

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

NEPR

Received:

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IN RE:

IN RE: REVIEW OF THE PUERTO RICO
ELECTRIC POWER AUTHORITY'S 10-
YEAR INFRASTRUCTURE PLAN-
DECEMBER 2020

CASE NO. NEPR-MI-2021-0002

**SUBJECT: Motion Submitting Two FEMA
Approvals of Projects, Request for Confidential
Treatment, and Supporting Memorandum of Law**

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

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC¹, and LUMA Energy ServCo, LLC², (jointly referred to as “LUMA”), through the undersigned legal counsel and respectfully submits the following:

I. Submittal of 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 [San Germán Streetlighting] (Distribution)” T&D Project.³

3. On September 22, 2021, the Energy Bureau issued a Resolution and Order. It 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 [San Germán Streetlighting] (Distribution)” T&D Project SOW. The Energy Bureau also ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the Projects, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

4. On October 4, 2021, LUMA filed a *Motion Submitting Update List of Transmission and Distribution Projects and Thirty-Eight Scopes of Work*. Therein, LUMA submitted thirty-eight (38) SOWs for T&D Projects for its review and approval before submitting them to COR3 and

³ This T&D Project was submitted initially to the Energy Bureau as the “Distribution Streetlighting,” which encompassed streetlighting replacement projects throughout Puerto Rico but were later divided into individual projects per municipality.

FEMA (“October 4th Motion”). Among the SOWs submitted to this Energy Bureau was the “FAASt [Physical Security - Group 1] (Substation)” T&D Project.⁴

5. Then, on October 18, 2021, the Energy Bureau entered a Resolution and Order in which it determined that the thirty-eight (38) SOWs for T&D projects submitted by LUMA were necessary to improve the system’s reliability (“October 18th Order”). Therefore, it approved all the projects presented in the October 4th Motion, including the “FAASt [Physical Security - Group 1] (Substation)” T&D Project SOW. Further, the Energy Bureau ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the approved projects and the costs obligated for each project within ten (10) days of receiving such approval.

6. In compliance with the September 22nd and October 18th Orders, LUMA hereby submits copies of approvals by FEMA of the Projects issued on May 3, 2023.⁵ *See Exhibit 1* to this Motion. The document contains FEMA’s approvals and includes the cost obligated for each Project.

7. LUMA is submitting herein a redacted public version of the FEMA approvals (**Exhibit 1**) protecting confidential information associated with Critical Energy Infrastructure Information (“CEII”). The FEMA approvals of the “FAASt [Physical Security - Group 1] (Substation)” and “FAASt [San Germán Streetlighting] (Distribution)” 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

⁴ This T&D Project was submitted initially to the Energy Bureau as the “Physical Security”, which encompassed physical security practices and components, including perimeter protection, facilities access control, company property and assets throughout 230 kV, 115 kV, 38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business and administration offices but were later divided into individual projects per group.

⁵ It is important to note that LUMA acquires knowledge of any FEMA approval for a T&D Project once FEMA makes the information available via its grant portal.

to the Bureau's Policy on Management of Confidential Information. *See* Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, as amended by Resolution dated September 20, 2016.

II. Memorandum of Law in Support of Request for Confidentiality

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

8. 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 LPRC §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).

9. 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).

10. 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.

11. Moreover, the Energy Bureau's Policy on Management of Confidential Information details the procedures a party should follow to request that a document or portion thereof be afforded confidential treatment. In essence, the referenced Policy requires identifying confidential information and filing a memorandum of law explaining the legal basis and support for a request to file information confidentially. *See* CEPR-MI-2016-0009, Section A, as amended by the Resolution of September 20, 2016, CEPR-MI-2016-0009. The memorandum should also include a table that identifies the confidential information, a summary of the legal basis for the confidential designation, and why each claim or designation conforms to the applicable legal basis of confidentiality. *Id.* at ¶ 3. The party who seeks confidential treatment of information filed with the Energy Bureau must also file both a "redacted" or "public version" and an "unredacted" or "confidential" version of the document that contains confidential information. *Id.* at ¶ 6.

