Statement of Basis
Modification of National Pollutant Discharge Elimination System (NPDES) Permit issued to the Puerto Rico Electric Power Authority (PREPA) for the Aguirre Power Plant Complex (PR0001660)

On September 30, 2010, the U.S. Environmental Protection Agency, Region 2 (EPA) issued a final NPDES for the Aguirre Power Plant Complex, owned and operated by the Puerto Rico Electric Power Authority (PREPA). EPA specified that the Permit was to become effective on January 1, 2011.

On November 29, 2010, pursuant to 40 CFR §§124.19 and 124.20, PREPA filed a Petition appealing certain conditions (the "Contested Conditions") included in the referenced Permit. PREPA filed the Petition as a protective filing in order to preserve its right to appeal the issues set forth in the Petition.

Contemporaneously with the Petitioner filing its Petition, EPA and PREPA filed a Joint Motion arguing to the Board that Petitioner and EPA are actively engaged in conversations with respect to the issues that are the subject of the Petition. EPA advised the Petitioner of its willingness to consider the withdrawal of the Contested Conditions. EPA also advised the Petitioner that the contemplated withdrawal of the Contested Conditions would require that EPA prepare new draft permit conditions addressing the withdrawn portions, in compliance with the procedures provided in 40 CFR §§124.6 through 124.18.

EPA notified the Environmental Appeals Board and interested parties of EPA's determination to withdraw certain Permit conditions. The withdrawn conditions are included in this Statement of Basis as Table 1.

All conditions of the final permit which were not explicitly withdrawn remained in effect under the Permit and are severable from the Permit conditions withdrawn. Thus, all of the other conditions not withdrawn became fully enforceable obligations on the date that the Permit became effective, January 1, 2011. In cases where a limitation for a certain parameter was withdrawn, if there was a limit in the previous permit for that parameter the previous permit limit remained in effect.

This permit modification action is to finalize EPA's decision on the withdrawn conditions. EPA's decision is based on a review of discharge monitoring reports, both from the five year period prior to issuance of the draft permit in July 2010, as well as discharge monitoring reports submitted between January 1, 2011 to the present. EPA is accepting comment solely on the modification of withdrawn conditions, which are explained in this Statement of Basis.

Table 1: Withdrawn Permit Conditions

Page Number	Part 1 Permit Section	Withdrawn Permit Condition
2	Table A-1	Effluent Limitation for Cadmium
2	Table A-1	Effluent Limitation for Copper
2	Table A-1	Effluent Limitation for Lead
3	Table A-1	Effluent Limitation for Silver
3	Table A-1	Effluent Limitation for Zinc
6	Table A-1b	Effluent Limitation for Total Chromium
9	Table A-2	Effluent Limitation for Cadmium
9	Table A-2	Effluent Limitation for Dissolved Oxygen
9	Table A-2	Effluent Limitation for Lead
9	Table A-2	Effluent Limitation for Mercury
9	Table A-2	Effluent Limitation for Silver
12	Table A-3	Effluent Limitation for Copper
12	Table A-3	Effluent Limitation for Dissolved Oxygen
12	Table A-3	Monitoring Requirement for Free Cyanide
12	Table A-3	Monitoring Requirement for Mercury
16	Table A-4	Monitoring Requirement for Free Cyanide
16	Table A-4	Effluent Limitation for Dissolved Oxygen
16	Table A-4	Effluent Limitation for Lead
16	Table A-4	Effluent Limitation for Mercury
16	Table A-4	Effluent Limitation for Silver
16	Table A-4	Effluent Limitation for Zinc
19	Table A-4a	Effluent Limitation for Free Available Chlorine
19	Table A-4a	Effluent Limitation for Total Chromium
19	Table A-4a	Effluent Limitation for Total Zinc
36	Paragraphs C.1.b.i and C.1.b.ii	First two deliverable requirements for Selection of Control Measures to Reduce Entrainment and Impingement Mortality: Plan for facility modifications (Paragraph C.1.b.i.); and Evaluation of possible changes in operation and maintenance (Paragraph C.1.b.ii).

DESCRIPTION OF DISCHARGES

The Aguirre Power Plant Complex Plant (APPC) consists of two twenty (20) megawatt (MW) oil-fired turbine generators, two three hundred (300) MW combined cycle oil-fired units, and two oil-fired four hundred and fifty (450) MW steam-electric units, with a total electrical output rating of 1,540 MW.

The outfalls at the facility, and a description of the corresponding effluent discharges is included below. APPC withdraws seawater from the Bahia de Jobos, an estuarine bay on the southern coast of Puerto Rico. Cooling water, process wastewater, and stormwater are discharged to Jobos Bay via five separate outfalls. The schematic of water flow is shown in Figures 1 and 2. Listed below are operations contributing wastestreams to Outfalls 001, 002, 003, 004, 005 and the internal monitoring points set up for the internal waste streams (IWSs).

