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 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) 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 A (Substation)"[3] T&D Project.

3. 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 A (Substation)" T&D Project SOW. The Energy Bureau also ordered LUMA to submit a 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.

4. On July 29, 2022, LUMA filed a *Motion Submitting Four Scopes of Work and Updated List of Projects and Request for Confidentiality and Supporting Memorandum Thirty-Eight Scopes of Work* whereby it submitted four (4) SOWs for the Energy Bureau's review and

[3] This T&D Project was submitted initially to the Energy Bureau as the "Substation Minor Repairs", which encompassed substation repairs projects throughout Puerto Rico but were later divided into individual projects per group.

approval prior to submitting them to COR3 and FEMA ("July 29th Motion"). The SOWs submitted by LUMA included the "Costa Sur TC – Phase II" T&D Project.

5. On August 25, 2022, 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 ("August 25th Order"). Therefore, it approved most of the projects presented in the July 29th Motion, including the "Costa Sur TC – Phase II" Project. The Energy Bureau also ordered LUMA to submit a 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.

6. On November 11, 2023, LUMA filed its *Motion Submitting Sixty Scopes of Work and Updated List of Projects and Request for Confidentiality and Supporting Memorandum*, whereby it submitted sixty (60) 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 "Guayanilla TC- New Substation TC" T&D Project.

7. On December 10, 2023, the Energy Bureau issued a Resolution and Order whereby it determined that all of the SOWs for T&D projects submitted by LUMA were necessary to improve the system's reliability ("December 10th Order"). The Energy Bureau also ordered LUMA to submit a 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. On December 28, 2023, LUMA submitted its *Informative Motion on Consolidated Scopes of Work and Request for Confidentiality and Supporting Memorandum of Law*, whereby it submitted four (4) consolidations of SOWs, which included the consolidation of the previously

approved "Costa Sur TC – Phase II" and "Guayanilla TC- New Substation TC" projects into the "FAASt [EPC - Costa Sur TC - Phase II & III] (Substation)" T&D Project.

9. On January 30, 2024, the Energy Bureau issued a Resolution by which it approved all four (4) consolidated SOWs submitted by LUMA, including the "FAASt [EPC - Costa Sur TC - Phase II & III] (Substation)" Project. ("January 30th Order"). The Energy Bureau also ordered LUMA to submit a 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.

10. In compliance with the September 22nd and January 30th Orders, LUMA hereby submits copies of Two (2) approvals by FEMA issued on February 13, 2024. [4] *See* **Exhibit 1** to this Motion. The document contains FEMA's approvals and includes the costs obligated for each Project.

11. LUMA is submitting herein a redacted public version of the FEMA approvals (**Exhibit 1**) protecting confidential information associated with Critical Energy Infrastructure Information ("CEII"). As explained in this Motion, portions of the FEMA approvals of the "FAASt - Substation Minor Repairs Group A (Substation)," and "FAASt [EPC - Costa Sur TC - Phase II & III] (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.

[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.

II. Memorandum of Law in Support of Request for Confidentiality

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

12. 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 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).

13. 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).

14. 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.

15. Moreover, the Energy Bureau's Policy on Management of Confidential Information details the procedures that 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.

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

> 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).

17. 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

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

19. 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

[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 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.

Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

20. 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, and Resolution and Order of May 5, 2023, *see* table 1 at page 3, and Resolution and Order of August 30, 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. Furthermore, this 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.

21. 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.

22. 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.

23. 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.*

24. 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]

[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

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]

25. Portions of The FEMA approvals in **Exhibit 1** qualify as CEII because each of these documents contains the express coordinates and physical addresses to power transmission and distribution facilities (18 C.F.R. § 388.113(iv)), and these specific coordinates and addresses 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

(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 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.

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.

26. Based on the above, LUMA respectfully submits that portions of the FEMA approvals 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.

C. Identification of Confidential Information

27. 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 - Substation Minor Repairs Group A (Substation)	Pages 1, 2, 3, 7, 9, 12, 14, 17, 19, 22, 25, 27, 34, 35, 36, and 37.	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	February 21, 2024

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 [EPC - Costa Sur TC - Phase II & III] (Substation)	Pages 1, 2, 11, and 16.	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	February 21, 2024

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 PREPA's General Counsel, Lionel Santa, lionel.santa@prepa.pr.gov, and to Genera PR LLC, through its counsel of record, Jorge Fernández-Reboredo, jfr@sbgblaw.com and Alejandro López Rodríguez, alopez@sbgblaw.com.

In San Juan, Puerto Rico, on this 21th day of February 2024.

DLA Piper (Puerto Rico) LLC
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Exhibit 1

Two (2) FEMA Approvals

Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	546370 **P/W #** 10858	**Project Type**	Specialized
Project Category	F - Utilities	**Applicant**	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt - Substation Minor Repairs Group A (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 #920546; FAASt -Covadonga Sectionalizer GIS -1011

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:** Covadonga Sectionalizer GIS -1011
- **Facility Description:** Covadonga Sectionalizer GIS -1011(4kV) 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 12.00/22.40 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 #920550; FAASt- Isla Grande Sectionalizer GIS- 1119

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:** Isla Grande Sectionalizer GIS- 1119
- **Facility Description:** Isla Grande Sectionalizer GIS- 1119 (13.2kV) 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 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 #920553; FAASt- Canovanas TC -2402

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:** Canovanas TC -2402
- **Facility Description:** Canovanas TC -2402 (13.2kV) 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 3 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 #920555; FAASt - La Muda Substation -1343

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:** La Muda Substation -1343
- **Facility Description:** La Muda Substation -1343 (4kV) 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 7.50/10.50 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 #920556; FAASt- Rio Piedras Heights Substation - 1345

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 Piedras Heights Substation - 1345
- **Facility Description:** Rio Piedras Heights Substation - 1345 (4kV) 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 7.50/11.30 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

Final Scope

920546

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 A 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 includes the following Group A substation located in the San Juan region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Constructior
Covadonga GIS	1011-1012 1013-1014	[redacted]	[redacted]	Oct-2002

Project Scope of Work

Covadonga GIS 1011

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.
- Perform a ground grid integrity test on grounding connections on the substation grid.
- Install approximately 492 ft of ornamental perimeter fence and gates.
- Perform control building repairs:
    - Paint control room including roof treatment and stairs and cement plaster for ceiling where water damage is presented.
    - Replace doors and rolling door.
    - Replace HVAC, smoke detector, and Exhaust Fan equipment.
    - Replace interior and exterior building lighting fixtures.
    - Paint existing louvers
    - Repair bathroom including replacement of toilet, sink, and plumbing.
        - Install acoustic tiles on approximately 249 square feet of ceiling.
- Install new exterior security lights.
- Replace eyewash and shower station.
- Replace safety hazard and safety equipment, including fire extinguishers, and substation signage.
- Install 7ea control room interior single doors with 90 minutes fire rated
- Install 1ea control room interior double doors with 90 minutes fire rated.
- Install 5ea new control house exterior double door (6ft x 7ft) 90-minutes fire-proof.

- Install 13ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Install 2ea new control house exterior motor operated rolling door (12ft x 14ft)
- Repair, clean and drain secondary oil containments for all four transformers. Install new SPCCs filters.
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material at the north side of the substation.
- 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 two (2) – 125VDC battery banks and associated charger.

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

Structure Age

- Covadonga Sectionalizer GIS was built in Oct-2002. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
    - Covadonga GIS 1011 (38KV/4.1kV) built on October 2002
    - Covadonga GIS 1012 (38KV/4.1kV) built on October 2002
    - Covadonga GIS 1013 (38KV/13.2kV - 4.1KV) built on October 2002
    - Covadonga GIS 1014 (38KV/13.2kV) built on October 2002

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 O.

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

- San Juan Municipality Endorsement
- Department of Transportation and Public Works Agency (DTOP) Endorsement
- Department of Transportation and Public Works Agency – (DTOP)- Excavation and Demolition Notification
- Erosion Control and Sedimentation Prevention Plan (Plan CES) - EQB / DNR (if exceed 40 cubic meters in an area of more than 900 meters)
- Asbestos Certification
- Lead Certification
- Waste Disposal Permit
- Spill Prevention Countermeasure Control Plan (SPCC)
- According to the environmental evaluation this substation is in a flood zone, whereby will require an evaluation of the applicability of Regulation 13 of the Planning Board (JP).

For detailed information, please refer to APPENDIX B – Covadonga GIS Engineering & Asset Management-Site Inspection Minor Repair Report and APPENDIX C 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 the Covadonga GIS site. All other scope, including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network, and high voltage equipment may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy, +30%/-20%) 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 A - Covadonga	**428**
PLANNING (FAASt 335168)	**$ 42,617.65**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 176,578.68**
MANAGEMENT (FAASt 335168)	**$ 101,711.23**
SUBSTATION	**$ 1,177,191.23**
GENERAL CONDITIONS	**$ 168,954.74**
CONTINGENCY	**$ 97,730.80**
TOTAL PROJECT COST ESTIMATE	**$ 1,764,784.33**
FAASt PROJECT # 546370, 428 Total	$ 1,443,876.77

FAASt A&E # 335168 Total	$	320,907.56

FEMA CRC Cost Summary, Version 0:

Work to be Completed: $1,764,784.33

A&E Deduction (Global A&E FAASt #335168): -$320,907.56

DI 920546 Total Cost: $1,443,876.77

Project 546370 Total, Sum of All DI Costs: $4,482,972.51

Project Notes:

1. Refer to detailed SOW provided in document *546370-DR4339PR-00 FEMA Detailed Scope of Work for Substation Minor Repairs -Group A Rev. 4 (2023-10-17) - signed.pdf* and *546370-DR4339PR-00 FEMA Detailed Scope of Work for Substation Minor Repairs -Group A Rev. 5 (2023-12-07) - signed.pdf.*

2. Refer to detailed cost estimate provided in document *546370-DR4339PR- 03 Appendix C - LPCE Group A Minor Repair LPCE (2023-09-12) Unprotected version.xlsx.*

3. For additional information, refer to the following attachments:

APPENDIX A- 546370-DR4339PR-01 APPENDIX A - Consent to Federal Funding - FEMA COR3

APPENDIX B- 546370-DR4339PR-02 APPENDIX B - Covadonga GIS Engineering & Asset Management-Site Inspection Minor Repair Report.