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

1. Trade Secret Information
Any document designated by the [Energy Bureau] as Validated Confidential Information because it is a trade secret under Act 80-2011 may only be accessed by the Producing Party and the [Energy Bureau], unless otherwise set forth by the [Energy Bureau] or any competent court.
2. Critical Energy Infrastructure Information ("CEII")
The information designated by the [Energy Bureau] as Validated Confidential Information on the grounds of being CEII may be

accessed by the parties' authorized representatives only after they have executed and delivered the Nondisclosure Agreement.

Those authorized representatives who have signed the Non-Disclosure Agreement may only review the documents validated as CEII at the [Energy Bureau] or the Producing Party's offices. During the review, the authorized representatives may not copy or disseminate the reviewed information and may bring no recording device to the viewing room.

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

13. 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

14. The FEMA approvals with CEII included in **Exhibit 1** contain portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the FEMA approvals with CEII warrant confidential treatment to protect critical infrastructure from threats that could undermine the system and negatively affect electric power

services to the detriment of the interests of the public, customers, and citizens of Puerto Rico. In several proceedings, this Energy Bureau has considered and granted requests by PREPA to submit CEII under seal of confidentiality.⁶ In at least two proceedings on Data Security,⁷ and Physical Security,⁸ this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

15. 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,

⁶ *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 Minigrad 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).

⁷ *In re Review of the Puerto Rico Electric Power Authority Data Security Plan*, NEPR-MI-2020-0017.

⁸ *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan*, NEPR-MI-2020-0018.

and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

16. 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.

17. Generally, CEII or critical infrastructure information is exempted from public disclosure because it involves assets and information which 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.

18. 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.*

19. 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”).⁹ 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).¹⁰

⁹ Regarding protection of voluntary disclosures of critical infrastructure information, 6 U.S.C. § 673, provides in pertinent part, that CII:

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

¹⁰ 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;

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

21. Based on the above, LUMA respectfully submits that the FEMA approvals with CEII should be designated as CEII. This designation is a reasonable and necessary measure to protect the specific location of the energy facilities listed or discussed in these 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.

(B) the ability of any critical infrastructure or protected system to resist such interference, compromise, or incapacitation, including any planned or past assessment, projection, or estimate of the vulnerability of critical infrastructure or a protected system, including security testing, risk evaluation thereto, risk management planning, or risk audit; or

(C) any planned or past operational problem or solution regarding critical infrastructure or protected systems, including repair, recovery, construction, insurance, or continuity, to the extent it is related to such interference, compromise, or incapacitation.

C. Identification of Confidential Information

22. 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 those 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 [Physical Security - Group 1] (Substation)	Pages 1-4, 6, 8-9, 12-13, 15-16, 18, 20, and 26-29	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	May 9, 2023
Exhibit 1	FAASt [San Germán Streetlighting] (Distribution)	Pages 1, 4, and 10	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	May 9, 2023

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

RESPECTFULLY SUBMITTED.

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

In San Juan, Puerto Rico, on this 9th day of May 2023.



DLA Piper (Puerto Rico) LLC
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/s/ Yahaira De la Rosa Algarín
Yahaira De la Rosa Algarín
RUA NÚM. 18,061
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Exhibit 1
FEMA Approvals

Department of Homeland Security Federal Emergency Management Agency

General Info

Project #	550910	PW#	10841	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)		
Project Title	FAASt [Physical Security - Group 1] (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		
Process Step	Obligated	Incident End Date	11/15/2017		

Damage Description and Dimensions

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

Damage #927214; FAASt [Viaducto TC 1100/1115]

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:** Viaducto TC 1100/1115
- **Facility Description:** The above facilities are composed of 230/115/38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business offices and administration offices which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices includes facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns.
- **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 #927218; FAASt [Sabana Llana TC 1646/1647]

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:** Sabana Llana TC 1646/1647
- **Facility Description:** he above facilities are composed of 230/115/38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business offices and administration offices which requires an effectively physical security improvement applying a comprehensive risk-based

security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices includes facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns.

