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

IN RE:	**CASE NO. NEPR-MI-2021-0002**
IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY'S 10-YEAR INFRASTRUCTURE PLAN-DECEMBER 2020	**SUBJECT: Motion Submitting Two FEMA Approvals of Projects, Request for Confidential Treatment, and Supporting Memorandum of Law**

MOTION SUBMITTING TWO FEMA APPROVALS OF PROJECTS, REQUEST FOR CONFIDENTIAL TREATMENT AND SUPPORTING MEMORANDUM OF LAW

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC[1], and **LUMA Energy ServCo, LLC**[2], (jointly referred to as "LUMA"), through the undersigned legal counsel and, respectfully submits the following:

I. Submittal of Two FEMA Approvals and Request for Confidentiality

1. On March 26, 2021, this Honorable Puerto Rico Energy Bureau ("Energy Bureau") issued a Resolution and Order in the instant proceeding, ordering, in pertinent part, that the Puerto Rico Electric Power Authority ("PREPA") submit to the Energy Bureau the specific transmission and distribution projects ("T&D Projects" or "Projects") to be funded with Federal Emergency Management Agency ("FEMA") funds or any other federal funds at least thirty (30) calendar days prior to submitting these Projects to the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency ("COR3"), FEMA or any other federal agency ("March 26th Order"). It also directed PREPA to continue reporting to the Energy Bureau and FEMA, within the next five years,

[1] Register No. 439372.
[2] Register No. 439373.

the progress of all ongoing efforts related to the approval of the submitted Projects not yet approved by the Energy Bureau. This Energy Bureau thereafter determined that this directive applied to PREPA and LUMA. *See* Resolution and Order of August 20, 2021.

2. On April 14, 2021, PREPA filed a *Motion in Compliance with the Resolution and Order Entered on March 26, 2021*, which included a list of projects under the categories of transmission, distribution, and substations. PREPA submitted the list of projects to the Energy Bureau at least thirty (30) calendar days before their submittal to COR3 and/or FEMA, aligning with the March 26th Order. The list of projects submitted by PREPA included "FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)."

3. Then, on April 22, 2021, the Energy Bureau issued a Resolution and Order ("April 22nd Order"). It determined that additional information was required to thoroughly evaluate the projects submitted by PREPA and evaluate its compliance with the March 26th Order. The Energy Bureau ordered PREPA to provide detailed information: (i) on or before April 28, 2021, for each project already submitted to COR3 and/or FEMA; and (ii) on or before May 21, 2021, for each project in that will be submitted to COR3 and/or FEMA under the different project categories. It also ordered PREPA to include a list of all the substations to be relocated to mitigate possible future flooding damages.

4. In compliance with the April 22nd Order, on April 28, 2021, PREPA filed a *Motion in Compliance with the Resolution and Order entered on April 22, 2021*. PREPA submitted the Scopes of Work ("SOW") provided to COR3 and FEMA in compliance with the April 22nd Order. Among the SOWs submitted to this Energy Bureau was the "FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)" T&D Project.

5. On June 8, 2021, the Energy Bureau entered a Resolution and Order in which it determined that the majority of the SOWs for T&D projects submitted by PREPA were necessary to improve the system's reliability ("June 8th Order"). Therefore, it approved the majority of the projects presented in the April 28th Submission, including the "FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)" T&D Project SOW. Further, the Energy Bureau ordered PREPA to submit a copy of the approval by COR3 and/or FEMA of the projects, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

6. Thereafter, on August 30, 2021, LUMA filed a *Motion Requesting Clarification of a Portion of the Energy Bureau's Resolution and Order Entered on August 20, 2021, and Submitting Updated List of Transmission and Distribution Projects and Twenty-Nine Scope of Work* ("August 30th Motion"). In the August 30th Motion, LUMA submitted twenty-nine (29) Scopes of Work ("SOWs") for T&D Projects for the Energy Bureau's review and approval prior to submitting them to COR3 and FEMA. The SOWs submitted by LUMA included the "FAASt-Substation Minor Repairs Group C (Substation)" T&D Project.[3]

7. On September 22, 2021, the Energy Bureau issued a Resolution and Order that determined that most of the SOWs for T&D projects submitted by LUMA were necessary to improve the system's reliability ("September 22nd Order"). Therefore, it approved most of the projects presented in the August 30th Motion, including the "FAASt- Substation Minor Repairs Group C (Substation)" T&D Project SOW. The Energy Bureau also ordered LUMA to submit a

[3] The "FAASt- Substation Minor Repairs Group C (Substation)" T&D Project was submitted initially to the Energy Bureau as the "Substations Minor Repairs," which encompassed substation repair projects throughout Puerto Rico but were later divided into individual projects per region.

copy of the approval by COR3 and/or FEMA of the Project, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

8. In compliance with the June 8th and September 22nd Orders, LUMA hereby submits copies of two (2) approvals by FEMA of the Projects issued on August 22, 2023.[4] *See* **Exhibit 1** to this Motion. The document contains FEMA's approvals and includes the cost obligated for each Project.

9. LUMA is submitting herein a redacted public version of the FEMA approvals (**Exhibit 1**) protecting confidential information associated with Critical Energy Infrastructure Information ("CEII"). The FEMA approvals of the "FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)" and "FAASt- Substation Minor Repairs Group C (Substation)" T&D Projects are protected from disclosure as CEII, *see, e.g.*, 6 U.S.C. §§ 671-674; 18 C.F.R. §388.113 (2020), and pursuant to the Energy Bureau's Policy on Management of Confidential Information. *See* Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, as amended by Resolution dated September 20, 2016.

II. Memorandum of Law in Support of Request for Confidentiality

A. Applicable Laws and Regulations to Submit Information Confidentially Before the Energy Bureau

10. The bedrock provision on the management of confidential information filed before this Energy Bureau, is Section 6.15 of Act 57-2014, known as the "Puerto Rico Energy Transformation and Relief Act." It provides, in pertinent part, that: "[i]f any person who is required

[4] It is important to note that LUMA acquires knowledge of any FEMA approval for a T&D Project once FEMA makes the information available via its grant portal.

to submit information to the [Energy Bureau] believes that the information to be submitted has any confidentiality privilege, such person may request the [Energy Bureau] to treat such information as such […]" 22 LPRA §1054n. If the Energy Bureau determines, after appropriate evaluation, that the 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.* §1054n(a).

11. Access to confidential information shall be provided "only to the lawyers and external consultants involved in the administrative process after the execution of a confidentiality agreement." *Id.* §1054n(b). Finally, Act 57-2014 provides that this Energy Bureau "shall keep the documents submitted for its consideration out of public reach only in exceptional cases. In these cases, 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. However, the [Energy Bureau] shall direct that a non-confidential copy be furnished for public review." *Id.* §1054n(c).

12. Relatedly, in connection with the duties of electric power service companies, Section 1.10 (i) of Act 17-2019 provides that electric power service companies shall provide the information requested by customers, except for confidential information in accordance with the Rules of Evidence of Puerto Rico.

13. Moreover, the Energy Bureau's Policy on Management of Confidential Information details the procedures a party should follow to request that a document or portion thereof be afforded confidential treatment. In essence, the referenced Policy requires identifying confidential information and filing a memorandum of law explaining the legal basis and support for a request

to file information confidentially. *See* CEPR-MI-2016-0009, Section A, as amended by the Resolution of September 20, 2016, CEPR-MI-2016-0009. The memorandum should also include a table that identifies the confidential information, a summary of the legal basis for the confidential designation, and why each claim or designation conforms to the applicable legal basis of confidentiality. *Id.* at ⁋ 3. The party who seeks confidential treatment of information filed with the Energy Bureau must also file both a "redacted" or "public version" and an "unredacted" or "confidential" version of the document that contains confidential information. *Id.* at ⁋ 6.

14. The Energy Bureau's Policy on Management of Confidential Information states the following with regard to access to validated Trade Secret Information and CEII:

> 1. Trade Secret Information
> Any document designated by the [Energy Bureau] as Validated Confidential Information because it is a trade secret under Act 80-2011 may only be accessed by the Producing Party and the [Energy Bureau], unless otherwise set forth by the [Energy Bureau] or any competent court.
>
> 2. Critical Energy Infrastructure Information ("CEII")
> The information designated by the [Energy Bureau] as Validated Confidential Information on the grounds of being CEII may be accessed by the parties' authorized representatives only after they have executed and delivered the Nondisclosure Agreement.
>
> Those authorized representatives who have signed the Non-Disclosure Agreement may only review the documents validated as CEII at the [Energy Bureau] or the Producing Party's offices. During the review, the authorized representatives may not copy or disseminate the reviewed information and may bring no recording device to the viewing room.

Id. at § D (on Access to Validated Confidential Information).

15. Regulation No. 8543, *Regulation on Adjudicative, Notice of Noncompliance, Rate Review, and Investigation Proceedings*, also includes a provision for filing confidential

information in proceedings before this Energy Bureau. To wit, Section 1.15 provides that "a person has the duty to disclose information to the [Energy Bureau] 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 [that] the material merits protection, proceed according to […] Article 6.15 of Act No. 57-2015, as amended." *See also* Energy Bureau Regulation No. 9137 on *Performance Incentive Mechanisms*, § 1.13 (addressing disclosure before the Energy Bureau of Confidential Information and directing compliance with Resolution CEPR-MI-2016-0009).

B. Request for Confidentiality

16. The FEMA approvals with CEII included in **Exhibit 1** contain portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the FEMA approvals with CEII warrant confidential treatment to protect critical infrastructure from threats that could undermine the system and negatively affect electric power services to the detriment of the interests of the public, customers, and citizens of Puerto Rico. In several proceedings, this Energy Bureau has considered and granted requests by PREPA to submit CEII under seal of confidentiality.[5] In at least two Data Security and Physical Security

[5] *See e.g., In re Review of LUMA's System Operation Principles,* NEPR-MI-2021-0001 (Resolution and Order of May 3, 2021); *In re Review of the Puerto Rico Power Authority's System Remediation Plan*, NEPR-MI-2020-0019 (order of April 23, 2021); *In re Review of LUMA's Initial Budgets*, NEPR-MI-2021-0004 (order of April 21, 2021); *In re Implementation of Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan,* NEPR MI 2020-0012 (Resolution of January 7, 2021, granting partial confidential designation of information submitted by PREPA as CEII); *In re Optimization Proceeding of Minigrid Transmission and Distribution Investments*, NEPR-MI 2020-0016 (where PREPA filed documents under seal of confidentiality invoking, among others, that a filing included confidential information and CEII); *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, CEPR-AP-2018-0001 (Resolution and Order of July 3, 2019 granting confidential designated and request made

proceedings,[6] this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

17. Additionally, this Energy Bureau has granted requests by LUMA to protect CEII in connection with LUMA's System Operation Principles. *See* Resolution and Order of May 3, 2021, table 2 on page 4, Case No. NEPR-MI-2021-0001 (granting protection to CEII included in LUMA's Responses to Requests for Information). Similarly, in the proceedings on LUMA's proposed Initial Budgets and System Remediation Plan, this Energy Bureau granted confidential designation to several portions of LUMA's Initial Budgets and Responses to Requests for Information. *See* Resolution and Order of April 22, 2021, on Initial Budgets, Table 2 on pages 3-4, and Resolution and Order of April 22, 2021, on Responses to Requests for Information, table 2 on pages 8-10, Case No. NEPR-MI-2021-0004; Resolution and Order of April 23, 2021, on Confidential Designation of Portions of LUMA's System Remediation Plan, table 2 on page 5, and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

18. Similarly, the Energy Bureau has granted LUMA's requests for confidential treatment of portions of SOWs submitted for approval in the present case. Notably, the Energy Bureau designated portions of SOWs as confidential CEII in its Resolution and Order of February 22, 2023, *see* Table 1 on page 3, Resolution and Order of April 5, 2023, *see* Table 1 on page 4,

by PREPA that included trade secrets and CEII. However, *see* Resolution and Order of February 12, 2021, reversing in part, grant of confidential designation).

[6] *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan,* NEPR-MI-2020-0018.

and Resolution and Order of May 5, 2023, *see* table 1 at page 3. Likewise, the Energy Bureau has granted LUMA's request for confidential treatment of portions of FEMA Approvals of Projects submitted for consideration and authorization. Recently, the Energy Bureau designated portions of submitted FEMA Approvals of Projects as confidential CEII in its Resolution and Order of March 20, 2023; *see* Table 1 on pages 1-2.

19. As mentioned above, the Energy Bureau's Policy on Management of Confidential Information provides for the management of CEII. It directs that the parties' authorized representatives access information validated as CEII only after executing and delivering a Non-Disclosure Agreement.

20. CEII or critical infrastructure information is generally exempted from public disclosure because it involves assets and information that pose public security, economic, health, and safety risks. Federal Regulations on CEII, particularly, 18 C.F.R. § 388.113, state that:

> Critical energy infrastructure information means specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that:
> (i) Relates details about the production, generation, transportation, transmission, or distribution of energy;
> (ii) Could be useful to a person in planning an attack on critical infrastructure;
> (iii) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. 552; and
> (iv) Does not simply give the general location of the critical infrastructure.

Id.