APPENDIX C- 546370-DR4339PR-03 APPENDIX C – Detailed Estimate

APPENDIX D- 546370-DR4339PR-04 APPENDIX D - Isla Grande GIS Engineering & Asset Management-Site Inspection Minor Repair Report.

APPENDIX E- 546370-DR4339PR-05 APPENDIX E - Canovanas TC Engineering & Asset Management-Site Inspection Minor Repair Report.

APPENDIX G- 546370-DR4339PR-07 APPENDIX G - La Muda Engineering & Asset Management-Site Inspection Minor Repair Report.

APPENDIX H- 546370-DR4339PR-08 APPENDIX H - Rio Piedras Heights Engineering & Asset Management- Site Inspection Minor Repair Report.

APPENDIX I- 546370-DR4339PR-09 APPENDIX I - Covadonga GIS Access Roads-Staging Area

APPENDIX J- 546370-DR4339PR-10 APPENDIX J - Isla Grande GIS Access Roads-Staging Area

APPENDIX K- 546370-DR4339PR-11 APPENDIX K - Canovanas TC Access Roads-Staging Area

APPENDIX M- 546370-DR4339PR-13 APPENDIX M - La Muda Substation Access Roads-Staging Area

APPENDIX N- 546370-DR4339PR-14 APPENDIX N - Rio Piedras Heights Substation Access Roads-Staging Area

APPENDIX O- 546370-DR4339PR-15 APPENDIX O - Prefered Vendor List Directory PR

APPENDIX P- 546370-DR4339PR-16 APPENDIX P - Waste Management Plan

APPENDIX Q- 546370-DR4339PR-17 APPENDIX Q - Project Specific Programmatic Agreement (PSPA)

APPENDIX R- 546370-DR-4339PR-18 APPENDIX R - Desktop Review Map Group A Covadonga, Isla Grande, Canovanas, Capuchinos, La Muda, Rio Piedras Heights Substation

APPENDIX S- 546370-DR4339PR-19 APPENDIX S - E.H.P CHECK LIST FOR Sub Minor Repair Program (only group A) ENV

APPENDIX T- 546370-DR4339PR-20 APPENDIX T- Existing Drawing Reference for Group A

APPENDIX U – 546370-DR4339PR-21 -APPENDIX U- PREPA Standard for Fencing

APPENDIX V- 546370- DR-4339PR-22-APPENDIX V-Land and Permit Evaluation (Substation Minor Repairs-Group A)

APPENDIX W – 546370-DR4339PR-23 -APPENDIX W - Rio Piedras Heights Soil Boring Plan

APPENDIX X – 546370-DR4339PR-24 - APPENDIX X - EHP Study Review Rio Piedras Heights 1345

406 HMP Scope

Project number: 546370 FAASt - Substation Minor Repairs Group A (Substation)

Damage # 920546; FAASt -Covadonga Sectionalizer GIS -1011

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

Location: San Juan, 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 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 A (Substation) consists of 5ea facilities (sites) which are distributed as follows: Covadonga Sectionalizer GIS -1011, Isla Grande Sectionalizer GIS- 1119, Canovanas TC -2402, La Muda Substation 1343, and Rio Piedras Heights Substation 1345.

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 the roof 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. Ornamental fence foundation wall will be raised an additional 12" [492ft(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, **9.1 CY.**
2. Install **4,887 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, **6,150 SF.**

4. 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 [30KW, 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 Applicant must consider that the substation is located less than a mile from the sea, so the exposed equipment and materials must be resilient to the environmental conditions.

Mitigation Measures *(Replacement)*

1. 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.
2. On the damaged exterior double steel doors (6ft 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, **5 EA**.
3. 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, **13 EA.**

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) = $66,434.88

+ HM (Applicant A&E, Management & General Conditions) = $30,755.73

Hazard Mitigation Total Cost = **$ 97,190.61**

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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 $97,190.61 (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).

920550 FAASt- Isla Grande Sectionalizer GIS- 1119

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 A 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 includes the following Group A substation located in the San Juan region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction
Isla Grande GIS	1119-1120 BANCO 1 BANCO 2	[redacted]	[redacted]	Jul-2005

Project Scope of Work

Isla Grande GIS 1119

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.
- Perform a ground grid integrity test on grounding connections on the substation grid.
- Perform control building repairs:
  - Paint control room including roof treatment and stairs and cement plaster for ceiling where water damage is presented.
  - Replace doors.
  - Replace HVAC, smoke detector, and Exhaust Fan equipment.
  - Replace interior and exterior building lighting fixtures.
  - Repair bathroom including replacement of toilet, sink, and plumbing.
  - Epoxy floor paint for battery room.
- Paint existing louvers
- Replace eyewash and shower station.
- Replace safety hazard and safety equipment, including fire extinguishers, and substation signage.
- Install 5ea control room interior single doors with 90 minutes fire rated.
- Install 1ea control room interior double doors with 90 minutes fire rated.
- Install 1ea new control house exterior double door (6ft x 7ft) 90-minutes fire-proof.
- Install 8ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Repair, clean and drain Spill Prevention Control and Countermeasure (SPCC) for all four transformers. Install new SPCCs filters.

- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material. Most of the substation site is in concrete.
- 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 two 125VDC battery banks and associated charger.

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

Structure Age

- Isla Grande Sectionalizer GIS was built in Jul-2005. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
    - Isla Grande GIS 1119 (115KV/13.2kV) built on July 2005
    - Isla Grande GIS 1120 (115KV/13.2kV) built on July 2005
    - Isla Grande GIS BANCO 1 (115KV/38kV) built on July 2005
    - Isla Grande GIS BANCO 2 (115KV/38kV) built on July 2005

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 O

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) Administrative Order 2021-07
- San Juan Municipality Endorsement
- Department of Transportation and Public Works Agency (DTOP) Endorsement
- Department of Transportation and Public Works Agency – (DTOP)- Excavation and Demolition Notification
- Erosion Control and Sedimentation Prevention Plan (Plan CES) - EQB / DNR (if exceed 40 cubic meters in an area of more than 900 meters)
- Asbestos Certification
- Lead Certification
- Waste Disposal Permit
- Spill Prevention Countermeasure Control Plan (SPCC)

For detailed information, please refer to: APPENDIX D – Isla Grande GIS Engineering & Asset Management-Site Inspection Minor Repair Report and APPENDIX C 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 within the Isla Grande GIS site. All other scope, including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network, and high voltage equipment may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy, +30%/-20%) 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 A - Isla Grande	**428**
PLANNING (FAASt 335168)	**$ 25,695.66**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 106,465.40**
MANAGEMENT (FAASt 335168)	**$ 61,325.22**
SUBSTATION	**$ 709,769.36**
GENERAL CONDITIONS	**$ 101,868.67**
CONTINGENCY	**$ 58,925.28**
TOTAL PROJECT COST ESTIMATE	**$ 1,064,049.59**
FAASt PROJECT # 546370, 428 Total	$ 870,563.31

FAASt A&E # 335168 Total	$ 193,486.28

FEMA CRC Cost Summary, Version 0:

Work to be completed: $1,064,049.59

A&E Deduction (Global A&E FAASt #335168): -$193,486.28

DI 920550 Total Cost: $870,563.31

406 HMP Scope

Project number: 546370 FAASt - Substation Minor Repairs Group A (Substation)

Damage # 920550; FAASt- Isla Grande Sectionalizer GIS- 1119

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

Location: San Juan, 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 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 A (Substation) consists of 5ea facilities (sites) which are distributed as follows: Covadonga Sectionalizer GIS -1011, Isla Grande Sectionalizer GIS- 1119, Canovanas TC -2402, La Muda Substation 1343, and Rio Piedras Heights Substation 1345.

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 the roof 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. Install **5,499 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, **4,154 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 [30KW, 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 Applicant must consider that the substation is located less than a mile from the sea, so the exposed equipment and materials must be resilient to the environmental conditions.

Mitigation Measures *(Replacement)*

1. 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.
2. On the damaged exterior double steel doors (6ft 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, **1 EA**.
3. 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, **8 EA.**

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) = $ 49,981.56

+ HM (Applicant A&E, Management & General Conditions) = $ 23,138.74

Hazard Mitigation Total Cost = **$ 73,120.30**

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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 $73,120.30 (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).

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 A 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 includes the following Group A substation located in the San Juan region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Construction
Canóvanas TC	2402-2404 BANCO 1 BANCO 2	[redacted]	[redacted]	May-1969

Project Scope of Work

Canóvanas TC

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.
- Perform a ground grid integrity test on grounding connections on the substation grid.
- Install approximately 915 ft 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 and stairs and cement plaster.
    - Replace doors and windows.
    - Replace HVAC, smoke detector, and Exhaust Fan equipment.
    - Replace interior and exterior building lighting fixtures.
    - Repair bathroom including replacement of toilet, sink, and plumbing.
    - Paint existing louvers.
    - Epoxy floor paint for battery room.
- Replace eyewash and shower station.
- Install new exterior security lights
- Replace safety hazard and safety equipment, including fire extinguishers, and substation signage

- Install 5ea new aluminum jalousie windows (36” x48”).
- Install 4ea control room interior single doors with 90 minutes fire rated
- Install 2ea new control house exterior double door (6ft x7ft) 90-minutes fire-proof.
- Design and construct a secondary containment to comply with Spill Prevention Control and Countermeasure (SPCC) for the four existing Transformers and add concrete wall to existing transformer concrete pads.
- 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 15ea 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 two 125VDC battery banks and associated charger.
- Remove, replace, and dispose of existing wood poles.

Proposed 406 Hazard Mitigation Grant Program Scope of Work (Refer to 406 Hazard Mitigation Profile)

Structure Age

- Canóvanas TC was built in May-1969. Along the time major apparatus were installed within the existing substation footprint considered as system improvements:
    - Canovanas TC 2402 (115KV/13.2kV) built on May 1969
    - Canovanas TC 2404 (115KV/13.2kV) built on September 1970
    - Canovanas TC BANCO 1 (115KV/38kV) built on March 2000
    - Canovanas TC BANCO 2 (115KV/38kV) built on Jun 2012

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 O.

