GOVERNMENT OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU

IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY´S 10-YEAR INFRASTRUCTURE PLAN – DECEMBER 2020	**CASE NO**.: NEPR-MI-2021-0002 **SUBJECT**: Motion to Submit Third Group of Generation Projects Initial SOWs

MOTION TO SUBMIT THIRD GROUP OF GENERATION PROJECTS INITIAL SOWS

COMES NOW the Puerto Rico Electric Power Authority (PREPA), through its counsel of record, and respectfully submits and requests as follows:

1. On March 26, 2021, the Puerto Rico Energy Bureau of the Public Service Regulatory Board (the "Energy Bureau" or "Bureau") entered a Resolution and Order (the "March 26 Order") by which it ordered PREPA, among other things, to:

> submit to the Energy Bureau each new capital investment project. For projects to be funded with the [Federal Emergency Management Administration "FEMA"] fund and/or any other federal funds, PREPA shall submit the specific projects to the Energy Bureau at least thirty (30) calendar days prior to its submittal to the [Central Office for Recovery, Reconstruction and Resiliency "COR3"], FEMA and/or any other federal agency.

March 26 Order at pp. 18-19, ¶ 10.

2. PREPA has prepared a third group of initial scopes of work (SOW) for the Costa Sur Steam Plant ("Projects"). The SOWs include earthquake repair projects in Costa Sur. In compliance with the March 26 Order, PREPA herein presents the initial SOWs for said projects:

a. Costa Sur Water and Diesel Tanks. Exhibit A. This submission includes a set of three (3) work projects related to the January 2020 earthquake damage in Costa Sur. These proposed projects will restore the assets to pre-disaster function in compliance with approved codes and standards. These projects will be funded with the FEMA Public Assistance (PA) program. The

facilities consist of the following types of tanks, including raw and demineralized water tanks, as well as diesel tanks:

i. **Costa Sur Raw Water Tanks 1&2:** Raw water tanks store approximately 500k gallons of water that are used in the Costa Sur Steam Plant equipment cooling system. The objective of this project is to repair the raw water tanks at the Costa Sur Steam Plant by extending the existing concrete pile cap, installing new steel anchor chair and bolts to both tanks, among others. Exhibit A details the complete plan for repair including the contractor scope details as well as the cost estimate for each project.

ii. **Costa Sur Demi Water Tanks 5&6:** Demineralized water tanks store approximately 290k gallons of demineralized water used in the plant equipment cooling system and need replacement. The objective of this project is to build two demineralized water tanks at the Costa Sur Steam Plant. Some of the required work includes demolishing the existing pile cap, extending the existing concrete, installing foundation piles and repairing the existing earth embarkment under the tanks. Exhibit A details the complete plan for replacement of the tanks as well the contractor scope details and the cost estimate for each project.

iii. **Costa Sur Diesel Service Tank:** Diesel service tank stores approximately 150k gallons of diesel to be used for electric power production. The objective of this project is to repair one diesel storage tank at the Costa Sur Steam Plant. Some of the required tasks include cleaning and the certification that the current tank is free of gas, extending the existing concrete pile cap as well as the demolition and reconstruction of a concrete dike wall. Exhibit A details the complete plan for

repair, the contractor scope details as well as the cost estimate for each project.

b. Costa Sur Power Plant Discharge Channels. Exhibit B. The Costa Sur water discharge channel is a sheet pile lined channel used to return water to the Caribbean Sea after it has been used for cooling during the electric production process. The overall objective of the project is to restore the facility to a pre disaster function and to comply with approved codes and standards. PREPA anticipates project work will consist of executing a retrofit solution to improve the stability of existing sheet pile wall along the discharge channel. Exhibit B details the complete plan for repair and the contractor scope details, as well as the cost estimate for this project. This project will be funded with the FEMA PA program.

c. Costa Sur Work Completed Earthquake Repairs. Exhibit C. The Costa Sur Power Plant sustained damages during the January 2020 earthquakes, as a result the facilities and areas listed below needed immediate repair work to get the units back on-line as soon as possible. All repairs described in this SOW have been completed. Exhibit C section 3 details the scope of repair work completed, while section 5 includes the incurred costs for each project. This project will be funded with the FEMA PA program.

i. **Control Room 5&6:** Control room contains the monitoring and command consoles needed to control the Plants operations were restored.

ii. **Main Power Transformers 4, 5, & 6:** The transformers and associated support structure needed to increase the voltage produced by the units for connection to the electric transmission system were restored.

iii. **Boilers 5&6:** Boilers were damaged and required repair work to the air heater outer casing as well as the replacement of numerous air pre-heater components to restore proper functionality, tasks were completed.

iv. **Condensate Water Tank 5:** Condensation tank 5 required reparations to the structural components to support and secure the tank.

v. **New Condensate Water Tank 6:** Condensation tank which is part of the steam recovery system was rebuilt due to the earthquake damages.

vi. **Structural Repair Units1-4:** Repair and Replacement of structural components to building housing units 1 through 4.

vii. **Old Demi Plant:** The demineralized water tank of the plant steam production system required replacement.

3. The above-listed projects are aligned with the operative IRP and Modified Action Plan approved by the Energy Bureau on August 24, 2021. *See Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan* entered in case no. CEPR-AP-2018-0001, *In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*.

4. The SOWs herein presented by PREPA for the consideration of the Honorable Bureau include critical energy infrastructure information (CEII) that mustn't be disclosed to the public. This information varies between architectural, survey, demolition, structural and civil drawings and global positioning system data.

5. The following is a detailed list of the information that PREPA asserts is confidential and must be kept under seal.

Exhibit	**Description**	**Confidential Information**	**Request for Confidentiality**
Exhibit A	Costa Sur Water and Diesel Tanks	Architectural, survey, demolition, structural and civil drawings and design plans (.PDF file pp. 12-55) and global positioning system data	CEII

Exhibit B	Costa Sur Power Plant Discharge Channels	Final preliminary plans for design (.PDF file pp. 9-19) and global positioning system data	CEII
Exhibit C	Costa Sur Work Completed Earthquake Repairs	Global positioning system data	CEII

6. Article 6.15 of the *Puerto Rico Energy Transformation and RELIEF Act*, Act no. 57 of 2014, as amended ("Act 57")[1], provides that "any person who is required to submit information to the Energy [Bureau] believes that the information to be submitted has any confidentiality privilege, such person may request the [Bureau] to treat such information as such[.]" *Id.* at Sec. 6.15. "If the Energy [Bureau], after the appropriate evaluation, believes such information should be protected, it shall grant such protection in a manner that least affects the public interest, transparency, and the rights of the parties involved in the administrative procedure in which the allegedly confidential document is submitted." *Id.* at Sec. 6.15(a). If the Energy Bureau determines that the information is confidential, "the information shall be duly safeguarded and delivered exclusively to the personnel of the Energy [Bureau] who needs to know such information under nondisclosure agreements." *Id.* at Sec. 6.15(b). "The Energy [Bureau] shall swiftly act on any privilege and confidentiality claim made by a person subject to its jurisdiction by means of a resolution to such purposes before any allegedly confidential information is disclosed." *Id.* at Sec. 6.15(c).