- **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 #927219; FAASSt [Hato Rey TC 1419/1420]

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

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Hato Rey TC 1419/1420
- **Facility Description:** The above facilities are composed of 230/115/38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business offices and administration offices which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices includes facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns.
- **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 #927220; FAASSt [Monacillos TC 1346/1330]

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

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Monacillos TC 1346/1330
- **Facility Description:** The above facilities are composed of 230/115/38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business offices and administration offices which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices includes facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns.
- **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 #927221; FAASSt [Manati TC 8404]

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

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Manati TC 8404
- **Facility Description:** The above facilities are composed of 230/115/38 kV critical substations, transmission substations, distribution substations, control centers, warehouses, business offices and administration offices which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices includes facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns.
- **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

927214 FAASt [Viaducto TC 1100/1115]

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Physical Security - Group 1 under DR-4339 PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, the associated substations related to the Physical Security - Group 1. This project is part of the Physical Security Program which has been classified as critical to system operation, location, and scope complexity.

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

DI 927214 FAASt [Viaducto TC 1100/1115]

Facilities

Island-wide Substations experienced substantial damages due to Hurricane Maria in September 2017. The facilities addressed by this project are transmission and distribution substations which require significant physical security improvements to avoid safety hazards, violations of federal or local ordinance, potential security breaches, and damage from future severe weather events.

This project includes Viaducto TC substation in Group 1 located in the San Juan region.

Name: Viaducto TC Substation

Construction Year: August 1965

Number: 1100/1115

GPS Coordinates: [REDACTED]

Proposed 428 Public Assistance Scope of Work (SOW):

- A. Remove vegetative and non-vegetative debris from the site and buildings, including damaged fencing. No vegetative debris to be removed outside substation boundary.
- B. Add insulating gravel.
- C. Install new signage on fencing and gates.
- D. Install new padlocks on gates and equipment.
- E. Install new electronic access system for the Control and IT Rooms.
- F. Install new security lighting and external lighting on the control room and outdoor structures.
- G. Install within substation footprint new closed-circuit television (CCTV) system, including approximately 15 cameras, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This mitigation measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches.

Cost Estimate

PLANNING		\$	21,654.32
ENGINEERING SERVICES & DESIGN		\$	122,444.51
MANAGEMENT		\$	<u>65,101.02</u>
	SUB	\$	209,199.86
TOTAL A&E			
SUBSTATION		\$	816,296.73
GENERAL CONDITIONS		\$	110,569.68
CONTINGENCY		\$	<u>59,176.06</u>
	TOTAL DI	\$	1,195,242.33
COST ESTIMATE			

DI 927214 Work to be Completed (WIBC) 428 Costs: \$1,195,242.33 - \$209,199.86 (FAASt A&E 335168) = \$986,042.47

PLANNING		\$ 132,320.00
ENGINEERING SERVICES & DESIGN		\$ 748,204.34
MANAGEMENT		\$ <u>397,803.62</u>
TOTAL A&E	SUB	\$ 1,278,327.96
SUBSTATION		\$ 4,988,028.94
GENERAL CONDITIONS		\$ 675,642.48
CONTINGENCY		\$ <u>361,598.80</u>
ESTIMATE	TOTAL PROJECT COST	\$ 7,303,598.19

Total Project Cost Work to be Completed (WTBC) (All DI's): \$7,303,598.19 - \$1,278,327.96 (FAASt A&E 335168) = \$6,025,270.22

