**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**
**FACT SHEET**
**FINAL PERMIT**
**December 19, 2012**

| | |
|---|---|
| Permittee Name: | Guam Power Authority |
| Mailing Address: | P.O. Box 2977<br>Hagatna, GU 96910 |
| Facility Location: | Cabras Island<br>Municipality of Piti, GU 96915 |
| Contact Person(s): | Joaquin C. Flores P.E., General Manager |
| NPDES Permit No.: | GU0020001 |

## I. STATUS OF PERMIT

Guam Power Authority (the "permittee") has applied for the renewal of their National Pollutant Discharge Elimination System ("NPDES") permit to allow the discharge of treated effluent from Cabras Power Plant to Piti Channel, Apra Harbor and into the Philippine Sea. A complete application was submitted on March 2, 2006. On March 29, 2012, the permittee submitted a revised permit application upon request of U.S. EPA Region 9 (EPA). EPA has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit GU0020001 issued on December 28, 2000. Pursuant to 40 CFR 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit.

The facility was inspected on March, 9, 2010 by EPA contractor PG Environmental. On September 30, 2010, EPA issued an Administrative Order to the permittee for both this facility and for the Tanguisson Power Plant, located in Dededo, Guam, to take all necessary steps to come into compliance with their NPDES permits and with the Clean Water Act.

This permit has been classified as a Major discharger.

## II. GENERAL DESCRIPTION OF FACILITY

The Cabras Power Plant ("the facility") has four units with a rated output of 220 megawatts (MW) of electricity. Units 1 and 2 are 66 MW output steam-electric generating units and Units 3 and 4 are 39 MW output diesel-electric generating units. The total design cooling water intake

volume for all four units is 238 MGD. The facility is located on the western tip of Piti Bay on the lagoon side of Cabras Island, Guam.

All four units share a common intake structure that is located on the Piti Canal. Cooling water for the plant is withdrawn from the open ocean through the Piti Canal and Tepungan Channel. The plant discharges into Piti Channel that empties into Apra Harbor, which is connected to the Philippine Sea. The maximum intake velocity is reportedly less than 2.0 feet per second.

## III. DESCRIPTION OF RECEIVING WATER

Under Guam Water Quality Standards (GWQS), Inner Apra Harbor is designated as category M-3 ("fair"). M-3 waters are intended for general, commercial, and industrial use with beneficial uses including: protection of aquatic life, aesthetic enjoyment, compatible recreation with limited body contact, shipping, boating and berthing, industrial cooling water, and marinas.

## IV. DESCRIPTION OF DISCHARGE

The permit allows for the discharge of non-contact cooling water through outfalls 001 and 002 and storm water discharge from outfall 101.

| Outfall # | Description | Max Daily Flow[(1)] |
|---|---|---|
| 001 | Non-contact cooling water: units 1&2 | 172.8 MGD |
| 002 | Non-contact cooling water: units 3&4 | 65.2 MGD |
| 101 | Facility Storm Water | .02 MGD |

[(1)]As reported in NPDES application.

The following pollutants were reported as believed to be present in Form 2C, section V of the application at Outfalls 001, 002, and 101 in the following concentrations:

| Pollutant | Units | 001 | 002 | 101 |
|---|---|---|---|---|
| Chemical Oxygen Demand (COD) | mg/L | 74 | 92 | 38 |
| Total Suspended Solids (TSS) | mg/L | 33 | 44 | 10 |
| Ammonia (as N) | mg/L | ND | ND | 0.13 |
| Flow | MGD | 173 | 65.2 | 0.02 |
| Temperature (Summer) | °C | 27.3 | 27.4 | 27.3 |
| Temperature (Winter) | °C | 33.8 | 33.8 | 33.8 |
| pH | s.u. | 8.17-8.19 | 8.14-8.17 | 7.0-9.0 |
| Fluoride | mg/L | 0.67 | 0.67 | 0.50 |
| Nitrate-Nitrite | mg/L | ND | ND | 0.97 |
| Nitrogen, Total Organic | mg/L | ND | ND | ND |
| Sulfate | mg/L | 2,600 | 2,600 | 600 |
| Aluminum | µg/L | 14 | 16 | 53 |
| Barium | µg/L | 4.4 | 4.4 | 14 |
| Boron | µg/L | 4.6 | 4.5 | 1.3 |
| Iron | µg/L | 3.9 | 3.4 | 100 |
| Magnesium | µg/L | 1,200 | 1,200 | 360 |
| Manganese | µg/L | ND | ND | 9.9 |
| Antimony | µg/L | 0.13 | 0.13 | 0.49 |
| Arsenic | µg/L | 1.4 | 1.4 | 0.67 |
| Beryllium | µg/L | ND | ND | ND |
| Cadmium | µg/L | ND | 0.034 | 0.063 |
| Chromium | µg/L | ND | ND | ND |
| Copper | µg/L | ND | ND | 3.9 |
| Lead | µg/L | ND | ND | ND |
| Nickel | µg/L | 0.19 | 0.25 | 17 |
| Selenium | µg/L | ND | ND | ND |
| Silver | µg/L | 0.092 | 0.10 | ND |
| Thallium | µg/L | ND | ND | ND |
| Zinc | µg/L | ND | ND | 21 |