7. Pursuant to its vested powers, the Energy Bureau approved the *Regulation on Adjudicative, Notices of Compliance, Rate Review and Investigations Proceedings* ("Regulation 8543").[2]

[1] *Puerto Rico Energy Transformation and RELIEF Act,* Act no. 57 of May 27, 2014, 22 L.P.R.A. §§ 1051-1056.

[2] Energy Bureau, *Regulation on Adjudicative, Notices of Compliance, Rate Review and Investigations Proceedings*, No. 8543 (December 16, 2015).

Regarding the safeguards that the Energy Bureau gives to confidential information, Regulation 8543 provides that:

> [i]f in compliance with the provisions of [Regulation 8543] or any of the Energy Bureau's orders, a person has the duty to disclose to the Energy Bureau information considered to be privileged pursuant to the Rules of Evidence, said person shall identify the allegedly privileged information, request the Energy Bureau the protection of said information, and provide supportive arguments, in writing, for a claim of information of privileged nature. The Energy Bureau shall evaluate the petition and, if it understands the material merits protection, proceed according to what is set forth in Article 6.15 of Act No. 57-2014, as amended.

Regulation 8543 at Sec. 1.15.

8. Federal and Puerto Rico law protect the confidentiality of CEII, the public disclosure of which may pose a security threat in that the information could be useful to a person or group in planning an attack on critical infrastructure. *See, e.g.*, 18 C.F.R. § 388.113, as amended by Federal Energy Regulatory Commission (FERC) Order No. 683, *Critical Energy Infrastructure Information* (issued September 21, 2006); *USA Patriot Act of 2001*, § 1016, creating the *Critical Infrastructures Protection Act of 2001*, including 42 U.S.C. § 5195c(e) (defining Critical infrastructure). FERC regulations subject such information to limitations on use and disclosure to "ensure that information deemed CEII stays out of the possession of terrorists." 18 C.F.R. § 388.113(d)(4). *Off. of People's Counsel v. Pub. Serv. Commn.*, 21 A.3d 985, 991, Util. L. Rep. P 27157, 2011 WL 2473405 (D.C. App. 2011).

9. Under the Critical Infrastructures Protection Act of 2001, the term "critical infrastructure" means "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters." 42 U.S.C. § 5195c(e).

10. In 2006, FERC Order no. 683 amended the regulations for gaining access to CEII and simplified procedures for obtaining access to CEII without increasing vulnerability of the energy infrastructure and ensuring that access to CEII does not facilitate acts of terrorism.

11. A utility is not required to obtain FERC or other federal government approval in order to designate information as CEII. For example, information required by FERC's Annual Transmission Planning and Evaluation Report, Form No. 715, ("FERC No. 715"), is *de facto* considered CEII and is automatically afforded the heightened protections. FERC No. 715 requires that any transmitting utility that operates integrated (non-radial) transmission facilities at or above 100 kV must annually submit information including but not limited to: Power Flow Base Cases, Transmitting Utility Maps and Diagrams, Transmission Planning Reliability Criteria, Transmission Planning Assessment Practices, and Evaluation of Transmission System Performance. Any utility that submits the required transmission information pursuant to FERC No. 715 does so with the knowledge that, as stated in the Form's Instructions, FERC "considers the information collected by this report to be CEII and will treat it as such." *See also* 18 C.F.R. § 141.300(d) relating to the Form and CEII.

12. Mainland regulators typically do not require a utility that designates material as CEII to follow any process before the federal government in order to make or support such a designation, and, further, that the regulator, in its informed discretion, can establish limits on how information that it considers CEII can be accessed.

13. The Energy Bureau, on numerous occasions in prior dockets has accepted the Authority's designations of material as CEII, recognizing that both federal law and Puerto Rico law support such designations when applicable.[3] It is respectfully requested that the Honorable

[3] *See e.g. Resolution and Order* entered on August 27, 2019, in case no. CEPR-AP-2018-0001, *In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*.

Energy Bureau find that the information categorized by PREPA as CEII is confidential and that the Secretary of the Energy Bureau be directed to keep the confidential CEII under seal.

WHEREFORE, PREPA respectfully requests the Energy Bureau to approve the above-listed Projects, find that the information categorized by PREPA as CEII is confidential and order the Secretary of the Energy Bureau to keep the confidential CEII under seal.

RESPECTFULLY SUBMITTED.

In San Juan Puerto Rico, 8th day of November 2021.

/s Katiuska Bolaños-Lugo
Katiuska Bolaños-Lugo
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TSPR No. 18,888

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CERTIFICATE OF SERVICE

It is hereby certified that I have filed the foregoing with the Clerk of the Energy Bureau using the electronic filing system using https://radicacion.energia.pr.gov/login and also, that I have served a copy on LUMA Energy, LLC and LUMA Energy ServCo, LLC through their counsel of record at laura.rozas@us.dlapiper.com and margarita.mercado@us.dlapiper.com.

In San Juan Puerto Rico on this 8th day of November 2021.

/s Katiuska Bolaños-Lugo
Katiuska Bolaños-Lugo

Exhibit A

Government of Puerto Rico

Puerto Rico Electric Power Authority

Earthquake 4473DR-PR

Costa Sur Permanent Repairs

PROJECT SCOPE OF WORK WITH COST ESTIMATES

Submittal to COR3 and FEMA

Costa Sur Water and Diesel Tanks

171512

10/6/2021

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4473-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

Puerto Rico Electric Power Authority (PREPA) is the agency that provides the electric service to the entire island of Puerto Rico. Available funding for this project has been identified under FEMA Public Assistance 42 U.S. Code § 5172 - Repair, restoration, and replacement of damaged facilities.

This document will be updated with information developed during the initial design and engineering phase through the construction phase.

The sections included in this document are:

- *Project Information*
- *Facilities*
- *Scope of Work*
- *Codes and Standards*
- *Cost Estimate*
- *406 Hazard Mitigation Proposal*
- *Environmental and Historic Preservation (EHP) Requirements*
- *Program Manager Certification*
- *PREPA Project Sponsor Comments*
- *Attachments*

Document Revision History

Version	Date	Summary of Changes
V1	10/06/2021	Initial SOW

Section 1. Project Information

General Information

Recipient	Central Office for Recovery, Reconstruction and Resiliency (COR3)
Sub-Recipient	Puerto Rico Electric Power Authority (PREPA)
Project Title	Costa Sur Water and Diesel Tanks
PREPA Project Number	

Federal Information

(provided by FEMA)

Damage Number(s)	Raw Water Tanks 1 & 2: 429735 Demi Water Tanks 5 & 6: 431102, 431105 Diesel Service Tank: 431112
Damaged Inventory/Asset Category	Costa Sur Permanent Repairs
FEMA Project Number *(formerly Project Worksheet)*	Earthquake 4473DR-PR
Amendment Number	

Program Manager: ***<Name>***

<Insert title here>

PREPA Project Sponsor: ***<Name >***

<Insert title here>

Section 2. Facilities

2.1. Facilities List

Name	GPS Location
Costa Sur Raw Water Tanks 1 & 2	[redacted]
Costa Sur Demi Water Tanks 5 & 6	[redacted]
Costa Sur Diesel Service Tank	[redacted]

Note: *GPS coordinates are required for all facilities.*

2.2. Facilities Description

Costa Sur raw water tanks 1 & 2 are 48' in diameter and 70' in height, each storing approximately 500k gallons of water to be treated and used in the plant equipment cooling system. Both tanks were damaged during the 6.4 magnitude earthquake in January of 2020 and are in need of repair.