Project Notes

1. For a full description of the Scope of Work contents for this project, plus related Appendix, please refer to file: *Revised FEMA SOW.pdf*
2. For a detailed Cost Estimate WTBC refer to document: *550910-DR4339PR- 20 Appendix T - LPCE Physical Security Group 1 - Estimate Rev 2023-03-16.xlsx*.
3. Any claim or disbursement related to Engineering or Architecture (A&E) services for this project must be claimed/dispursed from Project 335168, which was prepared to cover A&E expenses related to this Applicant's FAASt Projects. The A/E funds for \$1,278,327.96 have been calculated for this project (all DIs). However, the actual A&E costs will be claimed in GM project #335168. This amount will be included in this project with a negative dollar amount, to avoid duplicity of funds.
4. FEMA Hazard Mitigation did not approve HM funding for the CCTV system. FEMA CRC modified the cost estimate to include CCTV cost to 428 Permanent Work. Revise cost can be found on Project Documents file: *550910-DR4339PR- FEMA CE Physical Security - Group 1 - 428.xlsx*
5. For EHP Requirements, refer to pages 11 to 18 of the detailed SOW and reference document: *550910-DR4339PR-DSOW-Physical Security - Group 1- Appendix S - E.H.P CHECK LIST.xlsx*
6. The Infrastructure Division Director authorized modifying the Applicant provided scope of work to add specificity with regards to location, damage descriptions and quantities. The additional information was obtained from Applicant submitted documents available in GM project files."
7. For photos of the tasks involved in the SOW see document file: *550910-DR4339PR-DSOW-Physical Security - Group 1-Appendix S - E.H.P CHECK LIST (1)*.
8. Ground Disturbances: All project construction activities will take place within the existing substation boundary. Fence foundations will be built around the perimeter to a minimum depth of 36" below final grade. LUMA has reviewed the Archaeological GIS layers provided by the Puerto Rico Planning Board and confirmed no previous features in the project area. Any features discovered during construction will be managed in accordance with the

Project Specific Programmatic Agreement (PSPA).

9. Staging Area: The type of debris that may be found, but not limited to, in the process of demolition are concrete, metal scrap, domestic waste, wood, etc. The debris will be separated and taken to an approved waste disposal facility as per the LUMA Waste Management Plan - Appendix Q. 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 D, Appendix G, Appendix J, Appendix M, and Appendix P.
10. Work captured on this project is intended to restore facilities back to pre-disaster design, function, and capacity (in-kind) within the existing footprint (right-of-way).

406 HMP Scope

Project number: 550910 FAASt [Physical Security - Group 1] (Substation)

Damage #927214; FAASt [Viaducto TC 1100/1115]

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

The FAASt [Physical Security - Group 1] (Substation) consists of 5 transmission centers facilities (sites) which are distributed as follows: Viaducto TC (1100/1115), Sabana Llana TC (1646/1647), Hato Rey TC (1419/1420), Monacillos TC (1330/1346), and Manatí TC (8404).

The above facilities are composed of 230/115/38 KV critical substations (transmission and distribution) which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices include facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA/PREPA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns. According to the information provided by the 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, reduce the spacing of the chain-link fence posts from 10ft to 8ft, raise an additional 12" above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, replace the aluminum jalousie window by wind-resistant aluminum-louver windows, replace the exterior fire rated steel doors by 16ga. fire rated steel door and increase the strength of the CCTV (cameras) poles from 90mph to +160mph sustained winds material. 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)*

- 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 **(34ea)** 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, **374 LF**.

Note: 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 = **17 EA**.
- Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **17 EA**.

- Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **34 EA.**
 - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **51 EA.**
 - Ground wire, copper wire, bare stranded, #4 = **51 LF.**
 - Ground wire, copper wire, bare stranded, 4/0 = **340 LF**
- Chain-link fence foundation wall will be raised an additional 12" [**1,384ft(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, **25.6CY.**

Mitigation Measures (*Replacement*)

- 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.

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) =	\$64,460.44
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$28,214.19</u>
Hazard Mitigation Total Cost =	\$ 92,674.63

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 **\$92,674.63 (Hazard Mitigation Total Cost)**. The cost of this HMP combined with 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*).**

927218 **FAASt [Sabana Llana TC 1646/1647]**

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Physical Security - Group 1 under DR-4339 PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, the associated substations related to the Physical Security - Group 1. This project is part of the Physical Security Program which has been classified as critical to system operation, location, and scope complexity.