ND- Not Detected

## V. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., "technology-based effluent limits") and the water quality standards applicable to the receiving water (e.g., "water quality-based effluent limits"). EPA has established the most stringent of applicable technology based or water quality based standards in the proposed permit, as described below.

## A. Applicable Technology-based Effluent Limitations

### Effluent Limitations Guidelines

Technology-based effluent limitation guidelines for the Steam Electric Power Generating Point Source Category were promulgated on November 10, 1982 (40 CFR Parts 125 and 423). Applicable Best Available Technology (BAT) and Best Practicable Technology (BPT) limitations for existing units #1 & #2 and New Source Performance Standards (NSPS) for new units #3 & #4 are summarized below:

1. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid.

2. At the permitting authority's discretion, the quantity of pollutants allowed to be discharged may be expressed as a concentration limitation instead of the mass-based limitations specified in the above sections. Concentration limitations shall be those concentrations specified in the permit.

3. For facilities generating greater than 25 MW, total residual chlorine shall not exceed 0.2 mg/l. [NSPS, applies only to units #3 and #4].

## B. Water Quality-Based Effluent Limitations ("WQBELs")

Water quality-based effluent limitations, or WQBELS, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard. (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and, where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(l)(ii)).

When evaluating reasonable potential, EPA considers the following factors:

### 1. Applicable Standards, Designated Uses and Impairments of Receiving Water

The Guam Environmental Protection Agency's ("GEPA") established water quality objectives in the 2001 Revision of the Water Quality Standards ("GWQS") and identified impairments for the receiving water as described in Section III, above.

### 2. Dilution in the Receiving Water

Zones of mixing in the receiving water may only be granted by GEPA. The permittee has currently not applied for a zone of mixing for any pollutant.

An exception to this is made under Section 5104.E.2.c. of the GWQS for Cabras Power Plant. The GWQS grant the following mixing zone for the facility:

> The zone of mixing for the Cabras Power Plants is the Piti Chanel, from the power plant to a distance three hundred feet back from where the channel joins the harbor proper, and from there to a depth of about one meter or 3.28 feet to a line from the GORCO Pier and the Navy Fuel Pier on Dry Dock Island.

## 3. History of Compliance Problems and Toxic Impacts

The facility was inspected on March, 9, 2010 by EPA contractor PG Environmental. On September 30, 2010, EPA issued an Administrative Order ("AO") (CWA 309(a)-10-025) to the permittee to take all necessary steps to come into compliance with its NPDES permits and with the Clean Water Act.

The AO revealed periods from June 2005 to June 2010 where the permittee failed to report effluent data in its DMRs for receiving water temperature and fluoride for Outfalls 001 and 002 and various pollutants intermittently for Outfall 101. The AO also revealed five violations for suspended solids and one for Oil & Grease at Outfall 101

Additionally, the AO and inspection report revealed that effluent flow and temperature were not being monitored continuously and that toxicity was being determined at a comingled location. The AO also revealed a variety of reporting, record-keeping, Best Management Practices and Operation & Maintenance violations.