21. Additionally, "[c]ritical electric infrastructure means a system or asset of the bulk-power system, whether physical or virtual, the incapacity or destruction of which would negatively affect national security, economic security, public health or safety, or any combination of such matters. *Id.* Finally, "[c]ritical infrastructure means existing and proposed systems and assets,

whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters." *Id.*

22. The Critical Infrastructure Information Act of 2002, 6 U.S.C. §§ 671-674 (2020), part of the Homeland Security Act of 2002, protects critical infrastructure information ("CII").[7] CII is defined as "information not customarily in the public domain and related to the security of critical infrastructure or protected systems [...]" 6 U.S.C. § 671 (3).[8]

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[7] Regarding protection of voluntary disclosures of critical infrastructure information, 6 U.S.C. § 673, provides in pertinent part, that CII:

> (A) shall be exempt from disclosure under the Freedom of Information Act;
> (B) shall not be subject to any agency rules or judicial doctrine regarding ex parte communications with a decision-making official;
> (C) shall not, without the written consent of the person or entity submitting such information, be used directly by such agency, any other Federal, State, or local authority, or any third party, in any civil action arising under Federal or State law if such information is submitted in good faith;
> (D) shall not, without the written consent of the person or entity submitting such information, be used or disclosed by any officer or employee of the United States for purposes other than the purposes of this part, except—
> (i) in furtherance of an investigation or the prosecution of a criminal act; or
> (ii) when disclosure of the information would be--
> (I) to either House of Congress, or to the extent of matter within its jurisdiction, any committee or subcommittee thereof, any joint committee thereof or subcommittee of any such joint committee; or
> (II) to the Comptroller General, or any authorized representative of the Comptroller General, in the course of the performance of the duties of the Government Accountability Office
> (E) shall not, be provided to a State or local government or government agency; of information or records;
> (i) be made available pursuant to any State or local law requiring disclosure of information or records;
> (ii) otherwise be disclosed or distributed to any party by said State or local government or government agency without the written consent of the person or entity submitting such information; or
> (iii) be used other than for the purpose of protecting critical Infrastructure or protected systems, or in furtherance of an investigation or the prosecution of a criminal act.
> (F) does not constitute a waiver of any applicable privilege or protection provided under law, such as trade secret protection.

[8] CII includes the following types of information:

> (A) actual, potential, or threatened interference with, attack on, compromise of, or incapacitation of critical infrastructure or protected systems by either physical or computer-based attack or other

23. The FEMA approvals with CEII in **Exhibit 1** qualify as CEII because each of these documents contains the express coordinates to power transmission and distribution facilities (18 C.F.R. § 388.113(iv)), and these specific locations and coordinates could potentially be helpful to a person planning an attack on the energy facilities listed as part of this FEMA approval. The information identified as confidential in this paragraph is not common knowledge and is not made publicly available. Therefore, it is respectfully submitted that, on balance, the public interest in protecting CEII weighs in favor of protecting the relevant portions of the FEMA approvals with CEII in **Exhibit 1** from disclosure, given the nature and scope of the details included in those portions of the Exhibit.

24. Based on the above, LUMA respectfully submits that the FEMA approvals with CEII should be designated as CEII. This designation is a reasonable and necessary measure to protect the specific location of the energy facilities listed or discussed in the FEMA approvals in **Exhibit 1**. Given the importance of ensuring the safe and efficient operation of the generation assets and the T&D System, LUMA respectfully submits that these materials constitute CEII that should be maintained confidentially to safeguard their integrity and protect them from external threats.

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similar conduct (including the misuse of or unauthorized access to all types of communications and data transmission systems) that violates Federal, State, or local law, harms interstate commerce of the United States, or threatens public health or safety;
(B) the ability of any critical infrastructure or protected system to resist such interference, compromise, or incapacitation, including any planned or past assessment, projection, or estimate of the vulnerability of critical infrastructure or a protected system, including security testing, risk evaluation thereto, risk management planning, or risk audit; or
(C) any planned or past operational problem or solution regarding critical infrastructure or protected systems, including repair, recovery, construction, insurance, or continuity, to the extent it is related to such interference, compromise, or incapacitation.

C. Identification of Confidential Information

25. In compliance with the Energy Bureau's Policy on Management of Confidential Information (CEPR-MI-2016-0009) below, find a table summarizing the portions of the FEMA approvals for which we present this request for confidential treatment.

Document	**Name**	**Pages in which Confidential Information is Found, if applicable**	**Summary of Legal Basis for Confidentiality Protection, if applicable**	**Date Filed**
Exhibit 1	FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)	Pages 1, 2, 5, and 14.	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	August 25, 2023
Exhibit 1	FAASt- Substation Minor Repairs Group C (Substation)	Pages 1, 2, 3, 7, 9, 12, 14, 17, 20, 22, 29, 30, and 31.	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	August 25, 2023

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **accept** the copies of the two (2) FEMA approvals attached herein as **Exhibit 1**; and **grant** the request for confidential treatment of **Exhibit 1**.

RESPECTFULLY SUBMITTED.

We hereby certify that we filed this motion using the electronic filing system of this Energy Bureau. We will send an electronic copy of this motion to the attorney for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law.

In San Juan, Puerto Rico, on this 28th day of August 2023.

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Exhibit 1

Two (2) FEMA Approvals

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Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	169495 **P/W #** 11479	**Project Type**	Specialized
Project Category	F - Utilities	**Applicant**	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)	**Event**	4339DR-PR (4339DR)
Project Size	Large	**Declaration Date**	9/20/2017
Activity Completion Date	9/20/2027	**Incident Start Date**	9/17/2017
Process Step	Obligated	**Incident End Date**	11/15/2017

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between *09/17/2017* and *11/15/2017*, caused:

Damage #433800; FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement
- **Facility Description:** Tapia 38/4.16.2 kV substation is currently located in a floodplain and it will be rebuilt on-site. This facility includes a power transformer, metal-clad switchgear, control house, circuit breakers, structures, cables, conduits and other related components.
- **Approx. Year Built:** 1980
- **GPS Latitude/Longitude:** [redacted]

General Damage Information:

- **Date Damaged:** 9/20/2017
- **Cause of Damage:** High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

433800 **FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement**

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and

FEMA for the Tapia GIS Rebuilt 1102 project under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facility for the Tapia 1102 Substation.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix A which collectively provides the necessary consent for LUMA Energy, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

The Tapia 1102 Substation experienced substantial damages and flooding due to Hurricane Maria in September 2017. The purpose of this project is to rebuild, mitigate flooding issues, harden the substation to improve the reliability and resiliency, and mitigate safety hazards and environmental concerns of the Puerto Rico electrical grid.

Physical Address	[redacted]
Coordinates	[redacted]
Date of Construction	1957

Proposed 428 Public Assistance Scope of Work:

Substation

- Remove and dispose of the existing concrete control building including the relays and control panels, Remote Terminal Units, battery bank, battery charger, AC/DC distribution panels and control panels/cables and associated conduits and wiring.
- Removal and disposal of the existing metal clad electrical equipment, steel structure, concrete dead end structure and poles, the existing metal clad switchgear, the existing transformer and oil circuit breakers, fence work, foundations, and all other associated equipment.
- Remove and dispose of the existing perimeter fence and gates to install approximately 400 ft of perimeter fence embedded on the new retaining wall and install new gate.
  - Fence posts will be installed to a maximum depth of 36” below final grade. Typical excavation will be 1’-0” in diameter and a maximum of 42” in depth.
  - Fence foundations will be built around the perimeter to a maximum depth of 36” below final grade. Typical excavation will be 4’-0” center to center and a maximum of 42” in depth.
- Replace existing 7.5/11.3 MVA, 38/4.16 kV transformer and foundation with a new 14 MVA, 38/13.2-4.16 kV transformer and new foundation with oil containment provisions including a sump pump, and interconnect with other components.
- Build new concrete pads for mobile substation connection structure, service station transformer, and remote metering.
- Remove existing 13.2 remote metering transformer and install a new 13.2 kV remote metering transformer. Install new 13.2 kV underground cable from new remote metering transformer to the control enclosure.
- Remove existing 15 kV service station transformer and install a new 15 kV service station transformer. Install new 15 kV underground cable from new station service transformer to the control enclosure.
- Remove existing structure for mobile substation termination and install new structure including the 15 kV pothead for mobile substation termination. Install new 15 kV underground cable from new mobile substation structure to the control enclosure.
- Interconnect via underground cables the distribution feeders from the control enclosure to existing pole risers located outside the substation.
- Install insulating gravel including specified geosynthetic materials (geotextile)

Structure Age

- Tapia 1102 substation was constructed in 1957. Along the time major apparatus were installed within existing substation footprint:
  - The 38/4.16kV transformer was installed in May 1971.
  - The 38kV breaker was installed in 1964.

Staging Area:

- The main staging area will be located inside the premises of the substation and will serve as an assembly point for all the materials to be installed.
- If an additional temporary staging area is required, an area outside the substation will be identified and shall comply with all EHP requirements for this purpose. This area will be prepared to act as staging area, may require topsoil removal and stockpiling during construction and shall be restored to its original condition after construction.

Ground disturbance:

- Cable trenching and ground grid will occur within the substation up to 10 ft deep. The ground grid and cable and trenching will be a maximum of 42 inches below underground within the substation.

Soil Stabilization measures:

- The project is considering stone columns as the geotechnical study report established that a subsoil stabilization is required for the rebuild work. Appropriate mitigation will be installed around areas where potential erosion may occur per a site-specific Mitigation plan.

Material Disposal

- The type of debris that may be found in the process of demolition are batteries, transformers, concrete, metal scrap, domestic and construction waste. The debris will be separated and disposed of on an approved waste disposal facility.

Hazardous Material:

- The possible hazardous materials that can be found in the substation are asbestos, lead, polychlorinated biphenyl (PCB), sulfur hexafluoride (SF6) gas, oil from the breakers and transformer, chemicals used for construction fuel and other chemical wastes typical of a construction site. These hazardous materials will be handled and disposed of per LUMA Waste Management Plan.
- Material amounts will be provided by a certified management contractor performing a site evaluation and calculation for asbestos, lead paint, and roof material.

Equipment to be used.

- Skid Steer, Excavator, Dump trucks, Manlifts, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine, Flatbed platform, portable generators, and gas small tools.

- All equipment used will comply with Tier 4 EPA Emission Standards, if available

Fill, gravel, sand, etc.

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in Appendix O Preferred Vendors list.

Specific List of Permits Required

- Environmental Compliance Determination and Construction Permit in Oficina de Gerencia de Permisos (OGPe) - OGPe Administrative Order 2021-07 (AO 2021-07)

- San Juan Municipality Notifications

- Excavation and Demolition Notification in Department of Transportation and Public Works Agency - (DTOP)

- Asbestos Permit – Environmental Quality Board (EQB) now Department of Natural Resources Agency (DNR), if asbestos is identified

- Lead Permit - Environmental Quality Board (EQB) now Department of Natural Resources Agency (DNR), if lead is identified
- Hazardous Waste Disposal Permit

- Plan CES Permit

- This substation is in a flood zone, whereby will require an evaluation of the applicability of Regulation 13 of the Planning Board (JP)

Transmission Lines

- Install a new manhole to intercept the 38 kV underground line coming from Villamar Substation and extend the line underground to the new Control Enclosure with a new 46 kV cable.
- Install a new 55' steel dead-end structure to terminate the incoming 38 kV line from Martin Peña span and drop down to underground pot heads and connect through underground cable to the control enclosure.

- Install 2EA new 55ft utility concrete pole with their foundation (concrete base).

IT/Telecom System & SCADA (As identified in LPCE)

- Install SCADA system and associated equipment inside the new Control Enclosure
- Install Telecom Tower and associated equipment and accessories.

Proposed 406 Hazard Mitigation Grant Program Scope of Work: (please refer to 406 Mitigation Profile)

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary Architectural and Engineering design information and may be subject to change. LUMA has identified risks and allowances for the mitigation of potential known risks.

COST ESTIMATE	
Tapia	**428**
PLANNING **(FAASt 335168)**	$841,515.80
MANAGEMENT **(FAASt 335168)**	$556,343.72
SUBSTATION-TELECOM-TRANSMISSION	$6,530,716.44
GENERAL CONDITIONS	$565,372.23
CONTINGENCY	$1,083,960.36
TOTAL PROJECT COST ESTIMATE	$9,577,908.55
FAASt PROJECT # 169495 Total	$8,180,049.03
FAASt A&E # 335168 Total	$1,397,859.52

Work To Be completed (WBTC): $ 9,577,908.55

A&E Deduction (Global A&E FAASt 335168): - $1,397,859.52

Project Total Cost: $ 8,180,049.03

Project Notes:

1. Refer to detailed SOW provided in document "169495-DR4339PR- 00 Detailed SOW Tapia Substation - (10059-CP-SOW-0002Rev6)(rev 2023-06-14) - signed.pdf"
2. Refer to detailed cost estimate provided in document 169495-DR4339PR- 14 Appendix N - Tapia Substation LUMA LPCE (Rev. 06.14.2023)
3. For reference documents:

APPENDIX A- Consent to Federal Funding Letter- FEMA/COR3

APPENDIX B- SOW Overview

APPENDIX C- Foundation Plans

APPENDIX D- Engineering Designs (SLD), Proposed Layout, Grading, Drainage Plan and Trenching

APPENDIX E- Substation Picture

APPENDIX F- Boring Test Plan

APPENDIX G- Existing Site Plan

APPENDIX H- Waste Management Plan
APPENDIX I- LUMA Wildlife Avian and Historical Protection Procedure #0335

APPENDIX J- Environmental Review

APPENDIX K- Tapia Substation Environmental Mitigation Measures

APPENDIX L- Tapia Substation Environmental Maps

APPENDIX M- Tapia BCA Narrative

APPENDIX N- LPCE Tapia Estimate Breakdown

APPENDIX O- Approved Supplies List

APPENDIX P- SCADA/Telecom References

4. This project is part of a FAAST project, please reference project 136271.

5. Architectural and Engineering (A&E) costs are deducted given previously obligated Global A&E Project for the subject FAASt PREPA work (see project: 335168 - FAASt A&E PREPA).

406 HMP Scope

Project number: 169495

Damage #433800; FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement

Applicant: PR Electric Power Authority (000-UA2QU-00)

Location: San Juan, Puerto Rico

GPS Latitude/Longitude: Start: [redacted]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage from Hurricane Maria. The incident caused damage to the electrical system, such as power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

The Tapia GIS Rebuilt 1102 Substation was built approximately in 1957 and is located in the Municipality of San Juan Puerto Rico. The facility is a 38/4.16 KV substation with a 7.5/11.3 MVA transformer feeding a metal clad switchgear suppling five 4.16 KV distribution circuits. This substation is supported by four air brake switches, one oil switch, control building, electro-mechanical protection relays, SCADA, battery bank, battery charger, remote terminal unit, communications, two remote switch operators, and remote transformer with protection & control panels. According to the information provided by the sub-applicant, due to the high velocity hurricane winds and prolonged heavy rain (flooding), were the main cause of the damages of the facility.