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) Administrative Order 2021-07
- Canóvanas Municipalities Endorsement
- Department of Transportation and Public Works Agency (DTOP) Endorsement
- Department of Transportation and Public Works Agency – (DTOP)- Excavation and Demolition Notification
- Erosion Control and Sedimentation Prevention Plan (Plan CES) - EQB / DNR (if exceed 40 cubic meters in an area of more than 900 meters)
- Asbestos Certification
- Lead Certification
- Waste Disposal Permit
- Spill Prevention Countermeasure Control Plan (SPCC)

For detailed information, please refer to: APPENDIX E – Canóvanas TC Engineering & Asset Management- Site Inspection Minor Repair Report and APPENDIX C 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 within the Canóvanas TC site. All other scope, including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network, and high voltage equipment may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy, +30%/-20%) 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 A - Canóvanas	**428**
PLANNING (FAASt 335168)	**$ 33,514.63**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 138,862.93**
MANAGEMENT (FAASt 335168)	**$ 79,985.97**
SUBSTATION	**$ 925,746.19**
GENERAL CONDITIONS	**$ 132,866.44**
CONTINGENCY	**$ 76,8565.75**

TOTAL PROJECT COST ESTIMATE	$ 1,387,830.92
FAASt PROJECT # 546370, 428 Total	$ 1,135,468.39
FAASt A&E # 335168 Total	$ 252,362.53

FEMA CRC Cost Summary, Version 0:

Work to be completed: $1,387,830.92

A&E Deduction (Global A&E FAASt #335168): -$252,362.53

DI 920553 Total Cost: $1,135,468.39

406 HMP Scope

Project number: 546370 FAASt - Substation Minor Repairs Group A (Substation)

Damage #920553; FAASt- Canovanas TC -2402

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

Location: Canovanas, 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 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 A (Substation) consists of 5ea facilities (sites) which are distributed as follows: Covadonga Sectionalizer GIS -1011, Isla Grande Sectionalizer GIS- 1119, Canovanas TC -2402, La Muda Substation 1343, and Rio Piedras Heights Substation 1345.

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 the roof 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 (**23ea**) 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, **252 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 = **12 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **12 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **24 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **36 EA.**
    - Ground wire, copper wire, bare stranded, #4 = **40 LF**.
    - Ground wire, copper wire, bare stranded, 4/0 = **240 LF**

1. Chain-link fence foundation wall will be raised an additional 12" [915ft(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, **16.9 CY**.
2. Install **38,367 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, **1,600 SF.**
4. 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 [30KW, 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 Applicant must consider that the substation is located less than a mile from the sea, so the exposed equipment and materials must be resilient to the environmental conditions.

Mitigation Measures *(Replacement)*

1. On the damaged aluminum jalousie window (3ft x 4ft), instead of aluminum jalousie window, provide and install **(5ea)** new wind-resistant steel-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **60 SF**.
2. Replace (**15ea**) 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.
3. On the damaged exterior double steel doors (6ft 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, **2 EA.**

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) =	$113,193.39
+ HM (Applicant A&E, Management & General Conditions) =	$52,402.37
Hazard Mitigation Total Cost =	**$165,595.76**

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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 $165,595.76 (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).

920555 FAASt - La Muda Substation -1343

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 A 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 includes the following Group A substation located in the San Juan region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Constructior
La Muda	1343	[redacted]	[redacted]	Aug-1972

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.
- Perform a ground grid integrity test on grounding connections on the substation grid.
- Install approximately 433 ft 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 and stairs and cement plaster.
    - Replace doors and windows.
    - Replace smoke detector and Exhaust Fan equipment.
    - Replace interior and exterior building lighting fixtures.
    - Repair bathroom including replacement of toilet, sink, and plumbing.
- Replace eyewash and shower station.
- Replace safety hazard and safety equipment, including fire extinguishers, and substation signage
- Install 3ea new aluminum jalousie windows (36" x 48").
- Install 3ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Install 120 square feet of Transformer Spill Prevention Control and Countermeasure (SPCC) – note that there is a low concrete wall for existing transformer.
- 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 48VDC battery banks and associated charger.
- Remove, replace, and dispose of existing wood poles.

Proposed 406 Hazard Mitigation Grant Program Scope of Work (Refer to 406 Hazard Mitigation Profile)

Structure Age

- La Muda Substation was built in Ago-1972. Along the time no major apparatus were 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 O.

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) Administrative Order 2021-07
- San Juan Municipality Endorsement
- Department of Transportation and Public Works Agency (DTOP) Endorsement
- Department of Transportation and Public Works Agency – (DTOP)- Excavation and Demolition Notification
- Erosion Control and Sedimentation Prevention Plan (Plan CES) - EQB / DNR (if exceed 40 cubic meters in an area of more than 900 meters)
- Asbestos Certification
- Lead Certification
- Waste Disposal Permit
- Spill Prevention Countermeasure Control Plan (SPCC)

For detailed information, please refer to: APPENDIX G – La Muda Engineering & Asset Management-Site Inspection Minor Repair Report and APPENDIX C 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 within La Muda site. All other scope, including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network, and high voltage equipment may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy, +30%/-20%) 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 A - La Muda	**428**
PLANNING (FAASt 335168)	**$ 14,026.86**

ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 58,117.79**
MANAGEMENT (FAASt 335168)	**$ 33,476.47**
SUBSTATION	**$ 387,451.94**
GENERAL CONDITIONS	**$ 55,608.50**
CONTINGENCY	**$ 32,166.39**
TOTAL PROJECT COST ESTIMATE	**$ 580,847.94**
FAASt PROJECT # 546370, 428 Total	$ 475,226.82
FAASt A&E # 335168 Total	$ 105,621.12

FEMA CRC Cost Summary, Version 0:

Work to be completed: $580,847.94

A&E Deduction (Global A&E FAASt #335168): -$105,621.12

DI 920555 Total Cost: $475,226.82

406 HMP Scope

Project number: 546370 FAASt - Substation Minor Repairs Group A (Substation)

Damage #920555; FAASt - La Muda Substation -1343

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

Location: Guaynabo, 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 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 A (Substation) consists of 5ea facilities (sites) which are distributed as follows: Covadonga Sectionalizer GIS -1011, Isla Grande Sectionalizer GIS- 1119, Canovanas TC -2402, La Muda Substation 1343, and Rio Piedras Heights Substation 1345.

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 the roof 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 (**11ea**) 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, **119 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 = **6 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **6 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **12 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **18 EA.**
    - Ground wire, copper wire, bare stranded, #4 = **20 LF**.
    - Ground wire, copper wire, bare stranded, 4/0 = **120 LF**
1. Chain-link fence foundation wall will be raised an additional 12" [433ft(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, **8 CY**.
2. Install **4,691 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, **380 SF.**
4. 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 [30KW, 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 Applicant must consider that the substation is located less than a mile from the sea, so the exposed equipment and materials must be resilient to the environmental conditions.

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 steel-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **36SF**.
2. 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.

1. 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.**

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) = $57,506.76

+ HM (Applicant A&E, Management & General Conditions) = $26,622.50

Hazard Mitigation Total Cost = **$84,129.26**

-

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 $84,129.26 (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).

920556 FAASt- Rio Piedras Heights Substation - 1345

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 A 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 includes the following Group A substation located in the San Juan region:

Name	Substation Number	Physical Address	GPS Coordinate	Date of Constructior
Rio Piedras Heights	1345	[redacted]	[redacted]	Aug-1970

Project Scope of Work

Rio Piedras Heights Substation 1345

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.
- Perform a ground grid integrity test on grounding connections on the substation grid.
- Install approximately 315 ft 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 and stairs and cement plaster.
  - Replace doors.
  - Replace smoke detector and Exhaust Fan equipment.
  - Replace interior and exterior building lighting fixtures.
  - Repair bathroom including replacement of toilet, sink, and plumbing.
- Paint existing louvers
- Replace eyewash and shower station.
- Replace safety hazard and safety equipment, including fire extinguishers, and substation signage.
- Install exterior security lights
- Install 1ea control room interior single doors with 90 minutes fire rated
- Install 2ea new control house exterior single doors (3ft x 7ft) 90-minutes fire-proof.
- Repair existing Transformer Spill Prevention Control and Countermeasure (SPCC).——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
- Remove existing gravel, regrade terrain to ensure good drainage, and replace insulating gravel within substation over a geosynthetic material.
- Construction of a new battery pit and paint with Epoxy floor paint on battery room
- Replace one 48VDC battery banks and associated charger.
- Remove, replace, and dispose of existing wood poles.
- Repair erosion area.

Proposed 406 Hazard Mitigation Grants Program Scope of Work (Refer to 406 Hazard Mitigation Profile)

Structure Age

- Rio Piedras Heights Substation Ago-1970. Along the time no major apparatus were 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 O.

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.

Water Crossing

- Rio Piedras Heights- required to Identify per OGPe based on potential impact to water body (Regulatory Exception). Should have no impact with BMPs

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.

Soil Stabilization measures

- For Río Piedras Heights BMPs will be installed to prevent potential erosion and sedimentation into water body.

Specific List of Permits Required

- Permit Management Office of Puerto Rico (OGPe) Administrative Order 2021-07
- San Juan Municipality Endorsement
- Department of Transportation and Public Works Agency (DTOP) Endorsement
- Department of Transportation and Public Works Agency – (DTOP)- Excavation and Demolition Notification
- Erosion Control and Sedimentation Prevention Plan (Plan CES) - EQB / DNR (if exceed 40 cubic meters in an area of more than 900 meters)
- Asbestos Certification
- Lead Certification
- Waste Disposal Permit
- Spill Prevention Countermeasure Control Plan (SPCC)

For detailed information, please refer to: APPENDIX H – Rio Piedras Heights Engineering & Asset Management-Site Inspection Minor Repair Report and APPENDIX C 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 within the Rio Piedras Heights site. All other scope, including SCADA and RTU replacements, microwave point-to-point network, transport network, field area network, and high voltage equipment may be provided as part of separate projects in the future.