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

DI 927218 FAASt [Sabana Llana TC 1646/1647]

Facilities

Island-wide Substations experienced substantial damages due to Hurricane Maria in September 2017. The facilities addressed by this project are transmission and distribution substations which require significant physical security improvements to avoid safety hazards, violations of federal or local ordinance, potential security breaches, and damage from future severe weather events.

This project includes Sabana Llana TC substation in Group 1 located in the Carolina region.

Name: Sabana Llana TC Substation

Construction Year: September 1963

Number: 1646/1647

GPS Coordinates: [REDACTED]

Proposed 428 Public Assistance Scope of Work (SOW):

- A. Remove vegetative and non-vegetative debris from the site and buildings, including damaged fencing, windows and doors. Vegetative debris to be removed is encroachment around the existing perimeter fence, 60 ft in the north-east side and 50 ft in the south-west side that extend 12 inches outside the perimeter.
- B. Add insulating gravel.
- C. Install new signage on fencing and gates.
- D. Install new padlocks on gates and equipment.
- E. Install new electronic access system for the Control and IT Rooms.
- F. Install new security lighting and external lighting on the control room and outdoor structures.
- G. Install within substation footprint new closed-circuit television (CCTV) system, including approximately 15 cameras, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This mitigation measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches.

Cost Estimate

PLANNING		\$ 40,834.58
ENGINEERING SERVICES & DESIGN		\$ 230,899.43
MANAGEMENT		\$ <u>122,764.10</u>
TOTAL A&E	SUB	\$ 394,498.11
SUBSTATION		\$ 1,539,329.54
GENERAL CONDITIONS		\$ 208,506.49
CONTINGENCY		\$ <u>111,591.12</u>
COST ESTIMATE	TOTAL DI	\$ 2,253,925.26

DI 927218 Work to be Completed (WTBC) 428 Costs: \$2,253,925.26 - \$394,498.11 (FAASt A&E 335168) = \$1,859,427.15

406 HMP Scope

Project number: 550910 FAASt [Physical Security - Group 1] (Substation)

Damage #927218; FAASt [Sabana Llana TC 1646/1647]

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

Location: Carolina, Puerto Rico

GPS Latitude/Longitude: [REDACTED]

Hazard Mitigation Narrative

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

The FAASt [Physical Security - Group 1] (Substation) consists of 5 transmission centers facilities (sites) which are distributed as follows: Viaducto TC (1100/1115), Sabana Llana TC (1646/1647), Hato Rey TC (1419/1420), Monacillos TC (1330/1346), and Manatí TC (8404).

The above facilities are composed of 230/115/38 KV critical substations (transmission and distribution) which requires an effectively physical security

improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices include facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA/PREPA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns. According to the information provided by the 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, reduce the spacing of the chain-link fence posts from 10ft to 8ft, raise an additional 12" above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, replace the aluminum jalousie window by wind-resistant aluminum-louver windows, replace the exterior fire rated steel doors by 16ga. fire rated steel door and increase the strength of the CCTV (cameras) poles from 90mph to +160mph sustained winds material. 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)*

- 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 **(90ea)** 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, **990 LF**.

Note: 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 = **45 EA**.
- Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **45 EA**.
- Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **90 EA**.
- Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **135 EA**.
- Ground wire, copper wire, bare stranded, #4 = **135 LF**.
- Ground wire, copper wire, bare stranded, 4/0 = **900 LF**

- Chain-link fence foundation wall will be raised an additional 12" [**3,586ft(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, **66.4CY**.

Mitigation Measures *(Replacement)*

- Replace **(17ea)** aluminum jalousie windows (36" x 48") by wind-resistant aluminum-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, **204SF**.
- Replace **(1ea)** control house exterior double door (6ft x 7ft) by 90-minutes fire-proof 16-gauge doors designed to reduce the wind-borne debris, wind driven rain, water intrusion and high hurricane winds impact and/or effects.
- Replace **(4ea)** control house exterior single doors (3ft x 7ft) by 90-minutes fire-proof 16-gauge doors designed to reduce the wind-borne debris, wind driven rain, water intrusion and high hurricane winds impact and/or effects.
- 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.