Project Overview:

As described in the PREPA Island Wide FAASt (FEMA Accelerated Award Strategy) project (PN136271), FEMA selected a sample population of 81 substations. The Tapia GIS 1102 Substation was included in the sampling as one of the assets where the cost estimate for PREPA's 392 substations is based on actual damages. The costs of the other 311 substations were extrapolated from the sampled population. The sample set was selected as a representative subset of the entire substation population by accounting for the geospatial distribution, substation transformer capacity, and function.

The Tapia GIS 1102 Substation experienced substantial damages due to Hurricane Maria in September 2017, therefore, the purpose of this project is to repair damages and harden the substation to improve the reliability and resiliency of the Puerto Rico electrical grid.

The strategy for mitigating future loss of service damages to Tapia GIS Rebuilt 1102 Substation is accomplished by elevating and rebuild the existing substation facility above the floodplain and on the existing site. The existing AIS (air insulated substation installed in an exterior metal-clad) equipment is currently exposed to damages from high winds, windblown debris, wind driven rain and flooding. The proposed holistic mitigation system approach includes elevating all critical interdependent equipment to the 500-year flood for critical infrastructure including the integration of a Substation Automation System using IEC 61850 technology, enhanced SCADA technology and consolidating all substation equipment into an enclosed elevated building as a more cost-effective solution.

The functional purpose of a substation is to interconnect the transmission and distribution lines using transformers to step-down the voltage and related components necessary to transmit electricity from a high voltage level to a low voltage level. Along the substation, inclusive of design considerations from natural hazard requirements such as wind speed, flying debris, flooding, among others. The substations thus are functionally interdependent due to the necessity of providing power (critical service), if one component within a substation fails, the function of the substation will fail, meaning that the customers (Industrials, Commercials, and Residential) will not receive electric service.

It is good practice to implement mitigation measures which fully address the hazard that caused the damage to the facility. Mitigation measures for a damaged facility don't have to be limited to addressing only the specific components of the facility that were damaged when the failure of an undamaged interdependent component can lead to a cascading failure of the electrical transmission and distribution network.

Floodplain Evaluation:

Before Hurricane Maria, according to the Flood Insurance Rate Map (FIRM), the Tapia GIS 1102 Substation was located in a Zone AE, which has a 1% annual probability of flood risk. After Hurricane Maria, the Government of PR adopted the Advisory Base Flood Elevation Maps (ABFE) to determine if a facility is within a Special Flood Hazard Area (SFHA). The Policy states that the most restrictive map (FIRM or ABFE) must be used to determine the flood zone for any particular site, which in this case are both, since the ABFE map also labeled it Zone AE. A request to determine the base flood elevation (BFE) was submitted to FEMA Floodplain Management Specialist, which determined that the (BFE) + 2 ft is 2.1 meters as well as the 500-year flood elevation is 2.1 meters above the existing floor elevation (EFE). According to the PA Site Inspection Report, several components were damaged by flooding, such as metering cabinet, switchgear breaker, control building (protective relays panels, SCADA and communication equipment, batteries, among others). Although, since the other substation components were not damaged by flooding, the Applicant requested FEMA to evaluate the substation as a system. As indicated before, a System Approach analysis was granted, which means that whole critical components (damaged and undamaged elements) will be elevated 2 feet above BFE to avoid any future damage and loss of function.

Mitigation Approach:

The mitigation strategy for future similar damages at Tapia GIS 1102 Substation is accomplished by elevating all critical interdependent equipment 2.1 meters above the existing floor elevation (EFE), replacing the existing AIS system with a GIS system (gas insulated substation installed in an enclosed integrated control building), installing a redundant SCADA and Telecommunication Systems, hardening the perimeter fence, strengthening the utility pole and foundation, and the installation of a backup power generator to mitigate the potential damage of the substation batteries in a discharged state for extended period. Using the standard 428 method of repair (MOR) with additional mitigation funding directly addresses the substations extrapolated system-wide damages and impacts. These mitigation measures will reduce future similar damage such as hurricane high winds, heavy rain, wind blown debris, flooding, outages, as well as decrease the future likelihood of loss of function of the system. The improved project Scope of Work (SOW) incorporates the installation of a new control enclosure which contains 42 kV switchgear with three (3) breaker cubicles, 15 kV switchgear with eight (8) breaker cubicles and a provisional cubicle for the protection relays for the feeders, telecommunication equipment, batteries, Substation Automation System using IEC 61850 technology, enhanced SCADA technology and all associated equipment.

In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, the consolidation of all substation equipment into an enclosed elevated integrated control building, the integration of a redundant SCADA and Telecommunication Systems, reduce the spacing of the chain-link fence post from 10ft to 8ft, strength utility pole and foundation, and the backup power generator to provide continuous power to the critical loads. The above mitigation measures will protect and make the affected elements more resistant to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures *(Supplement)*

- **Substation Automation / Supervisory Control and Data Acquisition (SCADA) System:**

  The activities associated with the Hazard Mitigation initiative are intended to provide the means for a second (separate from the SCADA links) communication path that allows a faster and more reliable grid restoration after a major weather event to minimize loss of power service to the island population. The mitigation measure will harden the Power Grid protective systems consisting of the RTU's, protective relays, Distribution Automation System, CCTV system and EMS and thus directly reduce similar and future damages experienced at the sites and on the system due to loss of function and inability to clear faults resulting from flooding, high winds and wind-blown debris impacting Substation, Distribution and Transmission assets. Implementation of remote access connectivity to the Protective and Control (P&C) devices allows for the validation of existing relay settings and downloading emergency configurations and get access to failure records/events for real-time analysis. The remote access platform provides an integrated, comprehensive solution with a seamless configuration environment, ensuring relay connectivity and condition/configuration monitoring.

  IEC-61850 is implemented through a redundant TCP/IP network (PRP) with high data throughput (100 Megabits per second), providing services such as SCADA, Protection and Control (P&C), and remote access. This hardened and redundant TCP/IP network facilitates a high and fast volume of critical information/data to be transferred to the Control Center in seconds which is vital for making operational decisions during emergencies to preserve system control and prevent loss of function thus directly preventing similar and future damages to equipment, components, and systems.

  Under a traditional SCADA or RTU scheme, where the communication among the Intelligent Electronic Devices (IEDs) is implemented through serial links or hardwired contacts, the amount of data is limited because of the bandwidth (19200 Kilobits per second) system limitations. Additionally, the IEC-61850 standard is Cybersecurity (CIP standards) compliance providing the proper electronic protection to the critical substation infrastructure.

  This added functionality to the traditional SCADA system architecture will provide visibility to what is happening at the substation even when there is no

ability to access the site during a major disaster. Immediate actions can be taken based on observed and/or anticipated conditions to control or configure power system assets to prevent loss of function and damages at the facility and system levels.

This system provides for three areas of functionality: SCADA, Protection and Control and Remote Access. As the systems are functionally interdependent and a complete change in technology from the traditional automation scheme, 25% of the substation automation/SCADA costs are considered 406 for substation rebuild projects.

- **Telecommunication System:**

To mitigate the potential damage of losing the communication system for the substation equipment, the sub-applicant proposes the following mitigation measure for redundancy in communications at this facility.

The MOR utilizing 428 funds covers the direct repair and replacement of the damaged components and systems associated with telecom at this site. The 406-mitigation proposal is for redundant telecommunications components in parallel with the existing system to directly address and reduce the potential loss of function and critical services due to damages to the stand-alone telecommunications system. Damages and loss of function to the telecom system directly contributed to the lack of control and visibility to the facility, its equipment and function and thus also contributed to further damages to the power system due to lack of control and response to outages and faults on the system and with neighboring and functionally dependent substations.

Installing redundant telecom systems such as Microwave Communications and enhanced SCADA systems will directly reduce the loss of function, and subsequent damages and loss of function of other interconnected and damaged assets which will also result in a reduced need for emergency protective measures and temporary facilities following an event.

The communication towers will be designed to withstand higher wind speeds and provide greater resiliency to the threat from hurricanes and severe storms and a part of a holistic 406 hazard mitigation strategy.

The loss of communication could cause the substation to suspend service to the customers, water treatment plants, and sewer pumping station, etc., and the IEC 61850 for the Protection and Control System could also be interrupted.

The proposed activities associated with the Hazard Mitigation initiative for Telecommunications assets are intended to provide enhanced protective capabilities and resiliency of the new substation Local Area Network. This allows for a more reliable grid restoration after a major weather event to prevent similar and future damages and minimize loss of power service to the facility, power grid and island population. These mitigation measures will allow the sub-applicant to install enhanced Substation Automation and redundant communication paths to the substation via Fiber and Microwave links in a cyber-secure environment for added redundancy and overall system resiliency. These links will facilitate the implementation of remote access connectivity to the Protective and Control (P&C) devices which when added to the functionality of the traditional SCADA system architecture will provide greater visibility, command, and control into the substations in the event of future, similar disasters. The hardened infrastructure such as towers to facilitate the microwave link will add overall resiliency and redundancy to the overall network by withstanding impacts from flooding, high wind speeds and debris.

Backup power systems (UPS 48VDC battery bank), tele-protection equipment, networking firewalls and switches are considered at a 100% cost estimate as related to a holistic system 406 proposal based on the premise that these technologies currently do not exist and yet will directly mitigate future, similar damages and losses of function at the facility and system level for both damaged and repaired assets and components and well as non-damaged equipment and infrastructure systems subjected to the same damages and failures. The relation to damages and damage prevention is at the facility and system levels as a mitigation measure to protect other critical assets from damages.

The telecommunication tower cost split is based on the existing 50ft(H) concrete pole structure replacement cost compared to the cost of the new proposed 150ft(H) tower design.

- **Chain-link Fence:**

On the damaged chain link fence [8ft(H) plus barbed wire, 6 ga. 2" mesh, sch-40 1-5/8" top rail, 2.5" line post and 3" end post installed in a concrete footing (LUMA/PREPA Standard for Fencing)], instead of 10ft spacing between post, provide and install (10ea) new 2.5" x 11ft(H) sch-40 line post with barbed wire extension arm to reduce the spacing from 10ft to 8ft to increase the resistance against wind-borne debris, and high hurricane winds impacts and/or effects, 110LF. Note: According to previous discussion with the sub-applicant, the additional 1ft concrete wall above ground level is not applicable as it is included in 428 fence (codes & standards) and the new retaining wall.

Note: In order to comply with LUMA/PREPA codes and standards, each alternate pole is required to be grounded to the existing substation grounding grid.

- Exothermic weld, 4/0 wire to 1" ground rod = 5 EA.
- Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = 5 EA.
- Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = 10 EA.
- Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = 15 EA.
- Ground wire, copper wire, bare stranded, #4 = 15 LF.
- Ground wire, copper wire, bare stranded, 4/0 = 100 LF

- **Retaining Wall:**

  A new retaining wall will be installed around the perimeter of the substation to support the elevation [354ft(L) x 4.5ft(H) x 8in(W)]. Also, as result of the substation elevation, it will be required a subsoil stabilization to provide a suitable surface to install the new borrow fill. These mitigation measures will help in the stabilization of the backfill and in future erosion control situations.

- **Backup Generator:**

  To avoid damage to the battery bank by the discharge drainage effect, the sub-applicant is proposing as a mitigation measure, the installation of a (1ea) new Standby Emergency Power Generator [48KW, 120/240V, aluminum enclosure, with an Automatic Transfer Switch (ATS)] that will provide continuous power to the circuits breakers that allow PREPA remotely operate the system in the event of a distribution line failure. This mitigation measures have the ability of recharge the batteries avoiding the battery discharge drainage effect and loss of function of the communication and control systems. Note: Prior to the purchase of the generator, the sub-applicant must consider that the substation is located less than a mile (.52 miles) from the sea, so the exposed equipment and materials must be resilient to the environmental conditions

- **Elevation:**

  To avoid damage in a future flood event, the sub-applicant is proposing as a mitigation measure, an improved project that includes the backfill elevation of all critical interdependent equipment 2.1 meters above the existing floor elevation (EFE) [(BFE) + 2ft or 500-year flood]. As a result of the substation elevation, it will be required a subsoil stabilization to provide a suitable surface to install the new borrow fill.

Mitigation Measures *(Replacement)*

- **Gas Insulated Substation (GIS) System:**

  In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, the consolidation of all substation equipment into an enclosed integrated control building that is a more resilient and cost-effective solution than rebuilding the existing switchyard. The above mitigation measures will protect and harden the facility making the affected elements more resistant to similar hazards.

  This project is based on the extrapolated damages extended to the system as whole in the development of the 428 FAASt Grant and thus is viewed as eligible for the repairs and replacements as detailed in the MOR/SOW. The baseline repairs stipulated are in accordance with 'in kind" repairs, while the mitigation proposal is aligned holistically and prioritized based on a system needs analysis and benefits gained from hardening the components against future damages and losses of function as extrapolated system wide.

  The scope of the project is to increase resiliency, by replacing the AIS system (air insulated substation installed in a metal-clad) with a GIS system (gas insulated substation installed in an enclosed integrated control building). Utilizing a standard 428 MOR with added mitigation measures directly address damages and impacts as extrapolated across the system and reduce future damages as well as decrease the future probability of loss of function. The proposed mitigation measures are distinct and separate from the damaged portions but are aligned with directly protecting against future damages to both damaged and undamaged portions of the facility and interconnected system. Benefits realized at this facility and impressed holistically upon the system are a reduction of future similar damage such as hurricane high winds, heavy rain, wind blown debris, flooding, outages, as well as decrease the future likelihood of loss of function of the system.