Project Estimate

The estimated costs (Class 3 Accuracy, +30%/-20%) 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 A - Río Piedras	**428**

PLANNING (FAASt 335168)	**$ 16,465.20**
ENGINEERING SERVICES & DESIGN (FAASt 335168)	**$ 68,220.62**
MANAGEMENT (FAASt 335168)	**$ 39,295.81**
SUBSTATION	**$ 454,804.11**
GENERAL CONDITIONS	**$ 65,275.13**
CONTINGENCY	**$ 37,757.98**
TOTAL PROJECT COST ESTIMATE	**$ 681,818.84**
FAASt PROJECT # 546370, 428 Total	$ 557,837.22
FAASt A&E # 335168 Total	$ 123,981.62

FEMA CRC Cost Summary, Version 0:

Work to be completed: $681,818.84

A&E Deduction (Global A&E FAASt #335168): -$123,981.62

DI 920556 Total Cost: $557,837.22

406 HMP Scope

Project number: 546370 FAASt - Substation Minor Repairs Group A (Substation)

Damage # 920556; FAASt- Rio Piedras Heights Substation - 1345

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

Location: San Juan, 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 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 A (Substation) consists of 5ea facilities (sites) which are distributed as follows: Covadonga Sectionalizer GIS -1011, Isla

Grande Sectionalizer GIS- 1119, Canovanas TC -2402, La Muda Substation 1343, and Rio Piedras Heights Substation 1345.

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 the roof 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 (**8ea**) 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, **87 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 = **4 EA.**
    - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **4 EA.**
    - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **8 EA.**
    - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **12 EA.**
    - Ground wire, copper wire, bare stranded, #4 = **10 LF**.
    - Ground wire, copper wire, bare stranded, 4/0 = **80 LF**
1. Chain-link fence foundation wall will be raised an additional 12" [315ft(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, **5.8 CY**.
2. Install **1,094 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, **216 SF.**
4. 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 [30KW, 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 Applicant must consider that the substation is located less than a mile from the sea, so the exposed equipment and materials must be resilient to the environmental conditions.

Mitigation Measures *(Replacement)*

1. 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.
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, **2 EA.**

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) = $46,595.48

+ HM (Applicant A&E, Management & General Conditions) = $21,571.17

Hazard Mitigation Total Cost = **$ 68,166.65**

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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 $68,166.65 (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 (v0 Enginering and Design Services Deduction - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($320,907.56)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (v0 Contract - PREPA FAASt Donor Project 136271)	1.00	Lump Sum	$1,764,784.33	Uncompleted
3510 (v0 Engineering and Design Services Deduction - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($193,486.28)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (v0 Contract - PREPA FAASt Donor Project 136271)	1.00	Lump Sum	$1,064,049.59	Uncompleted
3510 (v0 Engineering and Design Services Deduction - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($252,362.53)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (v0 Contract - PREPA FAASt Donor Project 136271)	1.00	Lump Sum	$1,387,830.92	Uncompleted
3510 (v0 Engineering and Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($105,621.12)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (v0 Contract - PREPA FAASt Donor Project 136271)	1.00	Lump Sum	$580,847.94	Uncompleted
3510 (v0 Engineering and Design Services - PREPA FAASt Global A&E 335168)	1.00	Lump Sum	($123,981.62)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (v0 Contract - PEPA FAASt Donor Project 136271)	1.00	Lump Sum	$681,818.84	Uncompleted

CRC Gross Cost	$4,482,972.51
Total 406 HMP Cost	$488,202.58
Total Insurance Reductions	$0.00
CRC Net Cost	$4,971,175.09
Federal Share (90.00%)	$4,474,057.59
Non-Federal Share (10.00%)	$497,117.50

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-10858(14741)	$4,971,175.09	90%	$4,474,057.58	2/12/2024

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

12/20/2023

No adjustments to be made to the previous insurance coverage determination, no revisions to narrative needed, updated applicant tracker if needed, providing administrative function and forwarding project for completion.

Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo P.R.

11/7/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 546370

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: $4,971,175.09 (CRC Gross Cost $4,482,972.51 + Mitigation Amount $488,202.58)

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:** (5)

Damaged Inventory (DI) #920546:

FAASt -Covadonga Sectionalizer GIS -1011

Location Description: Covadonga Sectionalizer GIS -1011

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: $1,541,067.38 (CRC Gross Cost $1,443,876.77 + Mitigation Amount $97,190.61)

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 -Covadonga Sectionalizer GIS -1011 in the amount of $961,395.45 (CRC Gross Cost $1,443,876.77 – Uninsurable Items $342,122.40 – Equipment $197,831.00 – Contents $845.65 + Insurable Building Mitigation Amount $58,317.73). Please see “SP546370 – Cost Estimate – Insurance 1” 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 -Covadonga Sectionalizer GIS -1011 in the amount of $222,420.00 (Equipment $197,831.00 + Insurable Equipment Mitigation Amount $24,589.00). Please see “SP546370 – Cost Estimate – Insurance 1” file.

No Obtain & Maintain Requirement is being mandated for the FAASt -Covadonga Sectionalizer GIS -1011- Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920550:

FAASt- Isla Grande Sectionalizer GIS- 1119

Location Description: Isla Grande Sectionalizer GIS- 1119

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: $943,683.61 (CRC Gross Cost $870,563.31 + Mitigation Amount $73,120.30)

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- Isla Grande Sectionalizer GIS- 1119 in the amount of $560,510.37 (CRC Gross Cost $870,563.31 – Uninsurable Items $140,655.52 – Equipment $206,987.99 – Contents $845.65 + Insurable Building Mitigation Amount $38,436.22). Please see "SP546370 – Cost Estimate – Insurance 1" 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- Isla Grande Sectionalizer GIS- 1119 in the amount of $231,576.99 (Equipment $206,987.99 + Insurable Equipment Mitigation Amount $24,589.00). Please see "SP546370 – Cost Estimate – Insurance 1" file.

No Obtain & Maintain Requirement is being mandated for the FAASt- Isla Grande Sectionalizer GIS- 1119 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920553:

FAASt- Canovanas TC -2402

Location Description: Canovanas TC -2402

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: $1,301,064.15 (CRC Gross Cost $1,135,468.39 + Mitigation Amount $165,595.76)

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- Canovanas TC -2402 in the amount of $336,759.20 (CRC Gross Cost $1,135,468.39 – Uninsurable Items $627,227.79 – Equipment $232,804.00 – Contents $608.26 + Insurable Building Mitigation Amount $61,930.86). Please see "SP546370 – Cost Estimate – Insurance 1" 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- Canovanas TC -2402 in the amount of $257,393.00 (Equipment $232,804.00 + Insurable Equipment Mitigation Amount $24,589.00). Please see "SP546370 – Cost Estimate – Insurance 1" file.

No Obtain & Maintain Requirement is being mandated for the FAASt- Canovanas TC -2402 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920555:

FAASt - La Muda Substation -1343

Location Description: La Muda Substation -1343

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: $559,356.08 (CRC Gross Cost $475,226.82 + Mitigation Amount $84,129.26)

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 - La Muda Substation -1343 in the amount of $150,290.61 (CRC Gross Cost $475,226.82 – Uninsurable Items $267,642.44 – Equipment $88,587.50 – Contents $608.26 + Insurable Building Mitigation Amount $31,901.99). Please see "SP546370 – Cost Estimate –

Insurance 1" 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 - La Muda Substation -1343 in the amount of $113,176.50 (Equipment $88,587.50 + Insurable Equipment Mitigation Amount $24,589.00). Please see "SP546370 – Cost Estimate – Insurance 1" file.

No Obtain & Maintain Requirement is being mandated for the FAASt - La Muda Substation -1343 - Contents because insurable damages do not exceed $5,000.00.

Damaged Inventory (DI) #920556:

FAASt- Rio Piedras Heights Substation - 1345

Location Description: Rio Piedras Heights Substation - 1345

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: $626,003.87 (CRC Gross Cost $557,837.22 + Mitigation Amount $68,166.65)

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 Piedras Heights Substation - 1345 in the amount of $159,615.78 (CRC Gross Cost $557,837.22 – Uninsurable Items $333,658.33 – Equipment $87,587.50 – Contents $529.13 + Insurable Building Mitigation Amount $23,553.52). Please see "SP546370 – Cost Estimate – Insurance 1" 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 Piedras Heights Substation - 1345 in the amount of $112,176.50 (Equipment $87,587.50 + Insurable Equipment Mitigation Amount $24,589.00). Please see "SP546370 – Cost Estimate – Insurance 1" file.

No Obtain & Maintain Requirement is being mandated for the FAASt- Rio Piedras Heights Substation – 1345 - 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 -Covadonga Sectionalizer GIS -1011 in the amount of $961,395.45.	$961,395.45
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 -Covadonga Sectionalizer GIS -1011 in the amount of $222,420.00.	$222,420.00

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- Isla Grande Sectionalizer GIS- 1119 in the amount of $560,510.37.	$560,510.37
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- Isla Grande Sectionalizer GIS- 1119 in the amount of $231,576.99.	$231,576.99
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- Canovanas TC -2402 in the amount of $336,759.20.	$336,759.20
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- Canovanas TC -2402 in the amount of $257,393.00.	$257,393.00
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 - La Muda Substation - 1343 in the amount of $150,290.61.	$150,290.61
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 - La Muda Substation -1343 in the amount of $113,176.50.	$113,176.50
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 Piedras Heights Substation - 1345 in the amount of $159,615.78.	$159,615.78
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 Piedras Heights Substation - 1345 in the amount of $112,176.50.	$112,176.50

406 Mitigation

There is no additional mitigation information on **FAASt - Substation Minor Repairs Group A (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.
- Clean Air Act (CAA): Applicant is required to obtain a Source of Emission Permit (PFE) from Puerto Rico Department of

Natural and Environmental Resources (PR DNER) or General Permit for Emergency Power Generators (PG-GE) from the PR Office of Permits Management (OGPe) prior to construction and operation of the proposed source of emissions. Documentation of DNER and other state, local or federal guideline compliance, may be required as a condition of closeout.