Costa Sur demin water tanks 5 & 6 are 48' in diameter and 40' in height, each storing approximately 290k gallons of demineralized water used in the plant equipment cooling system. Both tanks were damaged in the January 2020 earthquake and are in need of replacement.

The Costa Sur diesel service tank is 35' in diameter and 40' in height and stores approximately 150k gallons of diesel to be used as fuel for electric power production. The tank and foundation were damaged during the January 2020 earthquake and are in need of repair.

Section 3. Scope of Work

3.1. Scope of Work Description (e.g., Plan for Repair)

Raw Water Tanks 1 & 2

The objective of this project is to successfully repair two (2) raw water tanks at the Costa Sur Steam Plant. Required work includes extension of the existing concrete pile cap, installation of new steel anchor chairs and bolts on both tanks, replacement of steel shells on raw water tank No. 1, demolition of existing concrete pile cap segments on both tanks, excavation and re-fill of soil material, as-built drawings, hydrostatic testing, and coating applications.

Contractor scope details:

a) Include all required labor, supervision, materials, equipment, insurance and bonds, municipal taxes, permit works, and rigging and safety equipment

b) Perform all tasks, documentation requirements, and pay all fees regarding the approval of the OGPe's "Permiso Único Incidental Operacional (Permiso General Consolidado)".

c) Demolish existing concrete segment of the structural slab around the tank and dispose of concrete debris in a PREPA-approved landfill; rebuild concrete base segment after completing tank structural repairs

d) Remove and relocate electrical conduits

e) Temporarily remove water supply and suction piping and reinstall after tank repairs completed

f) Temporarily remove existing steel platform and reinstall after tank repairs completed

g) Excavate and dispose of approximately 230 cubic yards of soil, per tank, in a PREPA-approved landfill

h) Demolish approximately 219 linear feet of existing concrete pile cap (8“ x 3’), per tank

i) Drill existing concrete pile cap base and install steel dowels for each tank

j) Install all required wood forms and steel reinforcement required to pour approximately 120 cubic yards of concrete to expand the existing pile cap (250’ x 5’ x 2’6”), per tank

k) Install 52 structural steel anchor chairs and 52 1-3/8” x 44” hot dipped galvanized bolts per tank

l) Remove and replace approximately 4,000 square feet of steel shell on Raw Water Tank No.1.

m) Install new overflow pipe for each tank

n) Install new roof steel railing for each tank

o) Perform interior and exterior tank surface preparation and finish paint coating application per drawings

Demi Water Tanks 5 & 6

The objective of this project is to design and build two (2) demineralized water tanks, #5 and #6, at the Costa Sur Steam Plant. Required work includes demolition of the existing tanks and segments of the existing pile cap, extension of the existing concrete pile cap, installation of foundation piles, repair of existing earth embankments under the tanks, as-built drawings, hydrostatic testing, and coating applications.

Contractor scope details:

a) Include all required labor, supervision, materials, equipment, insurance and bonds, municipal taxes, permit works, rigging and safety equipment, storage of coatings and grit blast material and equipment

b) Perform all tasks, documentation requirements, and pay all fees regarding the approval of the OGPe’s “Permiso Único Incidental Operacional (Permiso General Consolidado)”

c) Demolish and disposal of two existing 48’-0” diameter and 40’-0” high tanks

d) Install flexible pipe connections in several locations;

e) Maintain one tank in service during construction, requiring piping modifications to be completed in two phases; pipes must be temporarily supported when cut

f) Demolish 8" deep by 36" tall exterior section of pile cap on both tanks

g) Rotate a valve 90 degrees upward to accommodate pile cap extension, preventing it from interfering with the concrete pile cap extension

h) Detach existing anchor chairs with the anchors

i) Refrain from cutting existing pile cap rebar

j) Remove section of an existing chain link fence and relocate after pile cap extension is complete

k) Install flexible connections to select pipes

l) Install new pipe supports as per drawing P-01

m) Modify route of two pipes as shown in drawing P-01

n) Extend existing drain pipes on both tanks

o) Lower overflow pipe to 31'-6" on both tanks

p) Modify and fill existing slope around pile caps

q) Extend slope 10' around both tanks in the north, south, and west; grade of new slope shall be 2:1

r) Install a 4'wide by 3' deep at the base of the slope at the west and north side of the tanks

s) Construct a new retaining wall at the south of tank 1; retaining wall to be 4'4" tall until the last part that slopes down to ground level

t) Put erosion and sedimentation control plan in place prior to start of excavation and pile installation

u) Install 88 new HP12x53 piles, 44 per tank, 55 ft long. Coordinate the installation of piles with the existing utilities. One load test per pile cap needs to be performed. If contractor submits an alternate pile section, sealed structural calculations shall be submitted. Calcs will be approved after a peer review form the designer is done. Piles shall resist the loads shown on the drawings (100 kips axial, 30 kips lateral) with the maximum deflection permitted on the original design (7/8"). Incomplete calculations, or those without the seal of a structural engineer will be rejected.

v) Design and build two new steel 48'-0" diameter and 40'-0" high tanks in compliance with API-650

w) Install 28 new anchors into each of the pile cap extension

x) Install a 4' pile cap extension around both pile caps connected with rebar on top of the new piles.; concrete temperature shall be controlled during curing process to prevent cracking

y) Install three new stairs to access the pile cap extension top

z) Install 28 new anchor chairs and bolts on each tank

aa) Perform interior and exterior tank surface preparation and finishing paint coating application, per drawings

Diesel Service Tank

The objective of this project is to repair one (1) diesel storage tank at the Costa Sur Steam Plant. Required work includes cleaning and certifying the existing tank is free of gas, extension of the existing concrete pile cap, demolition and re-construction of a segment of existing concrete dike wall, demolition and re-construction of the existing structural concrete slab, excavation and re-fill of soil material, as-built drawings, hydrostatic testing, and coating applications.