## 4. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* herein after referred to as EPA's TSD (EPA 1991).

The analysis is summarized in the table below:

**Reasonable Potential Analysis for Outfalls 001 and 002.**

| Pollutant | Units | Maximum Effluent Concentration | Most Stringent WQS | Reasonable Potential? |
|---|---|---|---|---|
| Outfalls 001 and 002 | | | | |
| Total Suspended Solids (TSS) | mg/L | 44 | 40 | Yes |
| Fluoride | mg/L | 2.3 | 1.5 | Yes |
| Nitrate-Nitrite | mg/L | ND | 0.5 | - |
| Aluminum | µg/L | 16 | 200 | - |
| Barium | µg/L | 4.4 | 500 | - |
| Boron | µg/L | 4.6 | 5,000 | - |
| Iron | µg/L | 3.9 | 50 | - |
| Manganese | µg/L | ND | 20 | - |
| Antimony | µg/L | 0.13 | 4,300 | - |
| Arsenic | µg/L | 1.4 | 36 | - |
| Cadmium | µg/L | 0.034 | 9.3 | - |
| Chromium | µg/L | ND | 50 | - |
| Copper | µg/L | ND | 3.1 | - |
| Lead | µg/L | ND | 8.1 | - |
| Nickel | µg/L | 0.25 | 8.2 | - |
| Selenium | µg/L | ND | 71 | - |
| Silver | µg/L | 0.10 | 2.3 | - |
| Thallium | µg/L | ND | 6.3 | - |
| Zinc | µg/L | ND | 86 | - |
| Outfall 101 | | | | |
| Total Suspended Solids (TSS) | mg/L | 170 | 40 | Yes |
| Fluoride | mg/L | 1.2 | 1.5 | Yes |
| Nitrate-Nitrite | mg/L | 0.97 | 0.5 | Yes |
| Aluminum | µg/L | 53 | 200 | - |
| Barium | µg/L | 14 | 500 | - |
| Boron | µg/L | 1.3 | 5,000 | - |
| Iron | µg/L | 100 | 50 | Yes |
| Manganese | µg/L | 9.9 | 20 | - |
| Antimony | µg/L | 0.49 | 4,300 | - |
| Arsenic | µg/L | 0.67 | 36 | - |
| Cadmium | µg/L | 0.063 | 9.3 | - |
| Chromium | µg/L | ND | 50 | - |
| Copper | µg/L | 3.9 | 3.1 | Yes |
| Lead | µg/L | ND | 8.1 | - |
| Nickel | µg/L | 17 | 8.2 | Yes |
| Selenium | µg/L | ND | 71 | - |
| Silver | µg/L | ND | 2.3 | - |
| Thallium | µg/L | ND | 6.3 | - |
| Zinc | µg/L | 21 | 86 | - |

The reasonable potential analysis above demonstrates reasonable potential to exceed water quality standards for total suspended solids and fluoride for outfalls 001, 002, and 101 and nitrate, iron, copper, and nickel for outfall 101. For the remaining pollutants, the results of the analysis were inconclusive due to an insufficient quantity of data. Therefore, for those pollutants, limits have been carried over from the previous permit.

**C. Rationale for Effluent Limits**

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

*Flow.*

No limits established for flow, but flow rates must be monitored and reported. If no flow meter is available, volume of discharge is required to be calculated based on pump run times.

*Total Suspended Solids*

GWQS state that for M-3 waters, concentrations of suspended matter at any point shall not be increased more than twenty-five percent from ambient at any time, and the total concentration should not exceed 40 mg/l, expect when due to natural conditions. Because no ambient water data for TSS has been presented to EPA, a TSS limit has been adopted based on the water quality goal of 40 mg/l for M-3 waters in Guam.

*Oil & Grease.*

Limits for oil & grease were developed based on best professional judgment (BPJ) and are consistent with EPA-issued permits across the region and, more specifically, in Guam.

*Chlorine.*

Limits for chlorine were developed based on BAT, BPT and NSPS and are only applicable in the case that the permittee uses chlorine for disinfection at the facility. Although the permittee has indicated that they do not regularly chlorinate, EPA has retained chlorine limits should the permittee commence chlorination.

*Fluoride*

GWQS contain a marine water fluoride criterion of 1.5 mg/l. The DMR data for outfalls 001, 002, and 101 revealed one exceedance of this standard in November 2003. This exceedance triggers reasonable potential to violate the standards and is cause to reincorporate the criterion into the current permit. The limit and monitoring requirements for fluoride are based on Guam WQS and retained from the previous permit for outfalls 001 and 002 and a limit has been proposed for outfall 101 as a result of the RP analysis.

*pH*

GWQS state that for M-3 waters the pH of the receiving water should be between 6.5-8.5 standard units with variations of no greater than .5 s.u. from ambient conditions except due to natural causes. pH limits are retained from the previous permit and comply with GWQS.