- National Historic Preservation Act (NHPA): 1. 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. 2. 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. 3. 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.
- 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. 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 A (Substation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L. **Reviewed On** 01/03/2024 6:32 AM PST

Review Comments

SubFAASt project has been reviewed, found eligible and reasonable. It is ready to continue with the award process. - CLG

Recipient Review

Reviewed By Salgado, Gabriel **Reviewed On** 01/12/2024 3:40 AM PST

Review Comments

Recipient review completed. Applicant must ensure to compliance with all regulatory requirements and PA policy. 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 $4,971,175.09 for subaward number 10858 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** 01/12/2024

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Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	682834 **P/W #** 11402	**Project Type**	Specialized
Project Category	F - Utilities	**Applicant**	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [EPC - Costa Sur TC - Phase II & III] (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 #1242532; FAASt [Costa Sur TC – Phase II]

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:** Costa Sur TC – Phase II
- **Facility Description:** Costa Sur SP TC is a generation plant and transmission center that includes a control house, breakers, transformers, structures, cables, surge arresters, and other related components in a fenced yard. The Costa Sur TC switchyard consists of facilities that operate at nominal voltages of 230 kV, 115 kV and 38 kV. It includes: ? Fifteen (15) 230 kV circuit breakers: o Eleven (11) oil circuit breakers (OCBs) o Four (4) gas circuit breakers (GCBs) ? Two (2) generation units connected to the 230 kV buses ? One (1) 230/115 kV, 328/436/544 MVA autotransformer ? One (1) 230/115 kV, autotransformer, out of service ? Twenty-four (24) 115 kV circuit breakers o Nineteen (19) oil circuit breakers (OCBs) o Five (5) gas circuit breakers (GCBs) ? Two (2) 115/38 kV, 60/80/100/112 MVA power transformers ? Twenty-two (22) 38 kV oil circuit breakers (OCBs)
- **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

1242532 **FAASt Costa Sur TC – Phase II**

INTRODUCTION

The purpose of this document is to submit to COR3 and FEMA the detailed Scope of Work ("SOW") for the Costa Sur Substation repair. This facility was damaged by the strong winds and heavy rainfall during the atmospheric event Maria, a Category 4 hurricane that occurred during the period of Sep 17, 2017, to Nov 15, 2017.

Puerto Rico Electric Power Authority (PREPA) Intend to restore this facility to its pre-disaster design, function and capacity per applicable codes and standards, with the addition of a new facility (New Guaypao) proposed in this SOW. PREPA is seeking SOW approval from COR3 and FEMA, to receive Public Assistance under DR-4339PR.

This document provides a description of the project focusing only on the new facility, including a detailed scope of work, cost estimates as well as Environmental & Historical Preservation ("EHP") relevant information.

LUMA Energy provides the Operations and Maintenance of the electric service to the entire island of Puerto Rico. Puerto Rico Electric Power Authority (PREPA) is the agency that owns the facilities, sites, and systems identified in this Scope of Work that are eligible as critical services facilities as defined in the PAAP (Section 428) and BBA 2018 guidance document.

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

TYPE OF PROJECT:

Restoration to Codes/Standards.
This work will be in compliance with FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020)

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

FACILITIES

Costa Sur Power Plant - Transmission Center (FAASt # 169896) is a generation plant and transmission center that includes a control house, breakers, transformers, structures, cables, surge arresters, and other related components in a fenced yard severely affected by Hurricane Maria. Costa Sur TC has been proven to have great cascading impact on the Puerto Rico transmission network due to its size and the importance of the generators connected to its grid. Because of this impact, it was recommended, a reconfiguration of this critical transmission station into two stations, in order to restore the Costa Sur Power Plant to its pre disaster function and capability complying with up-to-date industry standards.

Name	Description	GPS Coordinates	Voltage (kV)	Construction Year
Costa Sur Power Plant - Transmission Center	Damaged facility	[redacted]	230 kV, 115 kV & 38kV.	1973

PROJECT SCOPE OF WORK

I. Phase II- Costa Sur Existing Substation Rebuild

Scope Summary:

This phase includes the 38 kV and 115 kV reconstruction work in their respective existing yards, within the existing Costa Sur facility. Major work to be performed in phase 2 includes:

A. Replacement of the existing infrastructure and transmission breakers according to the new proposed 115 kV single line diagram with a gas insulated switchgear (GIS) in breaker-and-a-half configuration.

B. Replacement of the existing infrastructure and transmission breakers according to the new proposed 38 kV single line diagram, with a gas insulated switchgear (GIS) in breaker-and-a-half configuration.

C. Replace the 230 supply cables for autotransformer Bank #1.

D. Flood mitigation for 115 kV and 38 kV sites due to flood zone location (ABFE Flood Zone A).

E. Construction of new control facilities for 115 kV and 38 kV to include protection, control, and metering equipment. (60 FT x 30 FT)

F. Replace the existing Bank #1: 115/38 kV, 60/80/100/112 MVA transformer with a new one since it has been in service since 1991 and is reaching the end of its useful life. The impedance of this transformer shall be like the existing one.

G. Replace the existing Bank #2: 115/38 kV, 60/80/100/112 MVA transformer with a new one. This bank has 30 years of service and will be kept as an on-site spare in a pad. H. All transformers to comply with flooding mitigation.

I. Provide a spare 230/115 kV transformer on a pad on site.

J. Emergency Generator needed at site. (Generator pad size 7FT x 4 FT).

K. Low sides of the 230/115 kV autotransformers shall be connected to different bays and different adjacent buses to increase system reliability under contingencies at either bus.

Scope of work:

A. Construction Startup

1. Provide 12 month of Site preparation and monitoring of CES Plan.
2. Provide 10 Ea. of Concrete Break Test (if needed).
3. Provide 2 Ea. of Mobilization & Demobilization.
4. Provide and install 1 Ea. of Oil Containment Pit and the oil value pit (if need)
5. Provide and install 1 Ea. of Public Storm Utility Drainage Piping & Sewage.

B. Supervisory Control and Data Acquisition (SCADA).

1. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #14-7 conductor.
2. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #12-9 conductor.
3. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #12-12 conductor.
4. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-4 conductor.
5. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-7 conductor.
6. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-12 conductor.
7. Provide and install 10 C.L.F. of Coaxial cable, 50-ohm, RG A/U #58 cable.
8. Provide and install 1 Ea. of Annunciator Panel.
9. Provide and install 14 Ea. of Programmable Automation Controller.
10. Provide and install 1 Ea. of Discrete Programmable Automation Controller (DPAC), Horizontal Rack mount, 125Vdc/Vac.
11. Provide and install 1 Ea. of Satellite Synchronized Network Clock, Horizontal Rack mount, 125Vdc or Vac.
12. Provide and install 3 Ea. of RTD Temperature Transmitter.
13. Provide and install 1 Ea. of Ethernet Switch.
14. Provide and install 1 Ea. of Real Time Automation controller, 3U Horizontal Rack mount.
15. Provide and install 1 Ea. of Ethernet Security Gateway.
16. Provide and install 45 Ea. of Protection, Automation, and Bay Control System.
17. Provide and install 3 Ea. of Feeder Protection Relay, 5-inch color touchscreen with 8 push buttons, 110-250Vdc (110-240Vac).
18. Provide 31 Ea. of Remote Data Acquisition I/O Module.
19. Provide and install 13 Ea. of Transformer Differential Relay with conventional secondary inputs, standard with voltage, frequency, directional overcurrent and Volts-per-hertz elements, 125-250VDC or 110-240Vac.
20. Provide and install 10 Ea. of Bus Differential and Breaker Failure Relay.

21. Provide and install 2 Ea. of Overcurrent Protection Relay, with conventional secondary inputs 125-250Vdc or 110240Vac.
22. Provide and install 1 Ea. of Touchscreen monitor kit (19in ELO monitor PN: E331019, Display Port VGA HDMI, Rack Mount Bracket, 120/240Vac, 125/250Vdc) .
23. Provide and install 2 Ea. of multi-circuit testing of switchboard relays Full length, Clear cover, for 19 IN rack.
24. Provide and install 3 Ea. of Meter switchboard 128MB, 9S/29S/36S, 60Hz.
25. Provide and install 6 C.L.F. of Wire, copper, stranded, 600 volt, 2/0, type THW, normal installation conditions in wireway, conduit, cable tray.
26. Provide and install 1 C.L.F. of Wire, copper, stranded, 600 volt, 4/0, type THW, normal installation conditions in wireway, conduit, cable tray.
27. Provide and install 1 Ea. of Power Supply PS 100-240VAC_24DC.
28. Provide and install 1 Ea. of DC Distribution Panel 12/24/48VDC Dual Bus 1RU.
29. Provide and install 1 Ea. of Power supply 30W 12VDC.
30. Provide and install 1 Ea. of Interface Module terminal to DB9 communication.
31. Provide and install 12 Ea. of AGM pack 48VDC battery.
32. Provide and install 2 Ea. of Fuses, cartridge, nonrenewable, 250 V, 30 amp.
33. Provide and install 2 Ea. of GE 400A Infinity-S Dual Molex LVBD.
34. Provide and install 1 Ea. of Integrated Communications Optical Network.
35. Provide and install 23 Ea. of Relay Cabinet, SCADA cabinet, Telecom cabinet.
36. Provide and install 2000 C.L.F. of Fiber optic cable, 12 strand, multi-mode.
37. Provide and install 2000 C.L.F. of Fiber optic cable, 12 strand, single mode.
38. Provide and install 3 Ea. of Fiber optic patch panel, 12 ports.
39. Provide and install 2000 L.F. of Fiber optics cable, 50 microns, 12 fibers, indoor.
40. Provide and install 3 Ea. of Fiber optic closet connector housing holds 12 CCH connector panels.
41. Provide and install 12 Ea. of Fiber optic CCH splice cassette.
42. Provide and install 3 Ea. of Fiber optic Rear mounted SM Opti tip 1RU.
43. Provide and install 1 Ea. of GE Critical Power NE050AC48ATEZ 50A Rectifier.
44. Provide and install 1 Ea. of SCADA Panel.
45. Provide and install 1 Ea. of Internal Panel Wiring.
46. Provide and install 1 Ea. of Conversion equipment, battery chargers 480 Vac / 130 vdc.
47. Provide and install 1 Ea. of Battery, deep cycle, 400Ah, 125V.

C. Telecommunication

1. Provide and install 1 Ea. of Rack mount USB, Keyboard/Drawer with mouse.
2. Provide and install 100 Ea. of Terminal Block 12 positions.
3. Provide and install 3 Ea. of Expansion Switch.
4. Provide and install 3 Ea. of Industrial Ethernet switch.
5. Provide and install 3 Ea. of Industrial Security Appliance Switch.
6. Provide and install 1 Ea. of KVM switch 2 USB ports.
7. Provide 1 Ea. of Data media converter module.
8. Provide and install 4 Ea. of Switching and routing equipment, network switch, 10/100/1000/10000 Mbps, 28 port, Industrial Ethernet, rear ports.
9. Provide and install 5 Ea. of Telecom Panels.
10. Provide and install 1 Ea. of Network Router multiport.
11. Provide and install 4 Ea. of Industrial 24 port switch.
12. Provide and install 2 M.L.F. of Medium-cable single cable, copper, XLP shielding, 15 kV, 500 kcmil, pulled in duct, excl splicing & terminations.
13. Provide material handling & spotting for 1 W. Mile of Overhead line conductors & devices, conductors, primary circuits.
14. Provide 1 W. Mile of Overhead line conductors & devices, conductors, primary circuits, per wire, 210 to 636 kcmil.
15. Provide and install 18 C.Y. of Cable Bridge (galvanized steel, 24 IN W grip-strut channel, universal cantilevers and pipe columns).
16. Provide and install 18 L.F. of Concrete Foundation for Cable Bridge Steel Column 3500psi (8 IN wide).
17. Provide and install 1 Ea. of Communications transmission tower, radio towers self-supporting, wind load 70 mph basic wind speed, 120 FT high.
18. Provide and install 1 Ea. of Networks microwave radio, Antenna.
19. Provide 5 Ea. of Testing and Commissioning for Telecom.