  - Substation 42 kV and 15kV GIS (Gas Insulated Switchgear): Supply a 42 kV and 15kV GIS according to the engineering design in compliance with applicable DCD, codes & standards, specifications and EHP. It will be a compact low pressure SF6 (for insulation only not interruption) Gas Insulated (Single Bus), medium voltage, arc resistant, Switchgear (15KV GIS (8) single bus panel circuit breakers; and 42KV GIS (3) circuit breaker) with long term internal maintenance. GIS to be factory tested and certified in presence of LUMA representatives.
  - Prefabricated control enclosure, Stainless Steel, elevated with personnel platforms, doors, stairs, relay panels AC and DC power, station batteries, charger, etc.
  - Includes all the required works (material, equipment & labor) for full operation, start-up, and job site.

- **Utility Concrete Pole:**

  To avoid damage in a future event, the sub-applicant is proposing as a mitigation measure, increase the strength of the poles by increasing the wind tolerance to +160mph. The FAASt MOR included the PREPA distribution standards and specifications that were based on a 145mph sustained winds. However, the new PREPA Standard 2021 updates the design-criteria to a 160mph sustained winds resistant. The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.1 of the PAPPG V3.1.

  - Replace two (2) 55ft concrete H6 poles by two (2) 60ft galvanized steel S8 poles.
  - Replace two (2) 55ft concrete H6 poles "self-support" concrete base {[(5'(L) x 5'(W) x 10'(D)) - (1.63'(L) x 1.63'(W) x 9'(D))] / 27} = 8.5 CY; by two (2) 60ft galvanized steel S8 pole "self-support" concrete base {[(5.5'(L) x 5.5'(W) x 12'(D)) - (2.5'(L) x 2.5'(W) x 11'(D))] /

27} = 11 CY. = [(11CY - 8.5CY) x 2ea] = 5CY.

Hazard Mitigation Proposal (HMP) Cost:

Total Net Hazard Mitigation Cost (Base Cost) =	$ 4,726,022.43
+ HM (Applicant A&E, Management & General Conditions) =	$ 2,433,860.87
Hazard Mitigation Total Cost =	**$ 7,159,883.30**

HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects.". Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is $ 7,159,883.30 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

**See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents. (HMP, HMP cost estimate, Supporting documents file).

Cost

Code	Quantity	Unit	Total Cost	Section
3510 (Engineering And Design Services - PREPA FAASt A&E 335168)	1.00	Lump Sum	($1,397,859.52)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (Contract - PREPA FAASt Project 136271)	1.00	Lump Sum	$9,577,908.55	Uncompleted

CRC Gross Cost	$8,180,049.03
Total 406 HMP Cost	$7,159,883.30
Total Insurance Reductions	$0.00
CRC Net Cost	$15,339,932.33
Federal Share (90.00%)	$13,805,939.10
Non-Federal Share (10.00%)	$1,533,993.23

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW-11479(14117)	$15,339,932.33	90 %	$13,805,939.10	8/21/2023

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

7/6/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 169495

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

Total Public Assistance Amount: $15,339,932.33 (CRC Gross Cost $8,180,049.03 + $7,159,883.30 Mitigation Cost)

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: $300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount $25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is $0.00

The amount of the deductible previously funded in other projects is $25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: $0.00

***NUMBER* OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT:** (1)

Damaged Inventory (DI) #433800:

FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement

Location Description: Substations - Tapia GIS Rebuilt

GPS Coordinates: [redacted]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Sub-Stations"

SOV / Schedule Amount: $1,345,700,000.00

Applicable Deductible Amount: $25,000,000.00

Damage Inventory Amount: $15,339,932.33 (CRC Gross Cost $8,180,049.03 + $7,159,883.30 Mitigation Cost)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of $193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required forBuilding, for the peril of Wind (all wind associated losses including "wind driven rain") for the FAASt[223189] Substations - Tapia GIS Rebuilt - Equipment Repair& Replacement in the amount of $11,437,233.92 (CRC Gross Cost $8,180,049.03 – Uninsurable Cost $695,756.87 - $685,640.49 Equipment Cost + $4,638,582.25 Building Insurable Mitigation Cost); please see "SP-169495 Cost Estimate Insurance" and "SP-169495 HMP Insurance" files.

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain") for the FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement in the amount of $2,635,232.33 ($685,640.49 Equipment Cost + $1,949,591.84 Equipment Insurable Mitigation Cost); please see "SP-169495 Cost Estimate Insurance" and "SP-169495 HMP Insurance" files.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1
PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

…

5. If an applicant has an insurance requirement from a previous event:

a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.

b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., "retained risk").

…

4. If the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster, FEMA will reduce assistance by that amount in accordance with Section VII, Part 2(A) of this policy.

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed $5,000. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster

similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

a. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or

b. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Olga Renta, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain") for the FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement in the amount of $11,437,233.92	$11,437,233.92
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain") for the FAASt [223189] Substations - Tapia GIS Rebuilt - Equipment Repair & Replacement in the amount of $2,635,232.33	$2,635,232.33

406 Mitigation

There is no additional mitigation information on **FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)**.

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 - Floodplains - Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- National Historic Preservation Act (NHPA) - a. The Subrecipient and/or Subrecipient's contractor shall follow the Low Impact Debris Removal Stipulations (LIDRS) as stated in Appendix E of the Project Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022 b. Unexpected Discoveries: Pursuant to Stipulation III.B of the PSPA, if, in the course of implementing this Individual Undertaking(s), previously unidentified structures, sites, buildings, objects, districts, or archaeological deposits, that may be eligible for listing in the National Register, or human remains are uncovered, or if it appears that an Individual Undertaking has affected or will affect a previously identified historic property in an unanticipated manner, the contractor must notify Subrecipient who will immediately notify the Recipient. Work must stop in the vicinity of the discovery and measures must be taken to protect the discovery and avoid additional harm. c. Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to hardened surfaces can be provided at closeout.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) - 1. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. The applicant is responsible to ensure damaged transformers are handled, managed, and disposed of in accordance with all federal and state laws and requirements. Downed electrical equipment may contain toxic and hazardous materials, such as polychlorinated biphenyls (PCBs), and may spill these materials if a rupture occurs. Applicant is responsible for screening transformers that do or may contain PCBs and the area where any related spill occurred. The applicant is then responsible to handle, manage, dispose of, or recycle damaged equipment and contaminated soil as appropriate. Where possible, temporary measures should be implemented to prevent, treat, or contain further releases or mitigate the migration of PCBs into the environment. If damaged equipment or material storage containers must be stored temporarily, containers should be placed on hardened surface areas, such as a concrete or an asphalt for no more than 90 days. Excavated contaminated material should be disposed of in accordance with federal and state laws and requirements. 3. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- NEPA Determination - 1. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a Sub-recipient or their contractor beginning borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at close-out and must include fill type (private, commercial, etc.), name, fill site GPS coordinates (not of the company/governmental office), address, and type of material. 2. Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any

construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Substations - Tapia GIS Rebuilt Equipment Repair & Replacement] (Substations)**.

Final Reviews

Final Review

Reviewed By Amaro, Luis N. **Reviewed On** 07/31/2023 11:02 AM PDT

Review Comments

LNA 07/31/23. This project has been reviewed, found eligible and cost reasonable, and it is ready to continue the award process.

Recipient Review

Reviewed By Salgado, Gabriel **Reviewed On** 08/01/2023 2:02 PM PDT

Review Comments

Recipient review completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of $15,339,932.33 for subaward number 11479 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Miller, Thomas **Signed On** 08/03/2023

Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	546371 **P/W #** 11478	**Project Type**	Specialized
Project Category	F - Utilities	**Applicant**	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt- Substation Minor Repairs Group C (Substation)	**Event**	4339DR-PR (4339DR)
Project Size	Large	**Declaration Date**	9/20/2017
Activity Completion Date	9/20/2027	**Incident Start Date**	9/17/2017
		Incident End Date	11/15/2017
Process Step	Obligated		

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between *09/17/2017* and *11/15/2017*, caused:

Damage #920561; FAASt - Cana Sectionalizer-1710 & 1719

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Cana Sectionalizer-1710 & 1719
- **Facility Description:** Cana Sectionalizer-1710 & 1719 (13kV) substations are composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The capacity of the 1710 substation is 26.67/50.00 MVA with 5 feeders. The capacity of the 1719 substation is 18.00/33.60 MVA with 5 feeders.
- **Approx. Year Built:** 1970
- **GPS Latitude/Longitude:** [redacted]

General Damage Information:

- **Date Damaged:** 9/20/2017
- **Cause of Damage:** High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #920562; FAASt - Hogar Crea Substation 1717

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Hogar Crea Substation 1717
- **Facility Description:** Hogar Crea Substation 1717 (13kV) substation is composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The capacity of the substation is 24.00/44.80 MVA with 5 feeders.
- **Approx. Year Built:** 1970
- **GPS Latitude/Longitude:** [redacted]

General Damage Information:

- **Date Damaged:** 9/20/2017
- **Cause of Damage:** High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #920564; FAASt - Naranjito Substation -9801 & 9802

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Naranjito Substation -9801 & 9802
- **Facility Description:** Naranjito Substation -9801 & 9802 (8.32kV) substations are composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The capacity of the 9801 substation is 7.50/11.30 MVA with 5 feeders. The capacity of the 9802 substation is 5.00/7.50 MVA with 1 feeder.
- **Approx. Year Built:** 1970
- **GPS Latitude/Longitude:** [redacted]

General Damage Information:

- **Date Damaged:** 9/20/2017
- **Cause of Damage:** High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #920566; FAASt- Rio Bayamon Sectionalizer - 1709 & 1720

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Rio Bayamon Sectionalizer - 1709 & 1720
- **Facility Description:** Rio Bayamon Sectionalizer - 1709 & 1720 (13kV) substation is composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The capacity of the 1709 substation is 24.00/44.80 MVA with 5 feeders. The capacity of the 1720 substation is 12.00/22.40 MVA with 4 feeders.
- **Approx. Year Built:** 1970
- **GPS Latitude/Longitude:** [redacted]

General Damage Information:

- **Date Damaged:** 9/20/2017
- **Cause of Damage:** High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

920561 FAASt - Cana Sectionalizer-1710 & 1719

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for Substation Minor Repair Group C under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historic Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair the substations submitted as part of the Substation Minor Repair Group A (San Juan Area). This project is part of the Substation Minor Repair Program which has been broken down by regions.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix A which collectively provides the necessary consent for LUMA Energy, as the agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

Island wide substations experienced substantial damages due to Hurricane Maria in September 2017. This project is part of the Substation Minor Repair Program which will be impacting multiple assets through numerous municipalities. Similar documentation will be submitted for each respective program groups. The purpose of this project is to repair damages, mitigate flooding issues and harden the substation to improve the reliability and resiliency of the Puerto Rico electrical grid.

This project include the following Group C substation located in the Bayamon region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction
Cana Sectionalizer	1710/ 1719/1712	[redacted]	[redacted], [redacted]	August-1975

Project Scope of Work

Proposed 428 Public Assistance Scope of Work:

- Remove debris from the site and buildings, including damaged fencing, windows, doors, and other items as site preparation measure for construction works. No vegetative debris to be removed outside existing perimeter.
- Perform a cleanup for the Spill Prevention Control and Countermeasure (SPCC) of the transformers on site. Construct walls for the secondary oil containment
- Install approximately 551-ft of perimeter fence and gates.
    i. Fence posts will be installed to a maximum depth of 36” below final grade. Typical excavation will be 1’-0” in diameter and a maximum of 42” in depth.
    ii. Fence foundations will be built around the perimeter to a maximum depth of 36” below final grade. Typical excavation will be 4’-0” center to center and a maximum of 42” in depth.
- Perform control building repairs:
    i. Paint control room including roof treatment cement plaster for ceiling where water damage is presented.
    ii. Replace doors and windows.
    iii. Install smoke detector, exhaust fan equipment, epoxy floor paint and fire extinguisher for the battery room.
    iv. Replace interior and exterior building lighting fixtures.
    v. Repair bathroom including replacement of toilet, sink, and plumbing.
    vi. Replace eyewash and shower station.
- Paint existing louvers
- Install new exterior security lights.
- Install 3ea new aluminum jalousie windows (36” x 48”).
- Install 3ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Construction of a new battery pit and paint with Epoxy floor paint on battery room
- Construction of new Driveway. Existing driveway to be demolished and disposed.
- Construct a curb wall to prevent gravel loss and erosion.
- Install manhole cover.
- Repair 1ea leaned lighting pole and 1ea leaned distribution pole around the substation yard.

- Install new drainage system for the substation site.

- Perform an integrity test on grounding connections and perform electrical soil resistivity measurements to analyze the existing grid layout using CDEGS software.
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material.
- Install within substation footprint new closed-circuit television (CCTV) system, including 8ea cameras, with their respective poles, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches

    - Conduits for closed-circuit television (CCTV) system will be installed to a maximum depth of 42" below final grade from the control room to each pole with CCTV for power and communication.

- Replace one 125VDC battery bank and associated equipment.

- Replace one 48VDC battery bank and associated equipment.

Structure Age

- Caná Sectionalizer 1712 (115/13.2kV), was built in August 1975. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
    - Caná 1710 (115/13.2kV) built on April 1978
    - Caná 1719 (115/13.2kV) built on September 1998

Debris Removal

- The type of debris that may be found in the process of demolition are batteries, battery charges, concrete, metal scrap, domestic waste, wood, etc. The debris will be separated and taken to an approved waste disposal facility per LUMA Waste Management Plan.

Staging Area

- The main staging area will be located inside the premises of the substation and will serve as an assembly point for all the materials to be installed. See Appendix G

Equipment to be used

- Skid Steer, Excavator, Dump trucks, Manlifts, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine, Flatbed platform, portable generators, and gas small tools.
- All equipment used will comply with Tier 4 EPA Emission Standards, if available

Fill, gravel, sand, etc.

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in Appendix M.