Contractor scope details:

a) Work shall include all required labor, supervision, materials, equipment, insurance and bonds, municipal taxes, permit works, and rigging and safety equipment

b) Perform all tasks, documentation requirements, and pay all fees regarding the approval of the OGPe's "Permiso Único Incidental Operacional (Permiso General Consolidado)"

c) Remove, dispose and clean of all the sludge, diesel-type fuel residues and all fuel located inside the diesel tank of the Hydrogas Combustion Turbine Station at the Costa Sur Power Plant. Perform tests required to certify the tank as gas-free, in compliance with the project specifications. Tank cleaning includes floors, ceilings, pipe outlets, walls, and all structural elements (e.g., joists and columns) of the tank.

d) Remove and dispose of existing lead-based paint in areas impacted by repairs (e.g., roof, spiral stairs, and railings).

e) Remove, transport, and dispose of any material accumulated in the diesel tank that includes, but is not limited to: fuel residues, solids, and sludge; surfaces must be free of any trace of fuel.

f) Demolish an existing concrete segment of the dike-wall and dispose of concrete debris in a PREPA-approved landfill; rebuild concrete segment after completing all tank structural repairs

g) Demolish an existing concrete segment of the structural slab around the tank and dispose of concrete debris in a PREPA-approved landfill; re-build concrete base segment after completing tank structural repairs

h) Remove and cap existing supply and suction fuel piping; reinstall fuel piping at end of project

i) Excavate and dispose of approximately 70 cubic yards of soil in a PREPA-approved landfill

j) Demolish approximately 109 linear foot segment (8" x 3') of existing pile cap

k) Drill existing concrete pile cap base and install steel dowels

l) Install all required wood form and steel reinforcement and pour approximately 70 cubic yards of concrete to expand existing pile cap (125' x 5' x 3').

m) Install 20 structural steel anchor chairs and 20 1-3/8" x 50" hot dipped galvanized bolts

n) Replace existing spiral steel stairs and install steel railing on tank roof

o) Prepare interior and exterior tank surface and apply finish paint coating; areas to be prepared and painted include the first bottom steel shell, fifth upper steel shell, and inner roof and rafters

3.2. Type of Project

Indicate whether the intended plan is a(n):

1. **Restoration to Codes/Standards**: Restores the facility(s) to pre-disaster function and to approved codes/standards
2. **Improved Project**: Restores the pre-disaster function of the facility(s) and incorporates improvements including any:
    a. Other improvements, not required by codes and standards
    b. Changes in facility size, capacity, dimension, or footprint
3. **Alternate Project:** Does not restore the pre-disaster function of the damaged facility(s)

Choose One (Restoration, Improved or Alternate) *If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendation.*
Restores to Codes/Standards

Note: *If preliminary Architectural and Engineering (A&E) work has not been completed, the type of work designation is considered initial and is based on currently available information. The type of work designation may be revised based on the results of the completed preliminary A&E work.*

3.3. Preliminary Architectural and Engineering (A&E)

Is architectural and engineering funding required to help define the intended scope of work?

Yes

This document is being submitted to obtain funding for A&E services necessary to develop a detailed SOW for the project.

Section 4. Codes and Standards

Which of the following types of codes, specifications, and standards apply to the restoration, replacement, relocation, or alternate scope of work?

4.1. Codes, Specifications, and Standards

Yes/No. If yes, describe how incorporated below.
Applicable codes and standards will be identified and incorporated into the plans and specifications.

4.2. Industry Standards

Yes/No. If yes, describe how incorporated below.
Applicable industry standards will be identified and incorporated into the plans and specifications.

Section 5. Cost Estimates

Raw Water Tanks 1 & 2:

Cost Type	Amount ($M)
Design & Construction	$3,000,000.00
Total Project Estimated Cost	$3,000,000.00

Note: *If available, detailed engineering cost estimates will be included as an attachment.*

Demin Water Tanks 5 & 6:

Cost Type	Amount ($M)
Designs and Construction	$4,098,000
Total Project Estimated Cost	$4,098,000

Diesel Service Tank:

Cost Type	Amount ($M)
Construction	$1,000,000.00
Total Project Estimated Cost	$1,000,000.00

Section 6. 406 Hazard Mitigation Proposal

6.1. 406 Mitigation Opportunity Scope of Work

PREPA will evaluate hazard mitigation opportunities as part of the A/E design phase, document the results of Benefit-Cost Analyses (BCAs) associated with mitigation opportunities, and submit any proposed 406 mitigation measures with the detailed SOW and Cost estimate for this project.

6.2. 406 Mitigation Opportunity Cost Estimate

PREPA will provide cost estimates and BCAs for any 406 Hazard Mitigation proposals that are identified during the A/E design phase and will submit them with the detailed SOW and Cost Estimate for this project.

Note: *If available, detailed engineering cost estimates will be included as an attachment.*

Section 7. EHP Requirements

EHP considerations will be identified and evaluated during the Preliminary Architectural and Engineering Design phase and will be submitted to FEMA for review. Requirements will be incorporated into the final design and construction documents approved by FEMA prior to construction activities.

Section 8. Program Manager Lead Certification

Based on my knowledge and information available to date, I certify that the contents of this document accurately reflect the project scope of work and cost estimates.

Program Manager's Printed Name	Date
Title	Signature

Section 9. PREPA Project Sponsor Comments

Comments
<Insert any comments here>

PREPA Project Sponsor's Printed Name	Date
Title	Signature

Section 10. Attachments

10.1. Project Detailed Cost Estimates

<Insert project detailed cost estimates from A&E here (if available)>

10.2. Engineering Studies and Designs

<Insert engineering studies and designs (if available)>

10.3. Location Maps and Site Pictures

<Insert a map of sufficient scale identifying the project area and any additional location maps and site pictures (if available)>

10.4. Other: (Please Describe)

<Insert other documents attached to this submittal>

Exhibit B

Government of Puerto Rico

Puerto Rico Electric Power Authority

Earthquake 4473DR-PR

Costa Sur Permanent Repairs

PROJECT SCOPE OF WORK WITH COST ESTIMATES

Submittal to COR3 and FEMA

Costa Sur Costa Sur Power Plant Discharge Channels

171517

10/6/2021

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4473-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

Puerto Rico Electric Power Authority (PREPA) is the agency that provides the electric service to the entire island of Puerto Rico. As such, the facilities, sites, and systems identified in this Scope of Work are eligible as critical services facilities as defined in the PAAP (Section 428) and BBA 2018 guidance documents. Additional details may be found in Sections 3 and 4, respectively.

This document will be updated with information developed during the initial design and engineering phase through the construction phase.