Discharge Serial Number		**Discharge Description**	**Discharge Maximum Flow**
001		▪ Thermoelectric Plant Condensers Cooling Water ▪ Thermoelectric Plant Service Water Cooling Towers Blowdown ▪ Combined Cycle Plant Sea Water Cooling Towers Make Up and Blowdown ▪ Thermoelectric Plant Tanks and Condenser Hydrostatic Test Waters ▪ Condenser Screen Washwaters ▪ Stormwater	652.0 million gallons per day (MGD)
	IWS 001a	▪ Thermoelectric Condenser Cooling Water	652.0 MGD
	IWS 001b	▪ Thermoelectric Service Water Cooling Tower Blowdown Units 1 & 2	0.05 MGD/occurrence
	IWS 001c	• Combined Cycle Condenser Water Cooling Tower Blowdown Unit No. 1	2.5 MGD/occurrence
	IWS 001d	• Combined Cycle Condenser Water Cooling Tower Blowdown Unit No. 2	2.5 MGD/occurrence
002		▪ Condensate of the Fuel Heaters ▪ Floor and Equipment Drains ▪ Miscellaneous Use Water ▪ Stormwater Runoff	0.25 MGD
003		▪ Wastewater Treatment Plant Effluent ▪ Stormwater Runoff	1.65 MGD

Discharge Serial Number		Discharge Description	Discharge Maximum Flow
	IWS 003a	▪ Central Waste Treatment Plant Effluent	1.65 MGD
004		▪ Combined Cycle Plant Service Water Cooling Tower Blowdown ▪ Combined Cycle Plant Miscellaneous Use Water ▪ Sedimentation Basin 2 Effluent (Stormwater from the Fuel Tanks Dikes) ▪ Stormwater Runoff ▪ Groundwater	0.04 MGD
	IWS 004a	▪ Combined Cycle Plant Service Water Cooling Tower Blowdown	0.15 MGD
005		▪ Stormwater Runoff	N/A

Permit Conditions

The effluent limitations, monitoring requirements, and other conditions are described in the draft permit. The effluent limitations in the permit are equivalent to the most stringent values specified in the applicable technology-based guidelines or water quality-based limitations. The basis for each limitation is explained in the tables that follow this section.

Water Quality-Based Limits

The effluent limitations for several contaminants and special conditions are as imposed in the final Water Quality Certificate (WQC) issued by the EQB, dated September 16, 2010. The WQC was issued by the EQB for the purpose of assuring compliance with EQB's water quality standards and compliance with other appropriate requirements of State law as provided by Section 401(d) of the Clean Water Act.

In this permit modification, EPA intends to modify permit limitations in the current permit for metals and mercury that had been retained from the previous permit. While these parameters had been detected in the original permit application dated August 29, 1996, they have not been detected in the last five years prior to issuance of the current permit. EPA has chosen to retain monitoring requirements for these parameters, which in many cases have been detected in ambient water and sediment in Jobos Bay. EPA has included a reopener provision allowing EPA to modify monitoring requirements or establish limitations, should new information result in a determination indicate that more protective requirements are necessary to ensure protection of Puerto Rico water quality standards, consistent with EPA's obligation to issue permits that do cause or contribute to a violation of water quality standards under 40 CFR §122.44(d).

Technology-Based Limits

Technology-based limits were included in the current permit based upon 40 CFR §122.45(h), Effluent Limitation Guidelines (ELG) for the Steam Electric Generating Point Source Category at 40 CFR §423.12, and §423.13, as well as the *EPA Region II Revised Guidance for Cooling Water and Storm Water Runoff* dated September 5, 1991. Where appropriate, the technology-based limitations have been applied at monitoring points along internal waste streams (IWS), since compliance with technology-based effluent guideline limitations cannot be demonstrated after dilution with once-through cooling water and storm water. A description of limitations and conditions for each outfall or waste stream follow below. In certain instances, EPA had not included the units of kg/day in the table of limitations. This oversight is corrected in this permit modification, as described in Attachment I.

Permit modifications for each outfall are as described below, and in the Attached tables.

Outfall 001

Outfall 001 discharges approximately 5,800 feet offshore, and includes the Thermoelectric Plant Condenser Cooling Water, Thermoelectric Plant Service Water Cooling Towers Blowdown, Combined Cycle Plant Sea Water Cooling Towers Make Up and Blowdown Thermoelectric Plant Tanks and Condenser Hydrostatic Test Waters, Condenser Screen Washwaters, and Stormwater. In this permit modification, EPA has replaced the numeric limitations for cadmium, copper, lead, silver, and zinc with a "monitoring only" requirement.