Hazardous Material:

- The identified hazardous materials that can be found in the substation are asbestos and lead. If the presence of asbestos and lead is confirmed in the structures to be demolished, LUMA will follow all permits protocols required by law to properly remove and dispose of the hazardous materials from the premises.
- Material amounts will be provided by a certified management contractor performing a site evaluation calculation for asbestos and lead paint.

Ground disturbance:

- All project construction activities will take place within the existing substation boundary that has been previously disturbed 30" below the surface for construction of the existing substation ground grid.

Specific List of Permits Required

- Permit Management Office of Puerto Rico (OGPe) OGPe Administrative Order 2021-07

- Bayamón Municipality Notification
- Department of Transportation of Public Works (DTOP) Excavation and Demolition Notification
- Department of Natural Resources Agency (DNRA) - If asbestos is present at the site, Asbestos Permit will be required.
- Department of Natural Resources Agency (DNRA) - If lead is present at the site, Lead Permit will be required.
- Consolidate General Permit or Incidental Single Permit for:
    - Emission Sources Permit
    - Hazardous Waste Disposal Plan – DNRA
    - Plan CES

For detailed information, please refer to APPENDIX C – Cana Sectionalizer Engineering & Asset Management-Site Report and APPENDIX B Class III Estimate.

Additional details on Ground Grid studies, Ground Grid repairs, SPCC, and site grading will be included in the detailed engineering phase.

The scope of this project is only for the repairs and activities presented in this list within the Cana Sectionalizer 1710-1719 site. All other scope including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network and high voltage equipment's may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary site detail assessment using LUMA engineering department and may be subject to change. LUMA has identified risks and allowances for the mitigation of potential known risks.

COST ESTIMATE	
Minor Repair Group C	**428**
PLANNING (FAASt 335168)	**$35,073.14**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$87,035.59**
MANAGEMENT	**$51,877.18**
SUBSTATION (Cana Sectionalizer)	**$580,237.28**
GENERAL CONDITIONS	**$72,199.07**
CONTINGENCY	**$60,292.00**
TOTAL PROJECT COST ESTIMATE	**$886,714.27**
FAASt PROJECT # 546371 Total	$712,728.36
FAASt A&E # 335168 Total	$173,985.91

Work to be completed: $886,714.27

A&E Deduction (Global A&E FAASt #335168): -$173,985.91

DI 920561 Total Cost: $712,728.36

FEMA CRC Project 546371 Cost Summary

DI 920561 Total: $712,728.36

DI 920562 Total: $629,196.53

DI 920564 Total: $528,822.90

DI 920566 Total: $777,511.27

Project Total, Sum of All DI Costs: $2,648,259.06

Scope Notes:

1. Refer to detailed SOW provided in document "546371-DR4339PR-00 FEMA Detailed Scope of Work for Substation Minor Repairs -Group C (43001-CP-SOW-0009_Rev7) (2023-06-26) - signed.pdf"
2. Refer to detailed cost estimate provided in document "546371-DR4339PR-02 APPENDIX B LPCE Class III Estimate Group C Minor Repairs Estimate (06-26-2023).xlsx"
3. For reference information, refer to the following documents/attachments:

APPENDIX A- 546371-DR4339PR-01 APPENDIX A - Consent to Federal Funding - FEMA COR3

APPENDIX B- 546371-DR4339PR-02 APPENDIX B – LPCE Class III Estimate

APPENDIX C- 546371-DR4339PR-03 APPENDIX C – Cana Sectionalizer Engineering & Asset Management- Site Inspection Minor Repair Report.

APPENDIX G- 546371-DR4339PR-07 APPENDIX G - Canas Sectionalizer Access Roads-Staging Area

APPENDIX K- 546371-DR4339PR-11 APPENDIX K - Prefered Vendor List Directory PR

APPENDIX L- 546371-DR4339PR-12 APPENDIX L - LUMA Waste Management Plan

APPENDIX M- 546371-DR4339PR-13 APPENDIX M -0335Wildlife Avian and Historical Resources Protection

APPENDIX N- 546371-DR4339PR-14 APPENDIX N - Desktop Review Map Group C, Cana Sectionalizer, Crea Substation, Narajito Substation & Rio Bayamon Sectionalizer

APPENDIX O- 546371-DR4339PR-15 APPENDIX O - E.H.P CHECK LIST FOR Sub Minor Repair Program (only group C) ENV

APPENDIX P- 546371-DR4339PR-16 APPENDIX P1-P4 - Existing Drawing Reference for Group C
APPENDIX P1-Cana Sectionalizer,

APPENDIX Q- 546371-DR4339PR-17 APPENDIX Q - PREPA Standard for Fencing

APPENDIX R- 546371-DR-4339PR-18 APPENDIX R - Land and Permit Evaluation (Substation Minor Repairs -Group C)

APPENDIX S- 546371-DR4339PR-19 APPENDIX S - BCA Narrative

4. This project is part of 136271 – Puerto Rico Electrical Power Authority (PREPA) Island Wide FAASt Project.

5. Architectural and Engineering (A&E) Costs previously obligated from PREPA FAASt Global A&E 335168 for the subject project were deducted in this version.

406 HMP Scope

Project number: 546371 FAASt - Substation Minor Repairs Group C (Substation)

Damage # 920561; FAASt – [Cana Sectionalizer-1710 & 1719]

Applicant: PR Electric Power Authority (000-UA2QU-00)

Location: Bayamon, Puerto Rico

GPS Latitude/Longitude: [redacted]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage "loss of power" from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

The FAASt Substation Minor Repairs Group C (Substation) consists of 4ea facilities (sites) which are distributed as follows: Cana Sectionalizer-1710 & 1719, Hogar Crea Substation 1717, Naranjito Substation -9801 & 9802, Rio Bayamon Sectionalizer - 1709 & 1720.

The substation facilities minor repairs are typically composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The minor repair practices include facilities security upgrades (locks, fencing upgrade, CCTV), repair drainage, grading, and restoration of gravel, repair and replace the grounding grid, replace broken perimeter fence and gates, clean, and paint control room, replace lights, doors, and windows of the control room, replace battery charger and batteries, replace leaning or broken poles, among others. According to the information provided by the sub-applicant, due to the high hurricane winds, wind-borne debris, and prolonged heavy rain was the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, reducing chain link fence post spacing from 10 feet to 8 feet to reinforce the fence and raise an additional 12" above grade to prevent erosion and strengthen the posts and fence, install a geosynthetic material between the sub-base soil and the new gravel to act as soil stabilization, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration in the control room, install new back-up power generator to provide continuous power to the circuits breakers that allow PREPA to operate the system remotely in the event of a distribution line failure, replace aluminum jalousie window by wind-resistant steel-louver windows, replace exterior steel doors by 16ga. fire rated steel door to reduce door damage due to wind-borne debris and high winds, and increase the strength of the CCTV poles from 90mph to +160mph sustained winds material to reduce pole damage due high winds. The above mitigation measures will protect and make the affected elements more resistant to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures *(Supplement)*

1. On the damaged chain link fence [8ft(H) plus barbed wire, 6 ga. 2" mesh, sch-40 1-5/8" top rail, 2.5" line post and 3" end post installed in a concrete footing (LUMA/PREPA Standard for Fencing)], instead of 10ft spacing between post, provide and install (**14ea**) new 2.5" x 11ft(H) sch-40 line post with barbed wire extension arm to reduce the spacing from 10ft to 8ft to increase the resistance against wind-borne debris, and high hurricane winds impacts and/or effects, **154 LF**.
2. Note: In order to comply with LUMA/PREPA codes and standards, each alternate pole is required to be grounded to the existing substation grounding grid.
    - Exothermic weld, 4/0 wire to 1" ground rod = **7 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **7 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **14 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **21 EA.**
    - Ground wire, copper wire, bare stranded, #4 = **21 LF**.
    - Ground wire, copper wire, bare stranded, 4/0 = **140 LF**
1. Chain-link fence foundation wall will be raised an additional 12" [551ft(L) x 1ft(H) x 0.5ft(W)] above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, **10.2CY**.

1. Install **9,149 SF** of geosynthetic material between subbase soil and the new gravel as a new layer separator to act as a soil stabilization measure on all the areas where the gravel is used for traffic. This application will avoid the gravel contamination with the soil and minimizes the loss of depth due to pressure exerted by vehicles or equipment moving over for maintenance or testing.
2. On the control room roof, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration, **1,363 SF.**
3. To avoid damage to the battery bank by the discharge drainage effect, the Applicant is proposing as a mitigation measure, the installation of a **(1ea)** new Standby Emergency Power Generator [31.3KVA, 120/240V, aluminum enclosure, with an Automatic Transfer Switch (ATS)] that will provide continuous

power to the circuits breakers that allow PREPA remotely operate the system in the event of a distribution line failure. This mitigation measures have the ability of recharge the batteries avoiding the battery discharge drainage effect and loss of function of the communication and control systems.

Mitigation Measures *(Replacement)*

1. On the damaged aluminum jalousie window (3ft x 4ft), instead of aluminum jalousie window, provide and install (**3ea**) new wind-resistant aluminum-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **36 SF**.
2. On the damaged exterior single steel doors (3ft x 7ft), instead of 20ga., 90-minutes fire rated steel door, provide and install new 16ga., 90-minutes fire rated steel door to reduce the door damage due to wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **3 EA.**
3. Replace (**8ea**) poles for closed-circuit television (CCTV) system. This measure will increase the strength of the poles by increasing the wind tolerance from 90mph to +160mph.

-

CCTV System - The installation of the cameras will help in the response phase. Hazard Mitigation funds are to eliminate, avoid or prevent a damage due to a natural hazard event such as hurricane winds, flooding, wind borne debris and others. HM funds are not intended for response improvement. Nevertheless, HM funds can be provided to harden the elements of the equipment installed through the recovery solution. At the meeting with the Applicant held on 7/12/22, it was agreed that the CCTV System (cameras) will be included in the 428 PA portion and not in 406 HM as initially proposed by the sub-applicant.

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) =	$ 65,535.15
+ HM (Applicant A&E, Management & General Conditions) =	$ 30,653.82
Hazard Mitigation Total Cost =	**$96,188.97**

HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects.". Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is $96,188.97 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

****See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents *(HMP, HMP cost estimate, Supporting documents file)*.**

920562 FAASt - Hogar Crea Substation 1717

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for Substation Minor Repair Group C under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historic Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair the substations submitted as part of the Substation Minor Repair Group A (San Juan Area). This project is part of the Substation Minor Repair Program which has been broken down by regions.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix A which collectively provides the necessary consent for LUMA Energy, as the agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

Island wide substations experienced substantial damages due to Hurricane Maria in September 2017. This project is part of the Substation Minor Repair Program which will be impacting multiple assets through numerous municipalities. Similar documentation will be submitted for each respective program groups. The purpose of this project is to repair damages, mitigate flooding issues and harden the substation to improve the reliability and resiliency of the Puerto Rico electrical grid.

This project include the following Group C substation located in the Bayamon region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction
Crea Substation	1717	[redacted]	[redacted]	June-1973

Project Scope of Work

Proposed 428 Public Assistance Scope of Work:

- Remove debris from the site and buildings, including damaged fencing, windows, doors, and other items as site preparation measure for construction works. Vegetative debris to be removed extend along the south side, 100 ft long x 3 ft wide x 3 ft height, and to the east side, 120 ft long x 3 ft wide x 3 ft height, of the existing perimeter
- Construction of a secondary oil containment for the transformer.
- Install approximately 575 ft of perimeter fence and gates.
    i. Fence posts will be installed to a maximum depth of 36” below final grade. Typical excavation will be 1’-0” in diameter and a maximum of 42” in depth.
    ii. Fence foundations will be built around the perimeter to a maximum depth of 36” below final grade. Typical excavation will be 4’-0” center to center and a maximum of 42” in depth.
- Perform control building repairs:
    i. Paint control room including roof treatment cement plaster for ceiling where water damage is presented.
    ii. Replace doors and windows.
    iii. Install smoke detector, exhaust fan equipment, epoxy floor paint and fire extinguisher for the battery room.
    iv. Replace interior and exterior building lighting fixtures.
    v. Repair bathroom including replacement of toilet, sink, and plumbing.
    vi. Replace eyewash and shower station.
- Install new exterior security lights.
- Install 4ea new aluminum jalousie windows (36” x 48”).
- Install 1ea control room interior single doors with 90 minutes fire-proof

- Install 2ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Repair substation driveway.
- Construction of concrete swale for storm water control
- Construction of a curb wall to prevent gravel loss and erosion.
- Install manhole cover.
- Repair 2 leaned lighting poles and 2 leaned distribution poles around the substation yard.
- Install new drainage system for the substation site.
- Perform an integrity test on grounding connections and perform electrical soil resistivity measurements to analyze the existing grid layout using CDEGS software.
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material.
- Install within substation footprint new closed-circuit television (CCTV) system, including 8ea cameras, with their respective poles, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches
- Conduits for closed-circuit television (CCTV) system will be installed to a maximum depth of 42” below final grade from the control room to each pole with CCTV for power and communication.
- Construction of a new battery pit and paint with Epoxy floor paint on battery room
- Replace one 125 VDC battery banks and associated equipment.

Structure Age

- Crea Substation 1717 (115/13.2kV), was built in June 1973. Over time no major apparatus was installed within the existing substation footprint.

Debris Removal

- The type of debris that may be found in the process of demolition are batteries, battery charges, concrete, metal scrap, domestic waste, wood, etc. The debris will be separated and taken to an approved waste disposal facility per LUMA Waste Management Plan.

Staging Area

- The main staging area will be located inside the premises of the substation and will serve as an assembly point for all the materials to be installed. See Appendix H

Equipment to be used

- Skid Steer, Excavator, Dump trucks, Manlifts, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine, Flatbed platform, portable generators, and gas small tools.
- All equipment used will comply with Tier 4 EPA Emission Standards, if available

Fill, gravel, sand, etc.