The sections included in this document are:

- *Project Information*
- *Facilities*
- *Scope of Work*
- *Codes and Standards*
- *Cost Estimate*
- *406 Hazard Mitigation Proposal*
- *Environmental and Historic Preservation (EHP) Requirements*
- *Program Manager Certification*
- *PREPA Project Sponsor Comments*
- *Attachments*

Document Revision History

Version	Date	Summary of Changes
V1	10/06/2021	Initial

Section 1. Project Information

General Information

Recipient	Central Office for Recovery, Reconstruction and Resiliency (COR3)
Sub-Recipient	Puerto Rico Electric Power Authority (PREPA)
Project Title	Costa Sur Water Discharge Channel
PREPA Project Number	

Federal Information

(provided by FEMA)

Damage Number	431138
Damaged Inventory/Asset Category	Costa Sur Permanent Repairs
FEMA Project Number *(formerly Project Worksheet)*	Earthquake 4473DR-PR
Amendment Number	

Program Manager: ***<Name>***

<Insert title here>

PREPA Project Sponsor: ***<Name >***

<Insert title here>

Section 2. Facilities

2.1. Facilities List

Name	GPS Location
Costa Sur Water Discharge Channel	[redacted]

Note: *GPS coordinates are required for all facilities.*

2.2. Facilities Description

The Costa Sur water discharge channel is a sheet-pile-lined channel used to return water to the Caribbean Sea that has been used for cooling during the electric production process.

Section 3. Scope of Work

3.1. Scope of Work Description (e.g., Plan for Repair)

The scope of work for this project consists of executing a retrofit solution to improve the stability of the existing sheet pile wall along the discharge channel. The solution includes installing a pipe-pile combination wall in front of the existing channel wall at each side of the discharge channel.

Contractor scope details:

a) Responsible for as-built drawings, labor, equipment, materials, environmental permits, construction, and supervision required to successfully rehabilitate the Water Discharge Channel at the Costa Sur Steam Plant

b) Perform all tasks, documentation requirements, and pay all fees regarding the approval of the OGPe's "Permiso Único Incidental Operacional (Permiso General Consolidado)"

c) Dispose of concrete debris, resulting from expansion of the existing concrete base

d) Perform an as-built survey to verify all dimensions and existing conditions prior to actual construction

e) Install pipe-pile combination wall system using, 52 – 2' diameter pipe piles, to depth specified in plans (total length of pipe piles = 2,880 lf); fill steel pipe piles with poured concrete

f) Perform pipe-pile load tests: Install pipe-pile load test samples and perform load tests in accordance with project specifications once concrete has attained a minimum of 95% of its specified 28-day compressive strength, as determined from test cylinders

g) Install 113-ton sheet-pile sections of the combination wall system with at least 1.80 meters beneath the mudline between each pipe pile

h) Supply and pour approximately 334 cubic yards of concrete grout between existing sheet piling and new sheet piling to fill gap between the existing and new wall

i) Build a new continuous pile cap and pedestal at each bracing support to support the steel bracing system. The concrete pile cap, pedestal, and grade shall have approximately 260 cubic yards.

j) Supply and install approximately 320,000 pounds of galvanized steel trusses between the exiting concrete wall of the channel.

k) Galvanized steel is proposed on the combination wall system (i.e., steel pipe piles and sheet piles) and the bracing system (steel trusses).

3.2. Type of Project

Indicate whether the intended plan is a(n):

1. **Restoration to Codes/Standards**: Restores the facility(s) to pre-disaster function and to approved codes/standards
2. **Improved Project**: Restores the pre-disaster function of the facility(s) and incorporates improvements including any:
    a. Other improvements, not required by codes and standards
    b. Changes in facility size, capacity, dimension, or footprint
3. **Alternate Project:** Does not restore the pre-disaster function of the damaged facility(s)

Choose One (Restoration, Improved or Alternate) *If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendation.*
Restores to Codes/Standards

Note: *If preliminary Architectural and Engineering (A&E) work has not been completed, the type of work designation is considered initial and is based on currently available information. The type of work designation may be revised based on the results of the completed preliminary A&E work.*

3.3. Preliminary Architectural and Engineering (A&E)

Is architectural and engineering funding required to help define the intended scope of work?

Yes

This document is being submitted to obtain funding for A&E services necessary to develop a detailed SOW for the project.

Section 4. Codes and Standards

Which of the following types of codes, specifications, and standards apply to the restoration, replacement, relocation, or alternate scope of work?

4.1. Codes, Specifications, and Standards

Yes/No. If yes, describe how incorporated below.
Applicable codes and standards will be identified and incorporated into the plans and specifications.

4.2. Industry Standards

Yes/No. If yes, describe how incorporated below.
Applicable industry standards will be identified and incorporated into the plans and specifications.

Section 5. Cost Estimates

Cost Type	Amount ($M)
Final Design, Engineering and Construction	$ 6,700,000.00
Total Project Estimated Cost	$ 6,700,000.00

Note: *If available, detailed engineering cost estimates will be included as an attachment.*

Section 6. 406 Hazard Mitigation Proposal

6.1. 406 Mitigation Opportunity Scope of Work

PREPA will evaluate hazard mitigation opportunities as part of the A/E design phase, document the results of Benefit-Cost Analyses (BCAs) associated with mitigation opportunities, and submit any proposed 406 mitigation measures with the detailed SOW and Cost estimate for this project.

6.2. 406 Mitigation Opportunity Cost Estimate

PREPA will provide cost estimates and BCAs for any 406 Hazard Mitigation proposals that are identified during the A/E design phase and will submit them with the detailed SOW and Cost Estimate for this project.

Note: *If available, detailed engineering cost estimates will be included as an attachment.*

Section 7. EHP Requirements

EHP considerations will be identified and evaluated during the Preliminary Architectural and Engineering Design phase and will be submitted to FEMA for review. Requirements will be incorporated into the final design and construction documents approved by FEMA prior to construction activities.

Section 8. Program Manager Lead Certification

Based on my knowledge and information available to date, I certify that the contents of this document accurately reflect the project scope of work and cost estimates.

Program Manager's Printed Name	Date
Title	Signature

Section 9. PREPA Project Sponsor Comments

Comments
<Insert any comments here>

PREPA Project Sponsor's Printed Name	Date
Title	Signature

Section 10. Attachments

10.1. Project Detailed Cost Estimates

<Insert project detailed cost estimates from A&E here (if available)>

10.2. Engineering Studies and Designs

<Insert engineering studies and designs (if available)>

10.3. Location Maps and Site Pictures

<Insert a map of sufficient scale identifying the project area and any additional location maps and site pictures (if available)>

10.4. Other: (Please Describe)

<Insert other documents attached to this submittal>

Exhibit C

Government of Puerto Rico

Puerto Rico Electric Power Authority

Earthquake DR-PR-4473

Costa Sur Permanent Repairs

PROJECT SCOPE OF WORK WITH COST ESTIMATES

Submittal to COR3 and FEMA

Costa Sur – Work Completed Earthquake Repairs

171513

10/7/2020

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4473-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

This document will be updated with information developed during the initial design and engineering phase through the construction phase.