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) =	\$165,994.82
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$ 72,655.56</u>
Hazard Mitigation Total Cost =	\$238,650.38

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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 **\$238,650.38 (Hazard Mitigation Total Cost)**. The cost of this HMP combined with 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).**

927219 FAASt [Hato Rey TC 1419/1420]

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Physical Security - Group 1 under DR-4335 PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, the associated substations related to the Physical Security - Group 1. This project is part of the Physical Security Program which has been classified as critical to system operation, location, and scope complexity.

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

DI 927219 FAASt [Hato Rey TC 1419/1420]

Facilities

Island-wide Substations experienced substantial damages due to Hurricane Maria in September 2017. The facilities addressed by this project are transmission and distribution substations which require significant physical security improvements to avoid safety hazards, violations of federal or local ordinance, potential security breaches, and damage from future severe weather events.

This project includes Hato Rey TC substation in Group 1 located in the San Juan region.

Name: Hato Rey TC Substation

Construction Year: June 1971

Number: 1419/1420

GPS Coordinates: [REDACTED]

Proposed 428 Public Assistance Scope of Work (SOW):

- A. Remove vegetative and non-vegetative debris from the site and buildings, including damaged fencing, windows and doors. No vegetative debris to be removed outside the substation boundaries.
- B. Add insulating gravel.
- C. Install new signage on fencing and gates.
- D. Install new padlocks on gates and equipment.
- E. Install new electronic access system for the Control and IT Rooms.
- F. Install new security lighting and external lighting on the control room and outdoor structures.
- G. Replace 3 control room interior single doors with 90 minutes fire rated 16-gauge doors designed to reduce the wind-borne debris, wind driven rain, water intrusion and high hurricane winds impact and/or effects.
- H. Install within substation footprint new closed-circuit television (CCTV) system, including approximately 15 cameras, 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.

Cost Estimate

PLANNING	\$ 22,421.32
ENGINEERING SERVICES & DESIGN	\$ 126,781.50
MANAGEMENT	\$ <u>67,406.90</u>
SUB	\$ 216,609.72
TOTAL A&E	\$ 845,209.97
SUBSTATION	\$ 114,486.06
GENERAL CONDITIONS	\$ 61,272.08
CONTINGENCY	\$ <u>61,272.08</u>

ESTIMATE	TOTAL DI COST	\$ 1,237,577.82
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DI 927219 Work to be Completed (WTBC) 428 Costs: \$1,237,577.82 - \$216,609.72 (FAASt A&E 335168) = \$1,020,968.10

406 HMP Scope

Project number: 550910 FAASt [Physical Security - Group 1] (Substation)

Damage #927219; FAASt [Hato Rey TC 1419/1420]

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

Location: San Juan, Puerto Rico

GPS Latitude/Longitude: XXXXXXXXXX

Hazard Mitigation Narrative

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

The FAASt [Physical Security - Group 1] (Substation) consists of 5 transmission centers facilities (sites) which are distributed as follows: Viaducto TC (1100/1115), Sabana Llana TC (1646/1647), Hato Rey TC (1419/1420), Monacillos TC (1330/1346), and Manatí TC (8404).

The above facilities are composed of 230/115/38 KV critical substations (transmission and distribution) which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices include facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA/PREPA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns. According to the information provided by the 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, reduce the spacing of the chain-link fence posts from 10ft to 8ft, raise an additional 12" above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, replace the aluminum jalousie window by wind-resistant aluminum-louver windows, replace the exterior fire rated steel doors by 16ga. fire rated steel door and increase the strength of the CCTV (cameras) poles from 90mph to +160mph sustained winds material. 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)*

- 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 **(34ea)** 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, **374 LF**.