IWS 001b: Table A-1b

IWS 001b discharges Thermoelectric Service Water Cooling Tower Blowdown which ultimately is discharge to Outfall 001. The discharge from this waste stream occurs approximately twice per year, according to the NPDES permit application. The limitations for Free Available Chlorine, Chromium, and Zinc are based on Steam Electric Power Generating Point Source Category cooling tower blowdown waste sources effluent guideline, representing the degree of effluent reduction attainable by the application of BAT (40 CFR 423.13(d)(1)). With this permit modification, EPA has included the units of "kg/day" for total chromium to correct an oversight in the current permit, where the units of measurement had been omitted.

Outfall 002

Outfall 002 discharges the waste water from trap floor and equipment drains, and stormwater. In this permit modification, EPA has replaced the numeric limitations for cadmium, lead, mercury, silver with a "monitoring only" requirement. EPA has also added monitoring requirements for copper and zinc, based on detections of these parameters at outfall 002. EPA has retained the limitation for dissolved oxygen from the current permit, which had been withdrawn. EPA may not establish a limitation for dissolved oxygen that is less stringent than the final water quality certificate issued by EQB on September 16, 2010, which includes the minimum standard of no result less than 5.0 mg/l of dissolved oxygen.

Outfall 003: Table A-3

Outfall 003 discharges effluent from the wastewater treatment plant effluent, condenser screen washwater, and storm water. The screen wash from the fish return system at the cooling water intake structure is discharged through Outfall 003. EPA has retained the monitoring requirements for mercury for Outfall 003, as mercury is a contaminant of concern for Jobos Bay, has been detected in Jobos Bay ambient monitoring results as well as sediment. Mercury is found in discharges from power plants, particularly in storm water. EPA has retained the limitation for dissolved oxygen from the current permit, which had been withdrawn. EPA may not establish a limitation for dissolved oxygen that is less stringent than the final water quality certificate issued by EQB on September 16, 2010, which includes the minimum standard of no result less than 5.0 mg/l of dissolved oxygen. EPA had agreed to remove the monitoring requirement for free cyanide in the responsiveness summary included with the final permit package, and had retained the requirement in error. EPA has removed the monitoring requirement for free cyanide, which had been included in error.

Outfall 004: Table A-4

Outfall 004 discharges Combined Cycle Plant Service Water Cooling Tower Blowdown, Combined Cycle Plant Miscellaneous Use Water, Sedimentation Basin 2 Effluent (Stormwater from the Fuel Tanks Dikes), Stormwater Runoff, and Groundwater. EPA has removed the limitation for free cyanide as it was included in the final permit in error. EPA has retained the limitation for dissolved oxygen from the current permit, which had been withdrawn. EPA may not establish a limitation for dissolved oxygen that is less stringent than the final water quality certificate issued by EQB on September 16, 2010, which includes the minimum standard of no result less than 5.0 mg/l of dissolved oxygen. EPA has replaced the numeric limitations for lead, mercury, silver and zinc with a "monitoring only" requirement. EPA has also added a monitoring requirement for copper, based on detections of this parameter at outfall 002.

IWS 004a: Table A-4a

IWS 004a discharges Combined Cycle Plant Condenser Water Cooling Tower Blowdown from Unit No. 2, which ultimately is discharged through Outfall 001. The limitations for Free Available Chlorine, Chromium, and Zinc are based on Steam Electric Power Generating Point Source Category cooling tower blowdown waste sources effluent guideline, representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). The mass based limitations were calculated using the maximum flow per blowdown occurrence. With this permit modification, EPA has included the units of "kg/day" for free available chlorine, total chromium, and total zinc to correct an oversight in the current permit, where the units of measurement were omitted in the final permit.

Additional Requirements

EPA has modified Section C: Additional Requirements Section of the current permit. The order of Paragraphs C.1.b.i and C.1.b.ii have been reversed, and due dates for compliance have been revised to allow adequate time from this permit modification to comply. The applicant had commented on the draft permit that it would make more sense for them to submit an evaluation of potential changes in operation prior to submitting a plan for improvements at the facility to minimize adverse effects from impingement and entrainment. Upon further explanation during the permit appeals process, EPA agrees and has made this change, along with an adjustment to the due dates to allow adequate time from this permit modification.

EPA has added Paragraph C.9: Reopener Clause for Establishing Effluent Limitations, reserving EPA's right to modify the permit or revoke and reissue the permit to establish additional monitoring requirements, or establish effluent limitations protective of the Puerto Rico Water Quality Standards based on new information, such as the results of analytical monitoring of effluent parameters or ambient monitoring data.