The sections included in this document are:

- *Project Information*
- *Facilities*
- *Scope of Work*
- *Codes and Standards*
- *Cost Estimate*
- *406 Hazard Mitigation Proposal*
- *Environmental and Historic Preservation (EHP) Requirements*
- *Program Manager Certification*
- *PREPA Project Sponsor Comments*
- *Attachments*

Document Revision History

Version	Date	Summary of Changes
V.1	10.13.2021	Initial SOW

Section 1. Project Information

General Information

Recipient	Central Office for Recovery, Reconstruction and Resiliency (COR3)
Sub-Recipient	Puerto Rico Electric Power Authority (PREPA)
Project Title	Costa Sur – Work Completed Earthquake Repairs
PREPA Project Number	

Federal Information

(provided by FEMA)

Damage Number(s)	Control Room 5 & 6: 426380 Main Power Transformers 4, 5, & 6: 431120, 431132 Boilers 5 & 6: 431118, 431129 Condensate Water Tank 5: 431107 New Condensate Water Tank 6: 431109 Structural Repairs Units 1-4: 440253, 440255, 440257, 440258 Old Demi Plant: 433256
Damaged Inventory/Asset Category	Costa Sur Permanent Repairs
FEMA Project Number *(formerly Project Worksheet)*	Earthquake 4473DR-PR 171513
Amendment Number	

Program Manager: ***<Name>***

<Insert title here>

PREPA Project Sponsor: ***<Name >***

<Insert title here>

Section 2. Facilities

2.1. Facilities List

Name	GPS Location
Control Room 5 & 6: 426380	[redacted]
Main Power Transformers 4, 5, & 6: 431120, 431132	[redacted]
Boilers 5 & 6: 431118, 431129	[redacted]
Condensate Water Tank 5: 431107	[redacted]
New Condensate Water Tank 6: 431109	[redacted]
Structural Repairs Units 1-4: 440253, 440255, 440257, 440258	[redacted]
Old Demi Plant: 433256	[redacted]

Note: *GPS coordinates are required for all facilities.*

2.2. Facilities Description

The Costa Sur Steam Power Plant sustained damages during the 6.4 magnitude earthquake that hit Puerto Rico in January of 2020. The facilities listed above all received damage from the earthquake and were in need of immediate repair to bring the units back on-line as quickly as possible; all repairs described in this SOW have been completed.

A brief description of each of the listed facilities is provided below and the specific scopes of work completed at each facility are provided in Section 3 below.

Control Room 5 & 6: This control room contains the monitoring and command consoles required for station operations personnel to control plant equipment and the electrical output of units 5 and 6 at the Costa Sur Steam Power Plant. Earthquake damages impacted the control room facilities, shift engineer and operators room areas (including bathroom and kitchen facilities), and the compressor room.

Main Power Transformers 4, 5, & 6: The main power transformers are required to step-up the voltage produced by the units for connection to the electric transmission system. Earthquake damages were sustained to the transformers and associated support structures.

Boilers 5 & 6: Boilers are part of the plant steam production system and sustained damages requiring repair of the air heater outer casing and replacement of numerous air pre-heater components to restore proper functionality.

Condensate Water Tank 5: Condensate tank 5 is part of the steam recovery system within the plant and received damage to the structural components required to support and secure the tank in place.

New Condensate Water Tank 6: Condensate tank 6 is also part of the steam recovery system within the plant and required rebuild after earthquake damages.

Structural Repairs Units 1-4: Buildings housing units 1-4 sustained damage to various structural members including steel and concrete structures, requiring repair and replacement of structural components.

Old Demi Plant: The demi (demineralized) water tank stores treated water ready for use in the plant steam production system. This demi tank and supporting structures were damaged during the earthquake and required replacement.

Section 3. Scope of Work

3.1. Scope of Work Description (e.g., Plan for Repair)

Scopes of work are noted below for

Control Room 5 & 6:

1) TASK 26 & 28, Exterior and Interior Repairs to Control Room 5 & 6 and Engineer Room Areas
    a) Demolished
        i) Perimeter walls
        ii) Internal wall at shift engineer room area
        iii) Damaged lighting fixtures and luminaries
    b) Isolated and protected control consoles 5 & 6 (panels and devices) from demolition work, reconstruction, and water intrusion. Dust control system was required.
    c) Supplied and Installed 246 linear feet of 5-1/2” metal framing, 18-gauge track and studs reinforced at 8’ vertical and horizontal directions, with reinforced studs every 12” plus horizontal reinforced bars, doors and windows shall be reinforced with treated wood
    d) Supplied and installed ¾” thick Plycem for external walls and ½” thick Plycem for internal partitions, Duro Rock (or similar) with noise insulation and R13 thermal insulation, primer, and white paint finish
    e) Plastered exterior walls with cementitious reinforced driver with fiber adhesive. Includes finishing primer and paint, with color to be selected by PREPA
    f) Primed and painted interior (approx. 10ft) and exterior walls (approx. 15ft)
    g) Reinstalled ten (10) windows, reinforced with Al frame, reusing existing glass

h) Supplied and installed main entrance sliding door, including replacement of automatic entry/exit system

i) Supplied and installed acoustic ceiling tile frames (2'x 2'), anchored every 4' in both directions and reinforced with 2" studs every 12 sq.ft., compatible with Main Tee Owens and/or Armstrong ceiling tiles (includes cross and main tees and Foxboro system room)

j) Supplied and installed 5/8" white acoustic ceiling tiles, Armstrong or approved equal, including noise and thermal insulation

k) Supplied and installed 2' x 2' lighting fixture panel with LED white luminaires equal to 3500 lumens, 120/277 Volts/60 hz

l) Reinstalled existing (undamaged) luminaries and fixtures, flat type, independently anchored to acoustic frame

m) Prepared metal structure surfaces for anticorrosive treatment; two coats of anticorrosive treatment were applied to affected metal structures

n) Cleaned and polished existing ceramic floor tiles

o) Daily dust control system

2) TASK 29, Civil and Interior Repairs to Shift Engineer Area and Operators Room Area

a) Demolished (removal and disposal)

i) Perimeter walls of operator and shift engineer room areas

ii) Furniture and accessories for four (4) bathrooms, including mirrors, faucet, vanities, and toilets

iii) Furniture and accessories in kitchen area

iv) Damaged furniture, cabinets, file cabinets, accessories, luminary system

v) Internal wall separating shift engineer room area

vi) Damaged lighting fixtures

b) Isolated undamaged furniture, equipment, and devices from construction areas and protected from water intrusion, demolition work, and reconstruction. Dust control system required.

c) Supplied and installed 233 linear feet of 5-1/2" metal framing, 18-gauge track and studs reinforced at 8' vertical and horizontal directions, with reinforced studs every 12" plus horizontal reinforced bars, doors and windows shall be reinforced with treated wood

d) Supplied and install ¾" thick Plycem for external walls and ½" thick Plycem for internal partitions, Duro Rock (or similar) with noise insulation and R13 thermal insulation, primer, and white paint finish

e) Plastered exterior walls with cementitious reinforced driver with fiber adhesive. Include finishing, primer, and paint, with color to be selected by PREPA.