*Temperature*

GWQS state that receiving water temperature shall not be altered more than 1.0° C (1.8° F) from ambient conditions. GWQS also grant a thermal mixing zone. In section 5104: E.2.c., a specific mixing zone is granted from Piti and Cabras thermal discharges. The described mixing zone is incorporated into the permit.

*Nitrate-Nitrite, Copper, Nickel, and Iron*

Based on analysis of flow data for Outfall 101, nirtrate-nitrogen, copper, nickel and iron all show a reasonable potential to exceed water quality standards in the discharge. Limits have been incorporated into the permit accordingly.

**D. Anti-Backsliding.**

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute.

The permit does not establish any effluent limits less stringent than those in the previous permit and, therefore, does not allow backsliding.

**E. Antidegradation Policy**

EPA's antidegradation policy at 40 CFR 131.12 and Guam antidegredation policy in GWQS Section 5101.B. require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. With the exception of temperature, the permit does not include a mixing zone, therefore these limits will apply at the end of pipe without consideration of dilution in the receiving water. The mixing zone for temperature is specifically granted in the GWQS and therefore is not expected to degrade receiving water quality.

This permit issuance does not authorize any new or increased flow or relax any effluent limitations from the previous permit. The discharge is also not expected to adversely affect the receiving water body.

Therefore, it is determined that this discharge meets the antidegradation policy set forth in the GWQS.

## VI. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

Section 5103 of the Guam WQS contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.

## VII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data is insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

### A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly DMR forms and submitted quarterly as specified in the proposed permit.

### B. Priority Toxic Pollutants Scan

A Priority Toxics Pollutants scan must be conducted annually to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee must perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants. Should the permittee decide to apply antifoulants to the cooling water discharged through Outfalls 001 and 002, the scan must be conducted during the antifoulants application in order to capture any pollutants contributed by the chemical addition.

### C. Whole Effluent Toxicity Testing

Chronic toxicity testing measures a sub-lethal effect (e.g. reduced growth) to test organisms exposed to an effluent compared to that of control organisms. The permit establishes annual testing for chronic toxicity to ensure that the facility's effluent presents no adverse impact on sensitive marine species. Should antifoulant application occur, toxicity testing must be conducted during antifoulant application to ensure the anti-fouling agents do not have a toxic effect on local organisms.

Should toxicity be found, the facility must develop a Toxicity Reduction Evaluation Work Plan and Toxicity Identification Evaluation in order to evaluate and reduce sources of toxicity.

## VIII. 316(b) DETERMINATION

Section 316(b) of the CWA requires that the "…location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse

environmental impact." EPA published a final rule regulating large existing electric generating plants (Phase II) in July 2004. EPA suspended the rule in July 2007 and issued a memorandum with subject: "Implementation of the Decision in *Riverkeeper, Inc. v EPA*, Remanding the Cooling Water Intake Structures Phase II Regulation." The memo states, "…all permits for Phase II facilities should include conditions under section 316(b) of the Clean Water Act developed on a Best Professional Judgment basis. See 40 C.F.R. § 401.14."

**A. Report Summary**

In October 2004, the applicant submitted the report "Environmental Impact of the Cooling Water Intake Structure, Cabras Power Plant Section 316B Study, Phase I" conducted by the University of Guam Marine Laboratory. The purpose of this study was to 1) determine a potential zone of influence for the intake structure and 2) establish preliminary biological monitoring within the zone of influence. The analysis concluded:

> "Based on the results of the current studies conducted off-shore and within Piti Canal, no discernable affects caused by the operation of the cooling water intake structures were noted within the canal and on the reef front beyond the mouth of the canal. Tidal changes, wind, and surf conditions account for most of the water movement within the study area, actually reversing currents during certain conditions, and water movement in Tepungan Channel apparently has more influence on Piti Canal than does the [cooling water intake system (CWIS)]. We found no apparent impact on either threatened, endangered, and/or commercially viable species during surveys conducted on the biological community within the canal."

In May 2007, the applicant submitted "316(b) Proposal for Information Collection for Cabras Power Plant" prepared by Tenera Environmental. In the Executive Summary, the applicant proposed:

> "[The applicant] plants to evaluate the full range of compliance options offered by the [now suspended 316(b) phase II] Rule. [The applicant] believes that cost-effective compliance options may be best achieved through use of restoration and/or site-specific standards because of the significant modifications to the CWIS and associated high costs of technologies and/or operational measures that would be required to meet the Rule's impingement mortality and entrainment reduction performance standards. However, [the applicant] will continue to review new technologies and evaluate options previously considered in terms of the new Rule."