D. Physical Electrical

1. Provide and install 120 Ea. of Switchboards, distribution section, copper bus bars, 4 W, 120/208 or 277/480 V, 1,600 amp, excl breakers.
2. Provide and install 50 Ton of Structural steel project, monumental structures, banks, stores, etc., 100-ton project, A992 steel, shop fabricated, incl shop primer, simple connections.
3. Provide 50 C.Y. of Structural concrete, in place, column (4000 psi), square, up to 3% reinforcing by area, 12 IN x 12 IN, includes forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing.
4. Provide and install 30 Ea. of Disconnecting switches, gang motor operation, 115 kV, rated 3K Amp with GND Blade.

5. Provide and install 30 Ea. of Disconnecting switches, gang manual operation, 38 kV, rated 3K Amp.
6. Provide and install 20 Ea. of GANG motor operation Control.
7. Provide and install 15 Ea. of Substation equipment, gas circuit breakers, 161 kV.
8. Provide and install 15 Ea. of Substation equipment, gas circuit breakers, 46 kV.
9. Provide and install 18 Ea. of Potential transformers, 46 kV, Ritz Instrument Transformers VEF48-01.
10. Provide and install 138 Ea. of Insulators, pedestal type.
11. Provide and install 9 Ea. of 115-230 kV Dead End Suspension Insulator Bells, 3 phases, 6 Bells Per phase (18 Bells).
12. Provide and install 6 Ea. of Lightning arresters, 230 kV.
13. Provide and install 180 Ea. of Overhead line conductors & devices, conductors, primary circuits, make and install jumpers, per structural, 69 kV.
14. Provide and install 180 Ea. of Overhead line conductors & devices, conductors, primary circuits, clipping, per structure, 69 kV.
15. Provide and install 1 Ea. of Transformer 230/115 kV – 544 MVA.
16. Provide and install 2 MVA of TRANSFORMER 115/40 kV, 101 / 134 / 168 MVA.

E. Civil Structural

1. Provide, install, and remove1000 L.F. of Erosion control, straw bale, 3 FT Long.
2. Provide 1000 L.F. of Electrical underground ducts and manholes, underground duct banks, PVC, 4 @ 6 IN diameter, excludes excavation, backfill, and cast in place concrete.
3. Provide 1000 L.F. of Electrical underground ducts and manholes, underground duct banks ready for concrete fill, PVC, type EB, 2 @ 3 IN diameter, excludes excavation, backfill, and cast in place concrete.
4. Provide 1000 L.F. of Electrical underground ducts and manholes, underground duct banks ready for concrete fill, PVC, type EB, 1 @ 2 IN diameter, excludes excavation, backfill, and cast in place concrete.
5. Provide 340 C.Y. of Electrical underground ducts and manholes, underground duct banks, for cast-in-place concrete, over 5 C.Y., excludes excavation, backfill, and cast in place concrete, add.
6. Provide 8 Ea. of Electrical underground ducts and manholes, manholes, precast w/iron racks & pulling irons, C.I. frame and cover, 16 FT x 8 FT x 8 FT deep, excludes excavation, backfill, and cast in place concrete.
7. Provide 340 B.C.Y. of Backfill, bulk, 6 IN to 12 IN lifts, dozer backfilling, compaction with vibrating roller.
8. Provide 340 C.Y. of Structural concrete, ready mix, heavyweight, 3000 psi, includes local aggregate, sand, Portland cement (Type I) and water, delivered, excludes all additives and treatments.
9. Provide 340 C.Y. of Structural concrete, placing, continuous footing, shallow, direct chute, includes leveling (strike off) & consolidation, excludes material.
10. Provide excavation for670 B.C.Y. of trench or continuous footing, loam, or sandy clay, 1/2 C.Y. excavator, 4 FT to 6 FT deep, excludes sheeting or dewatering.
11. Provide 340 C.Y. of Dewatering, excavate drainage trench, with backhoe, 2 FT wide x 3 FT deep.
12. Provide and install 120 C.L.F. of Wire, copper, stranded, 600 volt, 750 Kamil, type XLPE-USE (RHW), normal installation conditions in wireway, conduit, cable tray.
13. Provide and install 1 Ea. of PEC Steel Building Frame Size L X W x H: 45 FT x 30 FT x 12 FT.
14. Provide, install, and remove2500 L.F. of Erosion control, straw bale, 3 FT Long.
15. Provide 2500 L.F. of Electrical underground ducts and manholes, underground duct banks, PVC, 4 @ 6 IN diameter, excludes excavation, backfill, and cast in place concrete.
16. Provide 2500 L.F. of Electrical underground ducts and manholes, underground duct banks ready for concrete fill, PVC, type EB, 2 @ 3 IN diameter, excludes excavation, backfill, and cast in place concrete.
17. Provide 2500 L.F. of Electrical underground ducts and manholes, underground duct banks ready for concrete fill, PVC, type EB, 1 @ 2 IN diameter, excludes excavation, backfill, and cast in place concrete.
18. Provide 840 C.Y. of Electrical underground ducts and manholes, underground duct banks, for cast-in-place concrete, over 5 C.Y., excludes excavation, backfill, and cast in place concrete, add.
19. Provide 25 Ea. of Electrical underground ducts and manholes, manholes, precast w/iron racks & pulling irons, C.I. frame and cover, 16 FT x 8 FT x 8 FT deep, excludes excavation, backfill and cast in place concrete.
20. Provide 840 B.C.Y. of Backfill, bulk, 6 IN to 12 IN lifts, dozer backfilling, compaction with vibrating roller.
21. Provide 840 C.Y. of Structural concrete, ready mix, heavyweight, 3000 psi, includes local aggregate, sand, Portland cement (Type I) and water, delivered, excludes all additives and treatments.
22. Provide 840 C.Y. of Structural concrete, placing, continuous footing, shallow, direct chute, includes leveling (strike off) & consolidation, excludes material.
23. Provide excavation for2500 B.C.Y. of trench or continuous footing, loam or sandy clay, 1/2 C.Y. excavator, 4 FT to 6 FT deep, excludes sheeting or dewatering.
24. Provide 840 C.Y. of Dewatering, excavate drainage trench, with backhoe, 2 FT wide x 3 FT deep.
25. Provide and install 300 C.L.F. of Wire, copper, stranded, 600 volt, 1,000 kcmil, type XLPE-USE (RHW), normal installation conditions in wireway, conduit, cable tray.

F. Grounding

1. Provide and install 40 Ea. of Exothermic weld, to building steel, 4/0 wire.
2. Provide and install 210 EA of 3/4 IN Ground Rods (10 feet).
3. Provide and install 5 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, parallel, vertical.
4. Provide and install 32 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, splice single.

5. Provide and install 32 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, termination, Tee.
6. Provide and install 32 Ea. of Exothermic weld, exothermic welding reusable mold, cable to rod, termination, Tee.
7. Provide and install 32 Ea. of Exothermic weld, exothermic welding reusable mold, cable to rod, termination, 90 Deg.
8. Provide 84 EA of Welding material, 115. 9. Provide 84 EA of Welding material, 150. 10. Provide 84 EA of Welding material, 200.
9. Provide and install 112 EA of Ground Plate (conductor size #4, length = 96 IN, width=72 IN).
10. Provide and install 210 FT of Bonding strap, 231.552 Kamil (Flexible copper braided #4/0 equivalent).
11. Provide and install 210 EA of Cable strap, 4/0 (#T&B 1347).
12. Provide and install 4 Ea. of Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 8,000-gallon, incl. pad & pump.
13. Provide 230 C.Y. of Structural concrete, in place, free-standing wall (3000 psi), 12 IN thick x 8 FT high, includes forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing.
14. Provide 190 C.Y. of Structural concrete, in place, free-standing wall (3000 psi), 15 IN thick x 18 FT high, includes forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing.
15. Provide and install 25 L.F. of Trench duct, steel with cover, standard adjustable, straight, single compartment, depths to 4 IN, 24 IN wide.
16. Provide 1500 B.C.Y. of Borrow, common earth, 1 C.Y. bucket, loading and/or spreading, shovel.
17. Provide 400 L.C.Y. of Cycle hauling (wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 10 min wait/load/unload, 8 C.Y. truck, cycle 8 miles, 15 MPH, excludes loading equipment.
18. Provide and install 3140 S.Y. of Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4 IN stone base, to 6 IN deep.