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in Appendix K.

Hazardous Material

- The identified hazardous materials that can be found in the substation are asbestos and lead. If the presence of asbestos and lead is confirmed in the structures to be demolished, LUMA will follow all permits protocols required by law to properly remove and dispose of the hazardous materials from the premises.

- Material amounts will be provided by a certified management contractor performing a site evaluation calculation for asbestos and lead paint.

Ground disturbance:

- All project construction activities will take place within the existing substation boundary that has been previously disturbed 30" below the surface for construction of the existing substation ground grid.

Specific List of Permits Required

- Permit Management Office of Puerto Rico (OGPe) OGPe Administrative Order 2021-07
- Bayamón Municipality Notification
- Department of Transportation of Public Works (DTOP) Notification
- Department of Transportation of Public Works (DTOP) Excavation and Demolition Notification
- Department of Natural Resources Agency (DNRA) - If asbestos is present at the site, Asbestos Permit will be required.
- Department of Natural Resources Agency (DNRA) - If lead is present at the site, Lead Permit will be required.
- Consolidate General Permit or Incidental Single Permit for:
    - Emission Sources Permit
    - Hazardous Waste Disposal Plan – DNRA
    - Plan CES

For detailed information, please refer to APPENDIX D – Crea Substation Engineering & Asset Management-Site Report and APPENDIX B Class III Estimate.

Additional details on Ground Grid studies, Ground Grid repairs, SPCC, and site grading will be included in the detailed engineering phase.

The scope of this project is only for the repairs and activities presented in this list within the Crea 1717 site. All other scope including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network and high voltage equipment's may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary site detail assessment using LUMA engineering department and may be subject to change. LUMA has identified risks and allowances for the mitigation of potential known risks.

COST ESTIMATE	
Minor Repair Group C	**428**
PLANNING (FAASt 335168)	**$ 30,962.56**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 76,835.01**
MANAGEMENT	**$ 45,797.17**
SUBSTATION (Crea Substation)	**$512,233.42**
GENERAL CONDITIONS	**$ 63,737.33**
CONTINGENCY	**$ 53,225.78**
TOTAL PROJECT COST ESTIMATE	**$782,791.27**
FAASt PROJECT # 546371 Total	$629,196.53

FAASt A&E # 335168 Total	$153,594.74

Work to be completed: $782,791.27

A&E Deduction (Global A&E FAASt #335168): -$153,594.74

DI 920562Total Cost: $ 629,196.53

406 HMP Scope

Project number: 546371 FAASt - Substation Minor Repairs Group C (Substation)

Damage #920562; FAASt – [Hogar Crea Substation 1717]

Applicant: PR Electric Power Authority (000-UA2QU-00)

Location: Bayamon, Puerto Rico

GPS Latitude/Longitude: [redacted]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage "loss of power" from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

The FAASt Substation Minor Repairs Group C (Substation) consists of 4ea facilities (sites) which are distributed as follows: Cana Sectionalizer-1710 & 1719, Hogar Crea Substation 1717, Naranjito Substation -9801 & 9802, Rio Bayamon Sectionalizer - 1709 & 1720.

The substation facilities minor repairs are typically composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The minor repair practices include facilities security upgrades (locks, fencing upgrade, CCTV), repair drainage, grading, and restoration of gravel, repair and replace the grounding grid, replace broken perimeter fence and gates, clean, and paint control room, replace lights, doors, and windows of the control room, replace battery charger and batteries, replace leaning or broken poles, among others. According to the information provided by the sub-applicant, due to the high hurricane winds, wind-borne debris, and prolonged heavy rain was the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, reducing chain link fence post spacing from 10 feet to 8 feet to reinforce the fence and raise an additional 12" above grade to prevent erosion and strengthen the posts and fence, install a geosynthetic material between the sub-base soil and the new gravel to act as soil stabilization, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration in the control room, install new back-up power generator to provide continuous power to the circuits breakers that allow PREPA to operate the system remotely in the event of a distribution line failure, replace aluminum jalousie window by wind-resistant steel-louver windows, replace exterior steel doors by 16ga. fire rated steel door to reduce door damage due to wind-borne debris and high winds, and increase the strength of the CCTV poles from 90mph to +160mph sustained winds material to reduce pole damage due high winds. The above mitigation measures will protect and make the affected elements more resistant to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures *(Supplement)*

1. On the damaged chain link fence [8ft(H) plus barbed wire, 6 ga. 2" mesh, sch-40 1-5/8" top rail, 2.5" line post and 3" end post installed in a concrete footing (LUMA/PREPA Standard for Fencing)], instead of 10ft spacing between post, provide and install (**14ea**) new 2.5" x 11ft(H) sch-40 line post with barbed wire extension arm to reduce the spacing from 10ft to 8ft to increase the resistance against wind-borne debris, and high hurricane winds impacts and/or effects, **154 LF**.

2. Note: In order to comply with LUMA/PREPA codes and standards, each alternate pole is required to be grounded to the existing substation grounding grid.

- Exothermic weld, 4/0 wire to 1" ground rod = **7 EA**.
- Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **7 EA.**
- Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **14 EA.**
- Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **21 EA.**
- Ground wire, copper wire, bare stranded, #4 = **21 LF.**
- Ground wire, copper wire, bare stranded, 4/0 = **140 LF**

3. Chain-link fence foundation wall will be raised an additional 12" [575ft(L) x 1ft(H) x 0.5ft(W)] above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, **10.7CY**.

4. Install **13,445 SF** of geosynthetic material between subbase soil and the new gravel as a new layer separator to act as a soil stabilization measure on all the areas where the gravel is used for traffic. This application will avoid the gravel contamination with the soil and minimizes the loss of depth due to pressure exerted by vehicles or equipment moving over for maintenance or testing.

1. On the control room roof, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration, **470 SF.**
2. To avoid damage to the battery bank by the discharge drainage effect, the Applicant is proposing as a mitigation measure, the installation of a **(1ea)** new Standby Emergency Power Generator [31.3KVA, 120/240V, aluminum enclosure, with an Automatic Transfer Switch (ATS)] that will provide continuous power to the circuits breakers that allow PREPA remotely operate the system in the event of a distribution line failure. This mitigation measures have the ability of recharge the batteries avoiding the battery discharge drainage effect and loss of function of the communication and control systems.

Mitigation Measures *(Replacement)*

7. On the damaged aluminum jalousie window (3ft x 4ft), instead of aluminum jalousie window, provide and install (**4ea**) new wind-resistant steel-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **48 SF**.

8. On the damaged exterior single steel doors (3ft x 7ft), instead of 20ga., 90-minutes fire rated steel door, provide and install new 16ga., 90-minutes fire rated steel door to reduce the door damage due to wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **3 EA.**

9. Replace (**8ea**) poles for closed-circuit television (CCTV) system. This measure will increase the strength of the poles by increasing the wind tolerance from 90mph to +160mph.

CCTV System - The installation of the cameras will help in the response phase. Hazard Mitigation funds are to eliminate, avoid or prevent a damage due to a natural hazard event such as hurricane winds, flooding, wind borne debris and others. HM funds are not intended for response improvement. Nevertheless, HM funds can be provided to harden the elements of the equipment installed through the recovery solution. At the meeting with the Applicant held on 7/12/22, it was agreed that the CCTV System (cameras) will be included in the 428 PA portion and not in 406 HM as initially proposed by the sub-applicant.

Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) =	$ 67,479.10
+ HM (Applicant A&E, Management & General Conditions) =	$ 31,563.10
Hazard Mitigation Total Cost =	**$99,042.20**

HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects.". Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is $99,042.20 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

****See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents *(HMP, HMP cost estimate, Supporting documents file)*.**

920564 FAASt - Naranjito Substation -9801 & 9802

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for Substation Minor Repair Group C under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historic Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair the substations submitted as part of the Substation Minor Repair Group A (San Juan Area). This project is part of the Substation Minor Repair Program which has been broken down by regions.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix A which collectively provides the necessary consent for LUMA Energy, as the agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

Island wide substations experienced substantial damages due to Hurricane Maria in September 2017. This project is part of the Substation Minor Repair Program which will be impacting multiple assets through numerous municipalities. Similar documentation will be submitted for each respective program groups. The purpose of this project is to repair damages, mitigate flooding issues and harden the substation to improve the reliability and resiliency of the Puerto Rico electrical grid.

This project include the following Group C substation located in the Bayamon region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction
Naranjito Substation	9801/9802	[redacted]	[redacted]	September-1963

Project Scope of Work

Proposed 428 Public Assistance Scope of Work:

- Remove debris from the site and buildings, including damaged fencing, windows, doors, and other items as site preparation measure for construction works. Vegetative debris to be removed extend along the east side, 160 ft long x 3 ft wide x 3 ft height, and to the south side, 70 ft long x 3 ft wide x 3 ft height, of the existing perimeter
- Construction of a secondary oil containment for the transformers.
- Install approximately 401 ft of perimeter fence and gates.

  i. Fence posts will be installed to a maximum depth of 36" below final grade. Typical excavation will be 1'-0" in diameter and a maximum of 42" in depth.

  ii. Fence foundations will be built around the perimeter to a maximum depth of 36" below final grade. Typical excavation will be 4'-0" center to center and a maximum of 42" in depth.

- Perform control building repairs:

  i. Paint control room including roof treatment cement plaster for ceiling where water damage is presented.
  ii. Replace doors and windows.
  iii. Install smoke detector, exhaust fan equipment, epoxy floor paint and fire extinguisher for the battery room.
  iv. Replace interior and exterior building lighting fixtures.
  v. Repair bathroom including replacement of toilet, sink, and plumbing.
  vi. Replace eyewash and shower station.

- Paint existing louvers
- Install new exterior security lights.
- Install 3ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Repair substation driveway.
- Construction of concrete swale 3' wide X 6" deep for storm water control
- Construct a curb wall to prevent gravel loss and erosion.
- Install manhole cover.
- Repair 1 leaned lighting pole around the substation yard.
- Install new drainage system for the substation site.
- Perform an integrity test on grounding connections and perform electrical soil resistivity measurements to analyze the existing grid layout using CDEGS software.
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material.
- Install within substation footprint new closed-circuit television (CCTV) system, including 8ea cameras, with their respective poles, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches

  o Conduits for closed-circuit television (CCTV) system will be installed to a maximum depth of 42" below final grade from the control room to each pole with CCTV for power and communication.

- Construction of a new battery pit and paint with Epoxy floor paint on battery room
- Replace one 48VDC battery bank and associated equipment.

Structure Age

- Naranjito Substation 9802 (38/8.32kV), was built in September 1963. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
  - Naranjito 9801 (38/8.32kV) built on October 1965

Debris Removal

- The type of debris that may be found in the process of demolition are batteries, battery charges, concrete, metal scrap, domestic waste, wood, etc. The debris will be separated and taken to an approved waste disposal facility per LUMA Waste Management Plan.

Staging Area

- The main staging area will be located inside the premises of the substation and will serve as an assembly point for all the materials to be installed. See Appendix I

Equipment to be used.

- Skid Steer, Excavator, Dump trucks, Manlifts, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine, Flatbed platform, portable generators, and gas small tools.
- All equipment used will comply with Tier 4 EPA Emission Standards, if available

Fill, gravel, sand, etc.

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in Appendix K.

Hazardous Material:

- The identified hazardous materials that can be found in the substation are asbestos and lead. If the presence of asbestos and lead is confirmed in the structures to be demolished, LUMA will follow all permits protocols required by law to properly remove and dispose of the hazardous materials from the premises.
- Material amounts will be provided by a certified management contractor performing a site evaluation calculation for asbestos and lead paint.

Ground disturbance:

- All project construction activities will take place within the existing substation boundary that has been previously disturbed 30" below the surface for construction of the existing substation ground grid.

Specific List of Permits Required

- Construction Permit
- Naranjito Municipality Notification
- Department of Transportation of Public Works (DTOP) Notification
- Department of Transportation of Public Works (DTOP) Excavation and Demolition Notification
- Department of Natural Resources Agency (DNRA) - If asbestos is present at the site, Asbestos Permit will be required.
- Department of Natural Resources Agency (DNRA) - If lead is present at the site, Lead Permit will be required.
- Consolidate General Permit or Incidental Single Permit for:
    - Emission Sources Permit
    - Hazardous Waste Disposal Plan – DNRA
    - Plan CES
- Planning Board (JP) Substantial Damage Determination

For detailed information, please refer to APPENDIX E – Naranjito Substation Engineering & Asset Management-Site Report and APPENDIX B Class III Estimate.

Additional details on Ground Grid studies, Ground Grid repairs, SPCC, and site grading will be included in the detailed engineering phase.

The scope of this project is only for the repairs and activities presented in this list within the Naranjito 9801-9802 site. All other scope including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network and high voltage equipment's may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary site detail assessment using LUMA engineering department and may be subject to change. LUMA has identified risks and allowances for the mitigation of potential known risks.

COST ESTIMATE	
Minor Repair Group C	**428**
PLANNING (FAASt 335168)	**$ 26,023.21**

ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 64,577.78**
MANAGEMENT	**$ 38,491.30**
SUBSTATION (Naranjito Substation)	**$430,518.52**
GENERAL CONDITIONS	**$ 53,569.53**
CONTINGENCY	**$ 44,734.84**
TOTAL PROJECT COST ESTIMATE	**$657,915.18**
FAASt PROJECT # 546371 Total	$528,822.90
FAASt A&E # 335168 Total	$129,092.28

Work to be completed: $657,915.18

A&E Deduction (Global A&E FAASt #335168): -$129,092.28

DI 920564 Total Cost: $528,822.90

406 HMP Scope

Project number: 546371 FAASt - Substation Minor Repairs Group C (Substation)

Damage #920564; FAASt – [Naranjito Substation -9801 & 9802]

Applicant: PR Electric Power Authority (000-UA2QU-00)

Location: Naranjito, Puerto Rico

GPS Latitude/Longitude: [redacted]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage "loss of power" from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

The FAASt Substation Minor Repairs Group C (Substation) consists of 4ea facilities (sites) which are distributed as follows: Cana Sectionalizer-1710 & 1719, Hogar Crea Substation 1717, Naranjito Substation -9801 & 9802, Rio Bayamon Sectionalizer - 1709 & 1720.