f) Repaired cracks on all affected concrete walls

g) Primed and painted interior (approx. 10ft) and exterior walls (approx. 16ft)

h) Supplied and installed eight (8) windows, reinforced with Al frame, reusing existing glass

i) Supplied and installed one (1) Al emergency exit door, reusing existing exit mechanism, and one (1) Al for small storage room

j) Supplied and installed four (4) Al doors for bathrooms

k) Scope for four (4) Bathrooms:

   i) Supplied and installed vanities, toilets, mirrors, faucets, accessories, and one (1) 110 cfm exhaust fan per bathroom (similar to existing)

   ii) Demolished structurally damaged walls, reconstructed, and installed new tiles similar to existing (bathrooms 1 and 3 only).

   iii) Repaired all nonstructural wall cracks

   iv) Cleaned and polish floor tiles

l) Kitchen scope

   i) Supplied and installed high density pvc wall and floor cabinets with Formica or similar, high density countertop with Formica Al metal color finish or similar, 8' each

   ii) Supplied and installed ceramic tile backsplash

   iii) Supplied and Installed kitchen sink and faucet

   iv) Cleaned and polished floor tiles

m) Supplied and Installed acoustic ceiling tile frames (2'x 2'), anchored every 4' in both directions and reinforced with 2" studs every 12 sq.ft., compatible with Main Tee Owens and/or Armstrong ceiling tiles (includes cross and main tees and Foxboro system room)

n) Supplied and installed 5/8" white acoustic ceiling tiles, Armstrong or approved equal, including noise and thermal insulation

o) Supplied and installed 2' x 2' lighting fixture panel with LED white luminaires equal to 3500 lumens, 120/277 Volts/60 hz

p) Reinstalled existing (undamaged) luminaries and fixtures, flat type, independently anchored to acoustic frame

q) Prepared metallic structure surfaces for anticorrosive treatment; two coats of anticorrosive treatment were applied to affected metal structures

r) Cleaned and polished existing ceramic floor tiles.

s) Daily dust control system

3) TASK 27, Compressor Room Demolition and Reconstruction

   a) Demolished eight (8) marked walls, at the perimeter and small storage room

   b) Pressure washed, repaired, and finished remaining concrete walls and columns

   c) Removed, relocated, and reinstalled four (4) exhaust fans using new supports and hangers

d) Supplied and installed one (1) 4000 cfm, 220Volt/60hz, ¼ hp exhaust fan, similar to Dayton, including mechanical and electrical installation and hangers anchored to ceiling. Reinstalled fan to exhaust southward.

e) Re-anchored pipelines on north wall with hangers attached to horizontal steel ceiling column.

f) Reattached and anchored compressor electrical conduits, pipelines, and exhaust ducts to horizontal steel ceiling columns.

g) Daily dust control system

h) Remaining walls were primed and painted white

4) Additional contractor requirements

a) Supplied all necessary labor, supervision, equipment, materials, parts, tools, consumables, office trailer, and bathroom facilities

b) Removed and disposed of debris, damaged furniture, accessories, equipment, and industrial waste

c) Followed Costa Sur Safety and Health Regulations, including COVID-19 protocol, at all times

d) Kept personnel on plant premises at all times during specified working hours; only one person allowed out of the plant at lunch time and during working hours

e) Performed work in ten hours shifts, six (6) days per week, with all work being completed in a maximum of 75 days

f) Prioritized Control Console and Foxboro room areas 5-6

g) Paid Municipal and other applicable taxes (e.g., 1.5% Service Tax),

h) Provided Workman's Compensation Insurance Policy ("CFSE" in Spanish), other required insurance, and bonds

i) Provided proposal with a project schedule in Microsoft Project

j) Provided documentation of work to be done and products to be used prior to execution for PREPA approval; PREPA had a maximum of 48 hours for review and approval

k) Included PREPA approval process in 75-day maximum for project execution

<u>Main Power Transformers 4, 5, & 6:</u>

1) Main Power Transformer 4 – Task 57 (dimensions: 32' x 30' x 20")

a) Pressure washed surfaces to remove oil, grease, and/or other contaminants; properly disposed of oily/contaminated water

b) Sand blasted surfaces to remove any rust, existing finish coatings, and prepare for repainting

c) Removed loose concrete from floor and prepared surface for application of Master BASF Emaco T430, or approved equal, following all manufacturer application requirements (approximate area of 6'x6' at an average thickness of 1.5")

d) Repaired cracks on walls and floor using BASF Concresive 1380, or approved equal; following all manufacturer application requirements

e) Sealed concrete surfaces using BASF Masterseal 700CR, or approved equal, after all concrete repairs were completed; following all manufacturer application requirements

f) Recoated yellow safety paint on dike exterior, handrails, and stairs

g) Disposed of debris and contaminated water

2) Main Power Transformer 5 – Task 48 (dimensions: 60'x30'x32")

a) Pressure washed surfaces to remove oil, grease, and/or other contaminants; properly disposed of oily/contaminated water

b) Sand blasted surfaces to remove any rust, existing finish coatings, and prepare for repainting

c) Removed loose concrete from floor and prepared surface for application of Master BASF Emaco T430, or approved equal, following all manufacturer application requirements (approximate area of 6'x6' at an average thickness of 1.5")

d) Repaired cracks on walls and floor using BASF Concresive 1380, or approved equal, following all manufacturer application requirements

e) Repaired longitudinal joint crack with BASF Masterseal CR 195, or approved equal, following all manufacturer application requirements

f) Sealed concrete surfaces using BASF Masterseal 700CR, or approved equal, after all concrete repairs were completed, following all manufacturer application requirements

g) Recoated yellow safety paint on dike exterior, handrails, and stairs

h) Disposed of debris and contaminated water

3) Main Power Transformer 6 – Task 58 (dimensions: 60'x30'x32")

a) Pressure washed surfaces to remove oil, grease, and/or other contaminants; properly disposed of oily water

b) Sand blasted surfaces to remove any rust, existing finish coatings, and prepare for repainting

c) Removed loose concrete from floor and prepare surface for application of Master BASF Emaco T430, or approved equal; follow all manufacturer application requirements (assume an area of 6' X 6' at an average thickness of 1.5")

d) Repaired cracks on walls and floor using BASF Concresive 1380, or approved equal, following all manufacturer application requirements

e) Consider partial demolition of the northeast corner concrete wall, forming it back and repouring it with BASF Master Emaco S466, or approved equal; follow all manufacturer application requirements (assume a volume of 4.5 cubic feet).

f) Repaired longitudinal joint crack with BASF Masterseal CR 195, or approved equal, following all manufacturer application requirements

g) Sealed concrete surfaces using BASF Masterseal 700CR, or approved equal, after all concrete repairs were completed, following all manufacturer application requirements

h) Recoated yellow safety paint on dike exterior, handrails, and stairs

i) Disposed of debris and contaminated water

Boilers 5 & 6:

1) Replaced air pre-heater components, including baskets, sector plates, adjusters, static seals, bypass seals, radial and axial seals, and seal ring segments for both “cold” and “hot” sections (and calibrated components)
2) Repaired air heater outer casing