Although this report was compiled specifically to address the requirements in the now suspended 316(b) phase II rule, the many of the same performance standards may still be applied by EPA using BPJ.

In July 2007, the applicant supplemented its previous studies with, "Cabras Power Plant Cooling Water System Information – 40 CFR Part 122.21(r)(2), (3) and (6)," also prepared by Tenera Environmental. This report describes in detail the intake structure and associated source water.

On March 9, 2010, an EPA contractor visited the facility to conduct a compliance evaluation inspection and gather additional information to be used for the renewal of this permit. The results from the information collection were summarized in a memorandum included in this fact sheet (See Appendix A).

On July 12, 2011 and August 25, 2011, EPA sent letters requesting an updated permit application and supplemental 316(b) information. On March 29th, 2012, the applicant submitted a revised application with corresponding 316(b) supplement.

On May 1, 2012, the permittee requested that their Impingement Monitoring Plan be approved so that they could commence monitoring. The plan was approved by EPA on May 2, 2012.

**B. Current Cooling Water Intake Technology**

Cooling water for the plant is withdrawn from the open ocean through the Piti Canal and Tepungan Channel. Piti Canal is a man-made canal that was originally constructed in 1972 as an auxiliary source of cooling water for the now-defunct Piti Power Plant. The Tepungan Channel, which was dredged in 1972-3, connects Piti Canal to the southwest edge of Piti Bay through passageways that pass underneath Cabras Hwy directly across from the intake structure.

Seawater entering the intake structure passes through one of seven sets of bar racks designed to exclude large debris from the rest of the CWIS. The four bar rack assemblies on Units 1 and 2 are constructed on 4" centers and are 8 ft wide, while the three bar racks on Units 3 and 4 are on 3" centers and are 7.75 ft across. Behind the bar racks are the traveling water screen assemblies that are designed to remove debris that passes through the bar racks. The screens extend from the upper deck of the intake structure to the bottom at a depth of 7.9 ft below sea level. Fishes and other organisms that are small enough to pass through the bar racks, but larger than the 3/8" mesh of the traveling screens are at risk to be impinged on the screens.

The traveling screen assemblies are equipped with a high-pressure seawater wash system, and screens are rotated either automatically or manually. When the screens rotate, impinged debris and organisms are rinsed from other screens into a common trough running across the front of the TWS assemblies.

The four main circulating water pumps (CWP) for Units 1 and 2 have rated pumping capacities of 30,000 gallons per minute (gpm). The total daily flow for each unit is 86.4 MGD for a total capacity of 172.8 MGD. The two main CWPs for Units 3 and 4 have rated pumping capacities of 22,600 gpm. The total daily flow for each unit is 32.6 MGD for a total capacity of 65.2 MGD. Units 3 and 4 have an auxiliary CWP with a rated pumping capacity of 45.300 gpm that can be used if either or both of the main CWP are not operating. The maximum cooling water volume for all four units is 238 mgd.

According to Phase I of the 316(b) study, intake water is drawn at a velocity of .61 meters per second (2.00 ft/s). The March 2010 memorandum indicated that the maximum intake velocity is reportedly less than 2.0 feet per second.

The ocean surrounding Guam is very deep relatively close to shore, particularly off the west side of the island in the vicinity of the CWIS. Approximately two miles offshore from the Glass Breakwater the water is more than 3,000 feet deep.

A study on the environmental effects of the CWIS by the University of Guam showed that water movement through the Piti Canal, which is influenced by the operation of the CWIS has no effect on current at the reef front beyond the entrance to the canal. They found that drogues released in the ocean to the northwest and outside of the canal entrance were affected by prevailing coastal currents and generally moved in a west-northwest direction. The movement of these drogues was not affected by the operation of the CWIS.

**C. EPA Determination**

EPA is required to consider location, design, construction, and capacity when determining BTA for minimizing adverse environmental impact. EPA has considered the following factors in making its determination:

1. The permittee employs bar racks and traveling screens to minimize impingement. The traveling water screen uses 3/8" mesh screens which are designed to catch and remove aquatic wildlife in addition to any ambient debris.