The substation facilities minor repairs are typically composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The minor repair practices include facilities security upgrades (locks, fencing upgrade, CCTV), repair drainage, grading, and restoration of gravel, repair and replace the grounding grid, replace broken perimeter fence and gates, clean, and paint control room, replace lights, doors, and windows of the control room, replace battery charger and batteries, replace leaning or broken poles, among others. According to the information provided by the sub-applicant, due to the high hurricane winds, wind-borne debris, and prolonged heavy rain was the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, reducing chain link fence post spacing from 10 feet to 8 feet to reinforce the fence and raise an additional 12" above grade to prevent erosion and strengthen the posts and fence, install a geosynthetic material between the sub-base soil and the new gravel to act as soil stabilization, correct slope using tapered lightweight concrete to improve drainage and prevent

water damages to the roof waterproofing system and water infiltration in the control room, install new back-up power generator to provide continuous power to the circuits breakers that allow PREPA to operate the system remotely in the event of a distribution line failure, replace aluminum jalousie window by wind-resistant steel-louver windows, replace exterior steel doors by 16ga. fire rated steel door to reduce door damage due to wind-borne debris and high winds, and increase the strength of the CCTV poles from 90mph to +160mph sustained winds material to reduce pole damage due high winds. The above mitigation measures will protect and make the affected elements more resistant to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures *(Supplement)*

1. On the damaged chain link fence [8ft(H) plus barbed wire, 6 ga. 2" mesh, sch-40 1-5/8" top rail, 2.5" line post and 3" end post installed in a concrete footing (LUMA/PREPA Standard for Fencing)], instead of 10ft spacing between post, provide and install (**10ea**) new 2.5" x 11ft(H) sch-40 line post with barbed wire extension arm to reduce the spacing from 10ft to 8ft to increase the resistance against wind-borne debris, and high hurricane winds impacts and/or effects, **110 LF.** Refer to Appendix J: Section IX of the PAPPG V3.1.
2. Note: In order to comply with LUMA/PREPA codes and standards, each alternate pole is required to be grounded to the existing substation grounding grid.

    - Exothermic weld, 4/0 wire to 1" ground rod = **5 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **5 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **10 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **15 EA**.
    - Ground wire, copper wire, bare stranded, #4 = **15 LF.**
    - Ground wire, copper wire, bare stranded, 4/0 = **100 LF**

1. Chain-link fence foundation wall will be raised an additional 12" [401ft(L) x 1ft(H) x 0.5ft(W)] above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, **7.4CY**.
2. Install **6,617 SF** of geosynthetic material between subbase soil and the new gravel as a new layer separator to act as a soil stabilization measure on all the areas where the gravel is used for traffic. This application will avoid the gravel contamination with the soil and minimizes the loss of depth due to pressure exerted by vehicles or equipment moving over for maintenance or testing.
3. On the control room roof, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration, **450 SF**.

6. To avoid damage to the battery bank by the discharge drainage effect, the Applicant is proposing as a mitigation measure, the installation of a **(1ea)** new Standby Emergency Power Generator [31.3KVA, 120/240V, aluminum enclosure, with an Automatic Transfer Switch (ATS)] that will provide continuous power to the circuits breakers that allow PREPA remotely operate the system in the event of a distribution line failure. This mitigation measures have the ability of recharge the batteries avoiding the battery discharge drainage effect and loss of function of the communication and control systems.

Mitigation Measures *(Replacement)*

7. On the damaged exterior single steel doors (3ft x 7ft), instead of 20ga., 90-minutes fire rated steel door, provide and install new 16ga., 90-minutes fire rated steel door to reduce the door damage due to wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **3 EA.**

8. Replace (**8ea**) poles for closed-circuit television (CCTV) system. This measure will increase the strength of the poles by increasing the wind tolerance from 90mph to +160mph.

CCTV System - The installation of the cameras will help in the response phase. Hazard Mitigation funds are to eliminate, avoid or prevent a damage due to a natural hazard event such as hurricane winds, flooding, wind borne debris and others. HM funds are not intended for response improvement. Nevertheless, HM funds can be provided to harden the elements of the equipment installed through the recovery solution. At the meeting with the Applicant held on 7/12/22, it was agreed that the CCTV System (cameras) will be included in the 428 PA portion and not in 406 HM as initially proposed by the sub-applicant.

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) = $ 53,870.30

+ HM (Applicant A&E, Management & General Conditions) = $ 25,197.64

Hazard Mitigation Total Cost = **$79,067.94**

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HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects.". Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is $79,067.94 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

****See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents *(HMP, HMP cost estimate, Supporting documents file)*.**

920566 FAASt- Rio Bayamon Sectionalizer - 1709 & 1720

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for Substation Minor Repair Group C under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historic Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair the substations submitted as part of the Substation Minor Repair Group A (San Juan Area). This project is part of the Substation Minor Repair Program which has been broken down by regions.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix A which collectively provides the necessary consent for LUMA Energy, as the agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

Island wide substations experienced substantial damages due to Hurricane Maria in September 2017. This project is part of the Substation Minor Repair Program which will be impacting multiple assets through numerous municipalities. Similar documentation will be submitted for each respective program groups. The purpose of this project is to repair damages, mitigate flooding issues and harden the substation to improve the reliability and resiliency of the Puerto Rico electrical grid.

This project include the following Group C substation located in the Bayamon region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction

Río Bayamon Sectionalizer	1709/1720	[redacted]	[redacted]	March-1973

Project Scope of Work

Proposed 428 Public Assistance Scope of Work:

- Remove debris from the site and buildings, including damaged fencing, windows, doors, and other items as site preparation measure for construction works. No vegetative debris to be removed outside existing perimeter.
- Perform a cleanup for the Spill Prevention Control and Countermeasure (SPCC) of the transformers on site.
- Construction of a secondary oil containment for the transformers.
- Install approximately 585ft of perimeter fence and gates.
    - Fence posts will be installed to a maximum depth of 36” below final grade. Typical excavation will be 1’-0” in diameter and a maximum of 42” in depth.
    - Fence foundations will be built around the perimeter to a maximum depth of 36” below final grade. Typical excavation will be 4’-0” center to center and a maximum of 42” in depth.
- Perform control building repairs:
    - Paint control room including roof treatment cement plaster for ceiling where water damage is presented.
    - Replace doors and windows.
    - Install smoke detector, exhaust fan equipment, epoxy floor paint and fire extinguisher for the battery room.
    - Replace interior and exterior building lighting fixtures.
    - Repair bathroom including replacement of toilet, sink, and plumbing.
    - Replace eyewash and shower station.
- Paint existing louvers
- Install new exterior security lights.
- Install 3ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Repair substation driveway.
- Construction of a new driveway. Existing driveway to be demolished and disposed.
- Construct a curb wall to prevent gravel loss and erosion.
- Install manhole cover.
- Repair 1 wood distribution pole that has thermites around the substation yard.
- Install new drainage system for the substation site.
- Perform an integrity test on grounding connections and perform electrical soil resistivity measurements to analyze the existing grid layout using CDEGS software.
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material.
- Install within substation footprint new closed-circuit television (CCTV) system, including 8ea cameras, with their respective poles, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches:
    - Conduits for closed-circuit television (CCTV) system will be installed to a maximum depth of 42” below final grade from the control room to each pole with CCTV for power and communication.
- Construction of a new battery pit and paint with Epoxy floor paint on battery room
- Replace one 125VDC battery bank and associated equipment.

Structure Age

- Rio Bayamón Substation 1709 (115/13.2kV), was built on March 1973. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
    - Rio Bayamón 1720 (115/13.2kV) built on August 2013

Debris Removal

- The type of debris that may be found in the process of demolition are batteries, battery charges, concrete, metal scrap, domestic waste, wood, etc. The debris will be separated and taken to an approved waste disposal facility per LUMA Waste Management Plan.

Staging Area

- The main staging area will be located inside the premises of the substation and will serve as an assembly point for all the materials to be installed. See Appendix J

Equipment to be used.

- Skid Steer, Excavator, Dump trucks, Manlifts, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine, Flatbed platform, portable generators, and gas small tools.
- All equipment used will comply with Tier 4 EPA Emission Standards, if available

Fill, gravel, sand, etc.

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in Appendix K.

Hazardous Material

- The identified hazardous materials that can be found in the substation are asbestos and lead. If the presence of asbestos and lead is confirmed in the structures to be demolished, LUMA will follow all permits protocols required by law to properly remove and dispose of the hazardous materials from the premises.
- Material amounts will be provided by a certified management contractor performing a site evaluation calculation for asbestos and lead paint.

Ground disturbance

- All project construction activities will take place within the existing substation boundary that has been previously disturbed 30” below the surface for construction of the existing substation ground grid.

Specific List of Permits Required

- Permit Management Office of Puerto Rico (OGPe) OGPe Administrative Order 2021-07
- Bayamón Municipality Notification

- Department of Transportation of Public Works (DTOP) Excavation and Demolition Notification
- Department of Natural Resources Agency (DNRA) - If asbestos is present at the site, Asbestos Permit will be required.
- Department of Natural Resources Agency (DNRA) - If lead is present at the site, Lead Permit will be required.
- Consolidate General Permit or Incidental Single Permit for:
    - Emission Sources Permit
    - Hazardous Waste Disposal Plan – DNRA
    - Plan CES

For detailed information, please refer to APPENDIX F – Rio Bayamon Sectionalizer Engineering & Asset Management-Site Report and APPENDIX B Class III Estimate.

Additional details on Ground Grid studies, Ground Grid repairs, SPCC, and site grading will be included in the detailed engineering phase.

The scope of this project is only for the repairs and activities presented in this list within the Río Bayamón Sectionalizer 1709-1720 site. All

other scope including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network and high voltage equipment's may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary site detail assessment using LUMA engineering department and may be subject to change. LUMA has identified risks and allowances for the mitigation of potential known risks.

COST ESTIMATE	
Minor Repair Group C	**428**
PLANNING (FAASt 335168)	**$ 38,261.09**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 94,946.63**
MANAGEMENT	**$ 56,592.51**
SUBSTATION (Río Bayamón Sectionalizer)	**$632,977.52**
GENERAL CONDITIONS	**$ 78,761.55**
CONTINGENCY	**$ 65,772.20**
TOTAL PROJECT COST ESTIMATE	**$967,311.50**
FAASt PROJECT # 546371 Total	$777,511.27
FAASt A&E # 335168 Total	$189,800.23

Work to be completed: $967,311.50

A&E Deduction (Global A&E FAASt #335168): -$189,800.23

DI 920566 Total Cost: $777,511.27

406 HMP Scope

Project number: 546371 FAASt - Substation Minor Repairs Group C (Substation)

Damage #920566; FAASt- [Rio Bayamon Sectionalizer - 1709 & 1720]

Applicant: PR Electric Power Authority (000-UA2QU-00)

Location: Bayamon, Puerto Rico

GPS Latitude/Longitude: [redacted]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage "loss of power" from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants,

transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

The FAASt Substation Minor Repairs Group C (Substation) consists of 4ea facilities (sites) which are distributed as follows: Cana Sectionalizer-1710 & 1719, Hogar Crea Substation 1717, Naranjito Substation -9801 & 9802, Rio Bayamon Sectionalizer - 1709 & 1720.

The substation facilities minor repairs are typically composed of transformers, circuit breakers, disconnect switches, a control house, steel structures, poles, lights, and other components enclosed with a perimeter fence. The minor repair practices include facilities security upgrades (locks, fencing upgrade, CCTV), repair drainage, grading, and restoration of gravel, repair and replace the grounding grid, replace broken perimeter fence and gates, clean, and paint control room, replace lights, doors, and windows of the control room, replace battery charger and batteries, replace leaning or broken poles, among others. According to the information provided by the sub-applicant, due to the high hurricane winds, wind-borne debris, and prolonged heavy rain was the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the sub-applicant is proposing as a mitigation measure, reducing chain link fence post spacing from 10 feet to 8 feet to reinforce the fence and raise an additional 12" above grade to prevent erosion and strengthen the posts and fence, install a geosynthetic material between the sub-base soil and the new gravel to act as soil stabilization, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration in the control room, install new back-up power generator to provide continuous power to the circuits breakers that allow PREPA to operate the system remotely in the event of a distribution line failure, replace aluminum jalousie window by wind-resistant steel-louver windows, replace exterior steel doors by 16ga. fire rated steel door to reduce door damage due to wind-borne debris and high winds, and increase the strength of the CCTV poles from 90mph to +160mph sustained winds material to reduce pole damage due high winds. The above mitigation measures will protect and make the affected elements more resistant to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

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In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures *(Supplement)*

1. On the damaged chain link fence [8ft(H) plus barbed wire, 6 ga. 2" mesh, sch-40 1-5/8" top rail, 2.5" line post and 3" end post installed in a concrete footing (LUMA/PREPA Standard for Fencing)], instead of 10ft spacing between post, provide and install **(14ea)** new 2.5" x 11ft(H) sch-40 line post with barbed wire extension arm to reduce the spacing from 10ft to 8ft to increase the resistance against wind-borne debris, and high hurricane winds impacts and/or effects, **154 LF**.
2. Note: In order to comply with LUMA/PREPA codes and standards, each alternate pole is required to be grounded to the existing substation grounding grid.
    - Exothermic weld, 4/0 wire to 1" ground rod = **7 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **7 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **14 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **21 EA.**
    - Ground wire, copper wire, bare stranded, #4 = **21 LF.**
    - Ground wire, copper wire, bare stranded, 4/0 = **140 LF.**
1. Chain-link fence foundation wall will be raised an additional 12" [585ft(L) x 1ft(H) x 0.5ft(W)] above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, **10.8CY**.
2. Install **23,713 SF** of geosynthetic material between subbase soil and the new gravel as a new layer separator to act as a soil stabilization measure on all the areas where the gravel is used for traffic. This application will avoid the gravel contamination with the soil and minimizes the loss of depth due to pressure exerted by vehicles or equipment moving over for maintenance or testing.
3. On the control room roof, correct slope using tapered lightweight concrete to improve drainage and prevent water damages to the roof waterproofing system and water infiltration, **799 SF**.