G. Demolition

1. Provide 2 Mile of Overhead line conductors & devices, disposal of surplus material, high voltage conductors.
2. Provide selective demolition for 800 L.F. of chain link fences & gates, fence, fabric & accessories, barbed wire.
3. Provide selective demolition for 1 Ea. of chain link fences & gates, gates, motor operators.
4. Provide selective demolition for 80 Ea. of chain link fences & gates, fence, posts, steel in concrete.
5. Provide selective demolition for 80 Ea. of chain link fences & gates, fence, posts, steel in concrete.
6. Provide demolition and removal for 900 C.Y. of pavement & curb, concrete, rod reinforced, 7 IN to 24 IN thick, remove with backhoe, excludes hauling.
7. Provide 150 L.C.Y. of Cycle hauling (wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 10 min wait/load/unload, 8 C.Y. truck, cycle 8 miles, 20 MPH, excludes loading equipment.
8. Provide disposal only for80 C.Y. of selective demolition, urban buildings with salvage value allowed, concrete frame, includes loading and 5-mile haul to dump.
9. Provide rubbish handling for 12 Week of Selective demolition, dumpster, 40 C.Y., 10-ton capacity, weekly rental, includes one dump per week, cost to be added to demolition cost.
10. Provide 6000 kVA of Transformer, primary, 3 phase, to 600 V, 750 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations.
11. Provide and place 2 Ea. of Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 8,000-gallon, incl. pad & pump.
12. Provide 10 Day of Rent crane truck mount, cable 8x4 drive 165-ton, 18 FT radius, Incl. Hourly Opera. Cost.
13. Provide 500 C.F. of Selective demolition, cutout, concrete, walls, bar reinforced, 6-12 C.F., excludes loading and disposal.
14. Provide 60 L.C.Y. of Cycle hauling (wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 10 min wait/load/unload, 8 C.Y. truck, cycle 8 miles, 20 MPH, excludes loading equipment.
15. Provide 60 C.Y. of Selective demolition, disposal only, urban buildings with salvage value allowed, concrete frame, includes loading and 5-mile haul to dump.
16. Provide 3200 C.F. of Building demolition, large urban projects, steel, includes 20-mile haul, excludes foundation demolition, dump fees.
17. Provide 100 C.Y. of Selective demolition, disposal only, urban buildings with salvage value allowed, steel frame, includes loading and 5-mile haul to dump.
18. Provide 2 Ea. of Transformer, primary, 3 phase, to 600 V, 300 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations.
19. Provide 6 Ea. of Load interrupter switch, 600 A, 13.8 kV, NEMA1, electrical demolition, remove.
20. Provide 2 Ea. of Transformer, dry type, primary, 3 phase, to 600 V, 500 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations.
21. Provide 80 C.Y. of Selective concrete demolition, reinforcing more than 2% cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping.
22. Provide 4 Ea. of PA cabinet/panel, electrical demolition, remove, excl rough-in.
23. Provide 1 Ea. of Fire alarm control panel, 12 to 16 zone, electrical demolition, remove.
24. Provide 1 Ea. of Lead/Asbestos/PCB testing & Disposal equipment and structures, Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum.
25. Provide selective demolition for 6 Ea. of utility poles & cross arms, cross arms, wood, 4 FT-6 FT long.
26. Provide selective demolition for 6 Ea. of utility poles & cross arms, utility poles, wood, 35 FT-45 FT high.

H. Demolition and construction disposal

1. Provide 200 Hr. of Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment.

2. Provide 15 Ton of Hazardous waste cleanup/pickup/disposal, dumpsite disposal charge, minimum.
3. Provide 2 Ea. of Demolition, removal and disposal, structures, breakers, and other miscellaneous equipment.
4. Provide 12 months of Site preparation foundation (water truck, safety officer, etc. Plan CES).
5. Provide 1 EA of Lead and Asbestos Testing and Disposal for structures & demolitions.
6. Provide 1 Ea. of Storage of removal equipment/recycling/decommissioning.
7. Provide 1 Ea. of Regular Waste Disposal & Hazardous.
8. Provide 100 L.F. of Excavating, chain trencher, utility trench, common earth, 12 HP, 6 IN wide, 12 IN deep, operator walking.

I. Backup Generator

1. Provide and install 1 Ea. of Generator set, natural gas/LP,liquid cooled, 3 ph 4 wire, 120/240 V, 48kW, aluminum enclosure.
2. Provide and install 1 Ea. of Automatic transfer switches, enclosed, 3 pole, 480-volt, 100 amp.
3. Provide 1 Ea. of Excavation and dewatering.
4. Provide and install 10 S.F. of Foundation, Slab on grade, 8 IN thick, heavy industrial, reinforced.
5. Provide and install 50 L.F. of Electrical power installation and interconnection work, (trench work) for Telecommunication Shelter 2 IN PVC Sch 40 conduits .
6. Provide and install 6 Ea. of PVC conduit elbows, 2 IN diameter, to 15 FT H.
7. Provide and install 2 C.L.F. of Wire, copper, stranded, 600 volt, 3/0, type THWN-THHN, normal installation conditions in wireway, conduit, cable tray.
8. Provide 0.25 mile of Transmission line relocation 4 Mll.

J. Control Room 230 kV

1. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #14-7 conductor.
2. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #12-9 conductor.
3. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #12-12 conductor.
4. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-4 conductor.
5. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-7 conductor.
6. Provide and install 10 C.L.F. of Tray cable, type TC, copper, 600 V, #10-12 conductor.
7. Provide and install 10 C.L.F. of Coaxial cable, 50 ohm, RG A/U #58 cable.
8. Provide and install 2 Ea. of Annunciator Panel.
9. Provide and install 1 Ea. of Discrete Programmable Automation Controller (DPAC), Horizontal Rack mount, 125Vdc/Vac.
10. Provide and install 1 Ea. of Satellite Synchronized Network Clock, Horizontal Rack mount, 125Vdc or Vac.
11. Provide and install 2 Ea. of Ethernet Switch.
12. Provide and install 1 Ea. of Real Time Automation controller, 3U Horizontal Rack mount.
13. Provide and install 1 Ea. of Ethernet Security Gateway.
14. Provide and install 5 Ea. of Advanced Line Differential Protection, Automation, and Control System.
15. Provide and install 5 Ea. of Protection, Automation, and Control System.
16. Provide and install 5 Ea. of Protection, Automation, and Bay Control System.
17. Provide and install 2 Ea. of Overcurrent Protection Relay, with conventional secondary inputs 125-250Vdc or 110240Vac.
18. Provide and install 1 Ea. of Touchscreen monitor kit (19in ELO monitor PN:E331019, Display Port VGA HDMI, Rack Mount Bracket, 120/240Vac, 125/250Vdc) .
19. Provide and install 2 Ea. of multi-circuit testing of switchboard relays Full length, Clear cover, for 19 IN rack. .
20. Provide and install 2 C.L.F. of Wire, copper, stranded, 600 volt, 4/0, type THW, normal installation conditions in wireway, conduit, cable tray .
21. Provide and install 2 Ea. of Power Supply PS 100-240VAC_24DC.
22. Provide and install 2 Ea. of DC Distribution Panel 12/24/48VDC Dual Bus 1RU.
23. Provide and install 2 Ea. of Power supply 30W 12VDC.
24. Provide and install 2 Ea. of Interface Module terminal to DB9 communication.
25. Provide and install 12 Ea. of AGM pack 48VDC battery.
26. Provide and install 2 Ea. of Fuses, cartridge, non-renewable, 250 V, 30 amp.
27. Provide and install 2 Ea. of GE 400A Infinity-S Dual Molex LVBD.
28. Provide and install 2 Ea. of Integrated Communications Optical Network.
29. Provide and install 1 Ea. of GE Critical Power NE050AC48ATEZ 50A Rectifier.
30. Provide and install 2 Ea. of SCADA Panel.
31. Provide and install 2 Ea. of Internal Panel Wiring.
32. Provide and install 1 Ea. of Conversion equipment, battery chargers 480 Vac / 130 vdc.
33. Provide and install 1 Ea. of Battery, deep cycle, 400Ah, 125V.
34. Telecommunication
35. Provide and install 10 Ea. of Freestanding cabinet, black, 84 IN H x 19 IN W x 24 IN D, two sides, with front and rear doors.
36. Provide and install 1 Ea. of Rack mount USB, Keyboard/Drawer with mouse.

37. Provide and install 100 Ea. of Terminal Block 12 positions.
38. Provide and install 3 Ea. of Expansion Switch.
39. Provide and install 3 Ea. of Industrial Ethernet switch.
40. Provide and install 3 Ea. of Industrial Security Appliance Switch.
41. Provide and install 1 Ea. of KVM switch 2 USB ports.
42. Provide and install 1 Ea. of Data media converter module.
43. Provide and install 4 Ea. of Switching and routing equipment, network switch, KVM, 10/100/1000/10000 Mbps, 28 port, Industrial Ethernet, rear ports.
44. Provide and install 5 Ea. of Telecom Panels.
45. Provide and install 1 Ea. of Network Router multiport.
46. Provide and install 4 Ea. of Industrial 24 port switch.
47. Provide and install 2 M.L.F. of Medium-cable single cable, copper, XLP shielding, 15 kV, 500 kcmil, pulled in duct, excl splicing & terminations.
48. Provide and install 1 W.Mile of Overhead line conductors & devices, conductors, primary circuits, material handling & spotting.
49. Provide and install 1 W. Mile of Overhead line conductors & devices, conductors, primary circuits, per wire, 210 to 636 kcmil.
50. Provide and install 18 C.Y. of Cable Bridge (galvanized steel, 24 IN W grip-strut channel, universal cantilevers and pipe columns).
51. Provide and install 18 L.F. of Concrete Foundation for Cable Bridge Steel Column 3500psi (8 IN wide).
52. Provide and install 1 Ea. of Communications transmission tower, radio towers self-supporting, wind load 70 mph basic wind speed, 120 FT high.
53. Provide and install 1 Ea. of Networks microwave radio, Antenna.
54. Provide 5 Ea. of Testing and Commissioning for Telecom.
55. Provide and install 1 Ea. of Transformer, dry type, ventilated, 3 phase 480 V primary 120/208 V secondary, 6 kVA.
56. Provide and install 4 Ea. of Panel boards, 3 phase 4 wire, main lugs, 120/208 V, 400 amp, 42 circuits, NQ, incl 20 A 1 pole bolt-on breakers.
57. Provide and install 1 Ea. of PEC Steel Building Frame Size L x W x H: 30 FT x 22 FT x 12 FT.
58. Provide and install 1 Ea. of Battery System 125VDC.
59. Provide and install 1 Ea. of Relay Control Panel.
60. Provide and install 8 Ea. of medium voltage Cable terminations, 35 kV, 400 kcmil to 750 kcmil stranded.
61. Provide and install 8 Ea. of Cable terminations, outdoor systems, 35 kV, 400 kcmil to 750 kcmil stranded.
62. Provide and install 5 Day of Crane crew, daily use for small jobs, 80-ton truck-mounted hydraulic crane, portal to portal.
63. Provide and install 80 C.Y. of GIS Concrete Pad: L x W x H: 50 FT x 26 FT X 12 IN.
64. Provide and install 30 C.Y. of Structural concrete, in place, free-standing wall (3000 psi), 12 IN thick x 8 FT high, includes forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing.
65. Provide and install 10 Ea. of Exothermic weld, to building steel, 4/0 wire.
66. Provide and install 20 EA of 3/4 IN Ground Rods (10 feet).
67. Provide and install 2 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, parallel, vertical.
68. Provide and install 4 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, splice single.
69. Provide and install 4 Ea. of Exothermic weld, exothermic welding reusable mold, cable to cable, termination, Tee.
70. Provide and install 4 Ea. of Exothermic weld, exothermic welding reusable mold, cable to rod, termination, Tee.
71. Provide and install 4 Ea. of Exothermic weld, exothermic welding reusable mold, cable to rod, termination, 90 Deg
72. Provide 10 EA of Welding material, 115. 73. Provide 10 EA of Welding material, 150.
73. Provide 10 EA of Welding material, 200.
74. Provide and install 1 EA of Ground Plate (conductor size #4, length = 96 IN, width=72 IN).
75. Provide and install 20 FT of Bonding strap, 231.552 kcmil (Flexible copper braided #4/0 equivalent).
76. Provide and install 20 EA of Cable strap, 4/0 (#T&B 1347) .
77. Provide and install 25 L.F. of Trench duct, steel with cover, standard adjustable, straight, single compartment, depths to 4 IN, 24 IN wide.
78. Provide and install 1 Ea. of Generator set, natural gas/LP, liquid cooled, 3 ph. 4 wire, 120/240 V, 48kW, aluminum enclosure.
79. Provide and install 1 Ea. of Automatic transfer switches, enclosed, 3 pole, 480-volt, 100 amp.
80. Provide 1 Ea. of Excavation and dewatering.
81. Provide and install 10 S.F. of Foundation, Slab on grade, 8 IN thick, heavy industrial, reinforced.
82. Provide 50 L.F. of Electrical power installation and interconnection work, (trench work) for Telecommunication Shelter 2 IN PVC Sch 40 conduits.
83. Provide and install 6 Ea. of PVC conduit elbows, 2 IN diameter, to 15 FT H.
84. Provide and install 2 C.L.F. of Wire, copper, stranded, 600 volt, 3/0, type THWN-THHN, normal installation conditions in wireway, conduit, cable tray.