2. The location of the permittee's ocean intake minimizes impingement. The intake is located at the end of a manmade canal. The CWIS does not exert a significant hydrodynamic influence on the intake sources: the Pacific Ocean and Piti Bay.

3. Although the permittee has a design flow intake capacity of 238 MGD, the permittee adjusts intake volume daily according to electricity demand. According to their revised application, the permittee's average intake volume over the past three years was 220.3 MGD in 2009, 216.3 in 2010 and 203.3 in 2012. These flows are below the design intake of the facility minimizing entrainment and impingement proportional to the flow reduction.

4. No threatened or endangered species are believed to be present within the zone of influence of the intake structure.

After consideration of the above factors, EPA determines that the permittee implements the Best Technology Available to minimize adverse environmental impact, granted they continue to perform the necessary studies to gather data for future BTA consideration and implement the CWIS requirements in Part III.F. of the permit.

EPA is expected to release a final determination of BTA for Phase II 316(b) facilities by June 27, 2013. The final rule will likely specify short and long-term monitoring requirements and studies to be conducted by the permittee. The permittee is required to conduct all such monitoring and studies in accordance with and by the dates prescribed by the new rule. After receipt of new data and implementation of new BTA standards, EPA will reconsider its determination of BTA for the Cabras facility.

**D. Information Collection**

As requested by EPA, the permittee has developed an Impingement Monitoring Plan in accordance with 40 CFR Part 122.21(r)(2)-(8) of the proposed rule. The permittee has commenced monitoring in accordance with the plan and will continue to collect data as required in EPA's July 12 and August 25, 2011 letters and approved in their March 29, 2012 submittal.

## IX. SPECIAL CONDITIONS

**A. Development and Implementation of Best Management Practices**

Pursuant to 40 CFR 122.44(k)(4), EPA may impose Best Management Practices ("BMPs") which are "reasonably necessary…to carry out the purposes of the Act." The pollution prevention requirements or BMPs proposed in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the draft permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Piti Canal, Piti Channel, Apra Harbor and other surface waters while performing normal processing operations at the facility.

**B. Development of an Initial Investigation TRE Workplan for Whole Effluent Toxicity**

In the event effluent toxicity is triggered from WET test results, the permit requires the permittee to develop and implement a Toxics Reduction Evaluation ("TRE") Workplan. For acute toxicity, unacceptable effluent toxicity is found when "Fail" is determined, as indicated by a statistically significant difference between a test sample of 100 percent effluent and a control using a t-test. For chronic toxicity, unacceptable effluent toxicity is found in a single test result greater than 1.6 $TU_c$, or when any one or more monthly test results in a calculated median value greater than 1.0 $TU_c$. The draft permit also requires additional toxicity testing if a chronic toxicity monitoring trigger is exceeded. Within 90 days of the permit effective date, the permittee shall prepare and submit a copy of their Initial Investigation TRE Workplan (1-2 pages) for acute and chronic toxicity to EPA and ASEPA for review.

**C. Receiving Water Monitoring**

The permittee must conduct receiving water monitoring in order to assure compliance with the thermal mixing zone allowed for in the Guam WQS. The permittee must submit the locations of all the monitoring points to EPA after the completion of the first full quarter of monitoring.

**D. Antifouling Reporting**

The permittee must log all substances applied to their cooling water discharge. The permittee must keep a log onsite which is subject to inspection by and submittal to EPA.

## X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. **Impact to Threatened and Endangered Species**

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does

not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

The following species are listed as endangered or threatened in Guam by the Pacific Islands Fish and Wildlife Services ("FWS") Office:

**Mammals:**
-Bat, little Mariana fruit (*Pteropus tokudae*)
-Bat, Mariana fruit (*Pteropus mariannus*)

**Birds:**
-Crow, Mariana (aga) (*Corvus kubaryi*)
-Kingfisher, Guam Micronesian (*Halcyon cinnamomina cinnamomina*)
-Moorhen, Mariana common (*Gallinula chloropus guami*)
-Rail, Guam except Rota (*Rallus owstoni*)
-Swiftlet, Mariana gray (*Aerodramus vanikornsis bartschi*)
-White-eye, birdled (*Zosterops conspicillatus conspicillatus*)

**Sea Turtles:**
-Sea turtle, hawksbill (*Eretmochelys imbricata*)
-Sea turtle, green except where endangered (*Chelonia mydas*)
-Sea turtle, leatherback (*Dermochelys coriacea*)
-Sea turtle, loggerhead (*Caretta caretta*)

**Plants:**
-Iagu, Hayun (*Serianthes nelsonii*)

Of the species listed above, only the sea turtles have any geographic nexus, other than speculative incidental contact, with the Cabras Power Plant effluent or Cooling Water Intake Structure ("CWIS"). According to the FWS website, the leatherback and loggerhead sea turtle do not occur in Guam.