Condensate Water Tank 5:

1) Demolished and disposed of existing structural elements
2) Provided and installed anchor bolts and chairs, as per Option A or Option B (PREPA shall decide which option to be used)
3) Repaired existing concrete pile cap with epoxy and cement mortar materials
4) Extended pile cap, per Option A or B
5) Repaired steel structure, per Option A or B
6) Constructed concrete stairs

New Condensate Water Tank 6:

1) Built one (1) new condensate tank (#6) at the Costa Sur Steam Plant
   a) Contractor provided design and build services, including all engineering, permit work and permits, design, construction, hydrostatic testing, labor, equipment, materials, safety equipment, and supervision for work scope
   b) Tank nominal capacity of 288,000 gallons
   c) 35’0” diameter and 40’0” height
   d) Vertical type with flat bottom and supported cone roof in accordance with technical specifications

Structural Repairs Units1-4:

1) Contractor furnished: labor as required to complete structural repairs, workforce supervision, structural materials (including replacement beams), new fixtures, gussets referenced in ISEPC, tools, equipment, scaffolding as required to complete the work, and required engineering and site visits
2) Removed and repaired or replaced damaged structural members
3) Removed and replaced concrete column bases as required to perform repairs

4) Prepared surfaces in areas requiring structural repair
5) Applied paint primer to any existing surfaces affected by structural repairs and all new structural steel members provided by contractor
6) Removed and reinstalled grating as required to access work areas

Old Demi Plant:

1) Disconnected tank
2) Lifted tank and delivered to site
3) Repaired or modified tank supports and/or bases as required to support new tank
4) Reconnected tanks to existing pipes and repaired broken pipes

3.2. Type of Project

Indicate whether the intended plan is a(n):

1. **Restoration to Codes/Standards**: Restores the facility(s) to pre-disaster function and to approved codes/standards
2. **Improved Project**: Restores the pre-disaster function of the facility(s) and incorporates improvements including any:
    a. Other improvements, not required by codes and standards
    b. Changes in facility size, capacity, dimension, or footprint
3. **Alternate Project:** Does not restore the pre-disaster function of the damaged facility(s)

Choose One (Restoration, Improved or Alternate) *If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendation.*
Restores to Codes/Standards

Note: *If preliminary Architectural and Engineering (A&E) work has not been completed, the type of work designation is considered initial and is based on currently available information. The type of work designation may be revised based on the results of the completed preliminary A&E work.*

3.3. Preliminary Architectural and Engineering (A&E)

Is architectural and engineering funding required to help define the intended scope of work?

No

The work is completed, so no additional A&E work is required.

Section 4. Codes and Standards

Which of the following types of codes, specifications, and standards apply to the restoration, replacement, relocation, or alternate scope of work?

4.1. Codes, Specifications, and Standards

Yes/No. If yes, describe how incorporated below.
• (ASCE MOP 74) Guidelines for Electrical Transmission Line Structural Loading, Third Edition - American Society of Civil Engineers (ASCE) • (ASCE/SEI 7-16) Minimum Design Loads and Associated Criteria for Buildings and Other Structure - American Society of Civil Engineers (ASCE) • Distribution – 50-4, 1724D-106, 1724E-150, 1724E-151, 1724E-152, 1724E-153, 1725E-154, 1728F-700, 1728F-803, 1728F-804, 1728F-806, 1730B-121, 1730-B2 - U.S. Department of Agriculture Rural Electric Service (RUS) • International Building Code (IBC) - International Code Council (ICC) • International Energy Conservation Code (IECC) - International Code Council (ICC) • International Existing Building Code (IEBC - International Code Council (ICC) • National Electric Safety Code (NESC) - Institute of Electrical and Electronics Engineers • National Electrical Code (NEC) - National Fire Protection Association (NFPA)

4.2. Industry Standards

Yes/No. If yes, describe how incorporated below.
• 2018 NFPA 101 Life Safety Code - National Fire Protection Association (NFPA) • ASCE.7 Section C 6.0 Wind Loads - American Society of Civil Engineers (ASCE) • International Building Code (IBC) - International Code Council (ICC) • Page 10 PREPA Standards and Specifications - Puerto Rico Electric Power Authority (PREPA) • Pattern Distribution Systems Manual - Puerto Rico Electric Power Authority (PREPA) • RUS - Applicable Bulletins for Electrical and Electronic Installations - US Department of Agriculture, Rural Utilities Service (RUS) • Underground Distribution Patterns Manual - Puerto Rico Electric Power Authority (PREPA)

Section 5. Incurred Costs

Control Room 5 & 6:

Cost Type	Amount ($M)
Design & Construction	$413,826.74
Total Project Estimated Cost	**$413,826.74**

Main Power Transformers 4, 5, & 6:

Cost Type	Amount ($M)
Design & Construction	$80,373.29
Total Project Estimated Cost	**$80,373.29**

Boilers 5 & 6:

Cost Type	Amount ($M)
Design & Construction	$708,866.33
Total Project Estimated Cost	**$708,866.33**

Condensate Water Tank 5:

Cost Type	Amount ($M)
Design & Construction	$345,468.00
Total Project Estimated Cost	**$345,468.00**

New Condensate Water Tank 6:

Cost Type	Amount ($M)
Design & Construction	$845,013.00
Total Project Estimated Cost	**$845,013.00**

Structural Repairs Units 1-4:

Cost Type	Amount ($M)
Design & Construction	$855,059.68
Total Project Estimated Cost	**$855,059.68**

Old Demi Plant:

Cost Type	Amount ($M)
Design & Construction	$212,912.05
Total Project Estimated Cost	**$212,912.05**

Section 6. 406 Hazard Mitigation Proposal

6.1. 406 Mitigation Opportunity Scope of Work

Hazard mitigation scope is not applicable to this completed work.

6.2. 406 Mitigation Opportunity Cost Estimate

There are no costs associated with hazard mitigation.

Note: *If available, detailed engineering cost estimates will be included as an attachment.*

Section 7. EHP Requirements

EHP considerations will be detailed in PREPA's EHP scoping document and EHP Checklist. Review will be performed under FEMA's project formulation review.

Section 8. Program Manager Lead Certification

Based on my knowledge and information available to date, I certify that the contents of this document accurately reflect the project scope of work and cost estimates.

Program Manager's Printed Name

Date

Title

Signature

Section 9. PREPA Project Sponsor Comments

Comments

<Insert any comments here>

PREPA Project Sponsor's Printed Name	Date
Title	Signature

Section 10. Attachments

10.1. Project Detailed Cost Estimates

<Insert project detailed cost estimates from A&E here (if available)>

10.2. Engineering Studies and Designs

<Insert engineering studies and designs (if available)>

10.3. Location Maps and Site Pictures

<Insert a map of sufficient scale identifying the project area and any additional location maps and site pictures (if available)>

10.4. Other: (Please Describe)

<Insert other documents attached to this submittal>