6. To avoid damage to the battery bank by the discharge drainage effect, the Applicant is proposing as a mitigation measure, the installation of a **(1ea)** new Standby Emergency Power Generator [31.3KVA, 120/240V, aluminum enclosure, with an Automatic Transfer Switch (ATS)] that will provide continuous power to the circuits breakers that allow PREPA remotely operate the system in the event of a distribution line failure. This mitigation measures have the ability of recharge the batteries avoiding the battery discharge drainage effect and loss of function of the communication and control systems.

Mitigation Measures *(Replacement)*

7. On the damaged exterior single steel doors (3ft x 7ft), instead of 20ga., 90-minutes fire rated steel door, provide and install new 16ga., 90-minutes fire rated steel door to reduce the door damage due to wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **3 EA.**

8. On the damaged Replace (**8ea**) poles for closed-circuit television (CCTV) system. This measure will increase the strength of the poles by increasing the wind tolerance from 90mph to +160mph.

CCTV System - The installation of the cameras will help in the response phase. Hazard Mitigation funds are to eliminate, avoid or prevent a damage due to a natural hazard event such as hurricane winds, flooding, wind borne debris and others. HM funds are not intended for response improvement. Nevertheless, HM funds can be provided to harden the elements of the equipment installed through the recovery solution. At the meeting with the Applicant held on 7/12/22, it was agreed that the CCTV System (cameras) will be included in the 428 PA portion and not in 406 HM as initially proposed by the sub-applicant.

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) =	$ 75,171.73
+ HM (Applicant A&E, Management & General Conditions) =	$ 35,161.30
Hazard Mitigation Total Cost =	**$110,333.03**

HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects.". Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is $110,333.03 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

****See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents *(HMP, HMP cost estimate, Supporting documents file)*.**

Cost

Code	Quantity	Unit	Total Cost	Section
3510 (Engineering And Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($173,985.91)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (Contract - PREPA FAASt Project 136271)	1.00	Lump Sum	$886,714.27	Uncompleted
3510 (Engineering And Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($153,594.74)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (Contract - PREPA FAASt Project 136271)	1.00	Lump Sum	$782,791.27	Uncompleted
3510 (Engineering And Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($129,092.28)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (Contract - PREPA FAASt Project 136271)	1.00	Lump Sum	$657,915.18	Uncompleted
3510 (Engineering And Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($189,800.23)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (Contract - PREPA FAASt Project 136271)	1.00	Lump Sum	$967,311.50	Uncompleted

CRC Gross Cost	$2,648,259.06
Total 406 HMP Cost	$384,632.14
Total Insurance Reductions	$0.00
CRC Net Cost	$3,032,891.20
Federal Share (90.00%)	$2,729,602.08
Non-Federal Share (10.00%)	$303,289.12

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW-11478(14116)	$3,032,891.20	90 %	$2,729,602.08	8/21/2023

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

7/10/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 546371

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

Total Public Assistance Amount: $3,032,891.20 (CRC Gross Cost $2,648,259.06 + Mitigation Amount $384,632.14)

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: $300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount $25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is $0.00

The amount of the deductible previously funded in other projects is $25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: $0.00

***NUMBER* OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT:** (4)

Damaged Inventory (DI) #920561:

FAASt - Cana Sectionalizer-1710 & 1719

Location Description: Cana Sectionalizer-1710 & 1719

GPS Coordinates: [redacted]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: ”Sub-Stations”

SOV / Schedule Amount: $1,345,700,000.00

Applicable Deductible Amount: $25,000,000.00

Damage Inventory Amount: $808,917.33 (CRC Gross Cost $712,728.36 + Mitigation Amount $96,188.97)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of $193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: “*PREPA Allocation Plan – All Disasters”* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Cana Sectionalizer-1710 & 1719 - Building in the amount of $223,771.04 (CRC Gross Cost $712,728.36 – Uninsurable Items $375,674.20 – Equipment $149,758.67 – Contents $608.26 + Insurable Mitigation Amount $37,083.81). Please see “SP546371 – Cost Estimate – Insurance” file.

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Cana Sectionalizer-1710 & 1719 - Equipment in the amount of $172,225.00 (Equipment $149,758.67 + Insurable Mitigation Equipment $22,466.33). Please see “SP546371 – Cost Estimate – Insurance” file.

No Obtain & Maintain Requirement is being mandated for the FAASt - Cana Sectionalizer-1710 & 1719 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920562:

FAASt - Hogar Crea Substation 1717

Location Description: Hogar Crea Substation 1717

GPS Coordinates: [redacted]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: ”Sub-Stations”

SOV / Schedule Amount: $1,345,700,000.00

Applicable Deductible Amount: $25,000,000.00

Damage Inventory Amount: $728,238.73 (CRC Gross Cost $629,196.53 + Mitigation Amount $99,042.20)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of $193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Hogar Crea Substation 1717 - Building in the amount of $193,999.17 (CRC Gross Cost $629,196.53 – Uninsurable Items $332,690.52 – Equipment $138,582.17 – Contents $608.26 + Insurable Mitigation Amount $36,683.59). Please see "SP546371 – Cost Estimate – Insurance" file.

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Hogar Crea Substation 1717 - Equipment in the amount of $161,048.50 (Equipment $138,582.17 + Insurable Mitigation Equipment $22,466.33). Please see "SP546371 – Cost Estimate – Insurance" file.

No Obtain & Maintain Requirement is being mandated for the FAASt - Hogar Crea Substation 1717 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920564:

FAASt - Naranjito Substation -9801 & 9802

Location Description: Naranjito Substation -9801 & 9802

GPS Coordinates: [redacted]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Sub-Stations"

SOV / Schedule Amount: $1,345,700,000.00

Applicable Deductible Amount: $25,000,000.00

Damage Inventory Amount: $607,890.84 (CRC Gross Cost $528,822.90 + Mitigation Amount $79,067.94)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of $193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Naranjito Substation -9801 & 9802 - Building in the amount of $163,977.95 (CRC Gross Cost $528,822.90 – Uninsurable Items $258,742.45 – Equipment $133,829.17 – Contents $608.26 + Insurable Mitigation Amount $28,334.93). Please see "SP546371 – Cost Estimate – Insurance" file.

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Naranjito Substation -9801 & 9802 - Equipment in the amount of $156,295.50 (Equipment $133,829.17 + Insurable Mitigation Equipment $22,466.33). Please see "SP546371 – Cost Estimate – Insurance" file.

No Obtain & Maintain Requirement is being mandated for the FAASt - Naranjito Substation -9801 & 9802 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920566:

FAASt- Rio Bayamon Sectionalizer - 1709 & 1720

Location Description: Rio Bayamon Sectionalizer - 1709 & 1720

GPS Coordinates: [redacted]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Sub-Stations"

SOV / Schedule Amount: $1,345,700,000.00

Applicable Deductible Amount: $25,000,000.00

Damage Inventory Amount: $887,844.30 (CRC Gross Cost $777,511.27 + Mitigation Amount $110,333.03)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of $193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt- Rio Bayamon Sectionalizer - 1709 & 1720 in the amount of $232,178.35 (CRC Gross Cost $777,511.27 – Uninsurable Items $383,302.21 – Equipment $200,174.67 – Contents $608.26 + Insurable Mitigation Amount $38,752.22). Please see “SP546371 – Cost Estimate – Insurance” file.

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt- Rio Bayamon Sectionalizer - 1709 & 1720 - Equipment in the amount of $222,641.00 (Equipment $200,174.67 + Insurable Mitigation Equipment $22,466.33). Please see “SP546371 – Cost Estimate – Insurance” file.

No Obtain & Maintain Requirement is being mandated for the FAASt- Rio Bayamon Sectionalizer - 1709 & 1720 - Contents because insurable damages do not exceed $5,000.00.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant’s insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA’s Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1
PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

…

5. If an applicant has an insurance requirement from a previous event:

a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.

b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant’s anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

FEMA Policy 206-086-1
H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., “retained risk”).

…

4. If the applicant’s anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster, FEMA will reduce assistance by that amount in accordance with Section VII, Part 2(A) of this policy.

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed $5,000. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

a. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or

b. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do

this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Cana Sectionalizer-1710 & 1719 - Building in the amount of $223,771.04.	$223,771.04
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Cana Sectionalizer-1710 & 1719 - Equipment in the amount of $172,225.00.	$172,225.00
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Hogar Crea Substation 1717 - Building in the amount of $193,999.17.	$193,999.17
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Hogar Crea Substation 1717 - Equipment in the amount of $161,048.50.	$161,048.50
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Naranjito Substation -9801 & 9802 - Building in the amount of $163,977.95.	$163,977.95
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt - Naranjito Substation -9801 & 9802 - Equipment in the amount of $156,295.50.	$156,295.50
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt- Rio Bayamon Sectionalizer - 1709 & 1720 in the amount of $232,178.35.	$232,178.35
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt- Rio Bayamon Sectionalizer - 1709 & 1720 - Equipment in the amount of $222,641.00.	$222,641.00

406 Mitigation

There is no additional mitigation information on **FAASt-Substation Minor Repairs Group C (Substation)**.

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.

- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 - Floodplains - Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Endangered Species Act (ESA) - The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- Endangered Species Act (ESA) - Conservation measures apply to for Naranjito Substation -9801 & 9802 and Crea Substation 1717 Puerto Rican and Virgins Island Boas 1. Inform all personnel about the potential presence of the PR boa and the VI boa in areas where the proposed work will be conducted. Photographs of the PR and VI Boa are to be prominently displayed at the site. The recipient must ensure that project personnel is able to correctly identify a PR or VI boa. For information on PR boa, please visit: https://ecos.fws.gov/ecp/species/6628. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area must be delineated, buffer zones, and areas to be excluded and protected, should be clearly marked in the project plan and in the field to avoid further habitat degradation into forested areas. Once areas are clearly marked, and prior to any construction activity, including site preparation, project personnel able to correctly identify a PR or VI boa must survey the areas to be cleared to ensure that no boas are present within the work area. Vehicle and equipment operation must remain on designated access roads/paths and within rights-of way. 3. If a PR boa is found within any of the working or construction areas, activities should stop in the area where the boa was found. Do not capture the boa. If boas need to be moved out of harm's way, project personnel designated by the recipient shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #s: 787-724-5700, 787-230-5550, 787-771-1124). If immediate relocation is not an option, project-related activities at this area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue. 4. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the boa (PRDNER phone #s: 787-724-5700, 787-230-5550, 787-771-1124). If not possible, the animal should be left alone until it leaves the vehicle on its own. 5. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If PR boas are, found within debris piles, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future. 6. For all boa sightings (dead or alive), personnel designated by the recipient must record the time and date of the sighting and the specific location where the boa was found. Data should also include a photo of the animal dead or alive, and site GPS coordinates, and comments on how the animal was detected and its behavior. If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures had been implemented and what actions will be taken to avoid further killings. All boa-sighting reports should be sent to the USFWS Caribbean Ecological Services Field Office, Marelisa Rivera - Deputy Field Supervisor, 787-851-7297 extension 206, 787-510-5207, marelisa_rivera@fws.gov.
- National Historic Preservation Act (NHPA) - a. The Subrecipient and/or Subrecipient's contractor shall follow the Low Impact Debris Removal Stipulations (LIDRS) as stated in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022. b. Unexpected Discoveries: Pursuant to Stipulation III.B of the PSPA, if, in the course of implementing this Individual Undertaking(s), previously unidentified structures, sites, buildings, objects, districts, or archaeological deposits, that may be eligible for listing in the National Register, or human remains are uncovered, or if it appears that an Individual Undertaking has affected or will affect a previously identified historic property in an unanticipated manner, the contractor must notify Subrecipient who will immediately notify the Recipient. Work must stop in the vicinity of the discovery and measures must be taken to protect the discovery and avoid additional harm. c. Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to hardened surfaces can be provided at closeout.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) 1. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations,

and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. The applicant is responsible to ensure damaged transformers are handled, managed, and disposed of in accordance with all federal and state laws and requirements. Downed electrical equipment may contain toxic and hazardous materials, such as polychlorinated biphenyls (PCBs), and may spill these materials if a rupture occurs. Applicant is responsible for screening transformers that do or may contain PCBs and the area where any related spill occurred. The applicant is then responsible to handle, manage, dispose of, or recycle damaged equipment and contaminated soil as appropriate. Where possible, temporary measures should be implemented to prevent, treat, or contain further releases or mitigate the migration of PCBs into the environment. If damaged equipment or material storage containers must be stored temporarily, containers should be placed on hardened surface areas, such as a concrete or an asphalt for no more than 90 days. Excavated contaminated material should be disposed of in accordance with federal and state laws and requirements. 3. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

- NEPA Determination - All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a Sub-recipient or their contractor beginning borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at close-out and must include fill type (private, commercial, etc.), name, fill site GPS coordinates (not of the company/governmental office), address, and type of material.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt- Substation Minor Repairs Group C (Substation)**.

Final Reviews

Final Review

Reviewed By Amaro, Luis N. **Reviewed On** 07/28/2023 7:57 AM PDT

Review Comments

LNA 07/28/23. This project has been reviewed, found eligible and cost reasonable, and it is ready to continue the award process.

Recipient Review

Reviewed By Salgado, Gabriel **Reviewed On** 08/03/2023 6:34 PM PDT

Review Comments

Recipient review completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of $3,032,891.20 for subaward number 11478 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Miller, Thomas **Signed On** 08/10/2023