PROJECT ESTIMATE

Project Cost Estimate	Total	428 Public Assistance	406 Hazard Mitigation

PLANNING (A&E)	**$3,344,461.79**	**$3,344,461.79**	_
Permitting and Assessments	$70,926.60	$70,926.60	_
Environmental Documentation & Management	$272,794.60	$272,794.60	_
Engineering Services & Design	$3,000,740.59	$3,000,740.59	_
MANAGEMENT (A&E)	**$1,745,885.43**	**$1,745,885.43**	
Project Management	$545,589.20	$545,589.20	
Construction Management	$654,707.04	$654,707.04	
Contracting, Procurement & Contract Administration	$81,838.38	$81,838.38	
Projects Controls (Scheduling, Estimating, Support, Cost Control, Risk, Document Control & Reporting)	$409,191.90	$409,191.90	
Legal	$27,279.46	$27,279.46	
Finance & Accounting	$27,279.46	$27,279.46	
Costa Sur Scope 2	**$50,136,717.87**	**$50,136,717.87**	
Costa Sue Scope 2 material, labor and equipment	$49,836,511.49	$49,836,511.49	
Construction & Access Road Clearance	$16,500.00	$16,500.00	
Start Up/Commissioning	$136,397.30	$136,397.30	
Transportation Expenses	$81,838.38	$81,838.38	
Security (Field 24 hr)	$65,470.70	$65,470.70	
GENERAL CONDITIONS	**$4,078,480.77**	**$4,078,480.77**	
Sales Tax	$1,350,534.78	$1,350,534.78	
Municipal Construction Tax	$2,727,945.99	$2,727,945.99	
CONTINGENCY	**$7,229,056.88**	**$7,229,056.88**	
Contingency	$5,455,891.98	$5,455,891.98	
Escalation	$1,636,767.60	$1,636,767.60	
Overhead	$136,397.30	$136,397.30	
	FAASt Project #682834 (428) Total	**$66,534,602.74**	
	FAASt Project #682834 (406) Total	**$0.00**	
	FAASt A&E #335168 Total	**$5,090,347.22**	

Total Cost	**$61,444,255.52**	

Work to be Completed (WTBC): $66,534,602.74

A&E Deduction (Global A&E FAASt 335168): - $5,090,347.22

Project Total Cost: $61,444,255.52

For detailed cost estimate, please refers to document labeled: 682834_DR-4339PR_Costa Sur Phase II (New Guaypao) -FEMA Detailed Scope of Work - Phase II (11.20.2023).pdf

PROJECT SCHEDULE

Milestone	Target Date
FEMA Obligation Funds	November 2023
Complete Permitting and Environmental	January 2025
Construction	March 2025 to September 2026
In-Service-Date	October 2026

Note: This schedule is subject to change based on various factors including vendors dates, external approval, Mobile Substation and Outage availability.

406 HAZARD MITIGATION PROPOSAL

406 Mitigation Opportunity Scope of Work

It was agreed with FEMA that this project will be moved forward without HMP. Sub-applicant will develop this project by Design & Build process (EPC: Engineering, Procurement & Construction). Once the sub-applicant's A&E firm completes the Design and Class 3 Cost Estimate then the proposed HMP measures will be evaluated and validated.

406 Mitigation Opportunity Cost Estimate

Estimated Budget for Architectural & Engineering to Design:	Unknown at this time
Estimated Budget for Procurement:	Unknown at this time
Estimated Budget for Construction:	Unknown at this time
Estimated Overall Budget for the Projec:	Unknown at this time

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

ATTACHMENTS

Document Name	Description
682834-DR-4339PR- Appendix A - Consent to Federal Funding - FEMA COR3.pdf	Consent to Federal Funding Letter - FEMA/COR3
682834-DR-4339PR- Appendix B - Costa Sur Phase II LPCE10.30.23.pdf	Costa Sur LUMA provided Cost Estimate

682834-DR-4339PR- Appendix C - Costa Sur TC existing SLD configuration.pdf	Costa Sur TC existing SLD configuration
682834-DR-4339PR- Appendix D - Costa Sur TC Propose SLD configuration.pdf	Costa Sur and Guaypao proposed transmission Infrastructure configuration.
682834-DR-4339PR- Appendix E- Costa Sur General Arrangement phase II.kmz	Costa Sur Site Plan
682834-DR-4339PR- Appendix F - example drawings	Example drawings for reference

PROJECT NOTES

1. The permanent staging area will be located inside the existing LUMA Costa Sur TC ([redacted], no additional or temporary staging areas are required. The expected use is to stage materials to be installed.

2. Refer to detailed SOW provided in document named: 682834_DR-4339PR_Costa Sur Phase II (New Guaypao) -FEMA Detailed Scope of Work - Phase II (11.20.2023).pdf.

3. For reference documents attachments, see file labeled: 682834_DR-4339PR_Costa Sur Phase II (New Guaypao) -FEMA Detailed Scope of Work - Phase II (11.20.2023).pdf The corresponding attachment files are in Documents section in GM.

4. For detailed cost estimate, please refer to document named: 682834_DR-4339PR- Appendix B - Costa Sur Phase II LPCE11.20.23.xlsx

5. For EHP Requirements, refer to pages 12 to 14 of the detailed SOW and reference documents: 682834_DR-4339PR_Costa Sur Phase II (New Guaypao) -FEMA Detailed Scope of Work - Phase II (11.20.2023).pdf.

6. Architectural and Engineering (A&E) costs are deducted given previously obligated Global A&E Project for the subject FAASt PREPA work (see project: 335158 - FAASt A&E PREPA).

7. This project is part of 136271-MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

406 HMP Scope

It was agreed with sub-applicant this project will be moved forward without HMP. Sub-applicant will develop this project by Design & Build process (EPC: Expedited Procurement & Construction). Once the sub-applicant's A&E firm completes the Design and Class 5 Cost Estimate then the proposed HMP measures will be evaluated and validated.

Cost

Code	Quantity	Unit	Total Cost	Section
3510 (3510 (A&E Deduction (Global A&E FAASt 335168 Version 0)))	1.00	Lump Sum	($5,090,347.22)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	$0.00	Completed
9001 (9001 Contract (PREPA FAASt 136271))	1.00	Lump Sum	$66,534,602.74	Uncompleted

CRC Gross Cost	$61,444,255.52
Total 406 HMP Cost	$0.00
Total Insurance Reductions	$0.00
CRC Net Cost	$61,444,255.52
Federal Share (90.00%)	$55,299,829.97
Non-Federal Share (10.00%)	$6,144,425.55

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-11402(14742)	$61,444,255.52	90%	$55,299,829.97	2/12/2024

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

01/30/2024

Project came back to insurance to correct O&M entry in GM. No adjustments to be made to the previous insurance coverage determination, no revisions to narrative needed, updated applicant tracker if needed, providing administrative function and forwarding project for completion.

Olga Renta, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR

12/18/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 682834

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: $61,444,255.52

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) #1242532:

FAASt [Costa Sur TC – Phase II]

Location Description: Costa Sur TC – Phase II

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: $61,444,255.52

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 forEquipment, for the peril of Wind (all wind associated losses including "wind driven rain") for the FAASt [Costa Sur TC – Phase II] in the amount of $61,444,255.52.

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	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 [Costa Sur TC – Phase II] in the amount of $61,444,255.52.	$61,444,255.52

406 Mitigation

There is no additional mitigation information on **FAASt [EPC - Costa Sur TC - Phase II & III] (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.
- Clean Air Act (CAA) - Applicant is required to obtain a Source of Emission Permit (PFE) from Puerto Rico Department of Natural and Environmental Resources (PR DNER) or General Permit for Emergency Power Generators (PG-GE) from the PR Office of Permits Management (OGPe) prior to construction and operation of the proposed source of emissions. Documentation of DNER and other state, local or federal guideline compliance, may be required as a condition of closeout.
- National Historic Preservation Act (NHPA) - 1. 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. 2. 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. 3. 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.
- 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. 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. 3. 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.
- 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 [EPC - Costa Sur TC - Phase II & III] (Substation)**.

Final Reviews

Final Review

Reviewed By Amaro, Luis N. **Reviewed On** 02/05/2024 6:43 AM PST

Review Comments

LNA 02/05/24. 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** 02/06/2024 9:54 AM PST

Review Comments

Recipient review completed. Applicant must ensure to compliance with all regulatory requirements and PA policy. 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 $61,444,255.52 for subaward number 11402 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** 02/07/2024