and the NSPS for Stationary Gas Turbines (40 CFR, Part 60, Subpart GG).

2. All reports and Quality Assurance Project Plans required by this permit shall be submitted to:

Director, Caribbean Environmental Protection Division
U.S. Environmental Protection Agency
Centro Europa Building, Suite 417
Ponce de Leon Avenue
San Juan, Puerto Rico 00907

3. Copies of all reports and Quality Assurance Project Plans shall also be submitted to:

a. Region II CEM Coordinator
U. S. Environmental Protection Agency
Air and Water Q/A Team
Monitoring & Assessment Branch
2890 Woodbridge Avenue - MS - 220
Edison, New Jersey 08837-3679

b. Director, Air Permits Division
Puerto Rico Environmental
Quality Board
P.O. Box 11488
San Juan, Puerto Rico 00910