FWS's 1998 Recovery Plan for the hawksbill turtle identified directed take and coastal construction as the primary threats to the hawksbill in Guam. The plan also notes that the hawksbill was virtually extirpated from Guam prior to U.S. involvement and that there has only been one confirmed record of hawksbill nesting on the island of Guam. Additionally, in Table 1 the plan states that "power plant entrapment" is not a current problem in Guam.

In their 1998 Recovery Plan for the green turtle, FWS identified directed take, increased human presence, coastal construction, nest predation and algae/seagrass/reef degradation as the primary threats to the green turtle in Guam. The plan also notes in Table 1 that "power plant entrapment" is not a current problem in Guam.

The Guam WQS are written in order to, among other things, allow for the propagation and survival of marine organisms. This permit incorporates effluent limitations and narrative conditions to ensure that the discharge meets Guam WQS without any additional mixing zones. In consideration of the above, EPA believed that the proposed discharge is not likely to affect endangered species in Guam.

In 2004, the University of Guam noted in its study on the impact of Cabras' CWIS, that they found no apparent impact on either threatened or endangered species during surveys conducted on the biological community within the canal. Furthermore, as determined by EPA, the permittee's CWIS reflects Best Technology Available for minimizing adverse environmental impact. In consideration of the above, EPA believed that the permittee is not likely to affect endangered species in Guam.

EPA has provided U.S. Fish and Wildlife Service with copies of this fact sheet and the draft permit for review. At the time of permit issuance, EPA has not received a response from US FWS.

B. **Impact to Coastal Zones**

The Coastal Zone Management Act ("CZMA") requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

On December 4, 2012, the Guam Bureau of Statistics and Plans concurred with the permittee's certification that the proposed discharge complies with the enforceable policies of the Guam Coastal Management Program.

**C. Impact to Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act ("MSA") set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat ("EFH").

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permit does not directly discharge to areas of essential fish habitat. EPA has also determined that the cooling water intake structure reflects Best Technology Available. Additionally, in their 2004 study on the impact of the Cabras' CWIS, the University of Guam found no apparent impact on commercially viable species during surveys conducted on the biological community within the canal. Therefore, EPA has determined that the proposed permit is not likely to adversely affect essential fish habitat.

EPA has provided the National Marine Fisheries Service with copies of this fact sheet and the draft permit for review. NMFS has requested to receive copies of the impingement monitoring plan, storm water pollution prevention plan and any reports of incidents of non-compliance. EPA will share the requested documents with NMFS as they are received.

**D. Impact to National Historic Properties**

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this proposed NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

## XI. STANDARD CONDITIONS

### A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

### B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

## XII. ADMINISTRATIVE INFORMATION

### A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

### B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit is required to be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Notification of a draft permit was placed in the Pacific Daily News on August 1, 2012. EPA accepted comments through August 31, 2012. No formal comments were received.

### C. Public Hearing (40 CFR 124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

A public hearing was not requested.

**D. Water Quality Certification Requirements** (40 CFR 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law.

On December 14, 2012, EPA received a conditional 401 Water Quality Certification from Guam EPA. The conditions of the certification have been incorporated into the permit.

## XIII. CONTACT INFORMATION

Comments submittals and additional information relating to this proposal may be directed to:

Jamie Marincola
415-972-3520
Marincola.Jamespaul@epa.gov

EPA Region IX
75 Hawthorne Street (WTR-5)
San Francisco, California 94105

## XIV. REFERENCES

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# APPENDIX A

**Permit Site Visit**
Cabras Power Plant (NPDES Permit No. GU0020001)

PG Environmental, LLC

March 2010

# APPENDIX B

**CWA Section 401 Water Quality Certification**
Cabras Power Plant (NPDES Permit No. GU0020001, 401WQC 13-03)

Guam Environmental Protection Agency

December 14, 2012

# APPENDIX C

**Federal Consistency Concurrence**
Cabras Power Plant (NPDES Permit No. GU0020001)

Guam Coastal Management Program
Bureau of Statistics & Plans

December 4, 2012