Note: 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 = 17 EA.
 - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = 17 EA.
 - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = 34 EA.
 - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = 51 EA.
 - Ground wire, copper wire, bare stranded, #4 = 51 LF.
 - Ground wire, copper wire, bare stranded, 4/0 = 340 LF
- Chain-link fence foundation wall will be raised an additional 12" [1,372ft(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, 25.4CY.

Mitigation Measures (Replacement)

- Replace (10ea) aluminum jalousie windows (36" x 48") by wind-resistant aluminum-louver windows to reduce the wind-borne debris, wind driven rain and high hurricane winds impact and/or effects, 120SF.
- Replace (1ea) control house exterior double door (6ft x 7ft) by 90-minutes fire-proof 16-gauge doors designed to reduce the wind-borne debris, wind driven rain, water intrusion and high hurricane winds impact and/or effects.
- 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.

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) =	\$ 72,979.01
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$ 31,942.75</u>
Hazard Mitigation Total Cost =	\$104,921.76

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 \$104,921.76 (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).**

927220 FAAST [Monacillos TC 1346/1330]

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Physical Security - Group 1 under DR-4339 PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, the associated substations related to the Physical Security - Group 1. This project is part of the Physical Security Program which has been classified as critical to system operation, location, and scope complexity.

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

DI 927220 FAASt [Monacillos TC 1346/1330]

Facilities

Island-wide Substations experienced substantial damages due to Hurricane Maria in September 2017. The facilities addressed by this project are transmission and distribution substations which require significant physical security improvements to avoid safety hazards, violations of federal or local ordinance, potential security breaches, and damage from future severe weather events.

This project includes Viaducto TC substation in Group 1 located in the San Juan region.

Name: Monacillos TC Substation

Construction Year: September 1961

Number: 1346/1330

GPS Coordinates: [REDACTED]

Proposed 428 Public Assistance Scope of Work (SOW):

- A. Remove vegetative and non-vegetative debris from the site and buildings, including damaged fencing, windows and doors. No vegetative debris to be removed outside substation boundary.
- B. Add insulating gravel.
- C. Install new signage on fencing and gates.
- D. Install new padlocks on gates and equipment.
- E. Install new security lighting and external lighting on the control room and outdoor structures.
- F. Install within substation footprint new closed-circuit television (CCTV) system, including approximately 15 cameras, allowing

real-time site monitoring to evaluate critical substation integrity during and after a major event. This mitigation measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches.

Cost Estimate

PLANNING		\$ 23,095.58
ENGINEERING SERVICES & DESIGN		\$ 130,594.11
MANAGEMENT		\$ <u>69,433.99</u>
TOTAL A&E	SUB	\$ 223,123.68
SUBSTATION		\$ 870,627.42
GENERAL CONDITIONS		\$ 117,928.92
CONTINGENCY		\$ <u>63,114.68</u>
ESTIMATE	TOTAL DI COST	\$ 1,274,794.69

DI 927220 Work to be Completed (WTBC) 428 Costs: \$1,274,794.69 - \$223,123.68 (FAAST A&E 335168) = \$1,051,671.01

406 HMP Scope

Project number: 550910 FAASt [Physical Security - Group 1] (Substation)

Damage #927220; FAAST [Monacillos TC 1346/1330]

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

The FAASt [Physical Security - Group 1] (Substation) consists of 5 transmission centers facilities (sites) which are distributed as follows: Viaducto TC (1100/1115), Sabana Llana TC (1646/1647), Hato Rey TC (1419/1420), Monacillos TC (1330/1346), and Manatí TC (8404).

The above facilities are composed of 230/115/38 KV critical substations (transmission and distribution) which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security

practices include facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA/PREPA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns. According to the information provided by the 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, reduce the spacing of the chain-link fence posts from 10ft to 8ft, raise an additional 12" above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, replace the aluminum jalousie window by wind-resistant aluminum-louver windows, replace the exterior fire rated steel doors by 16ga. fire rated steel door and increase the strength of the CCTV (cameras) poles from 90mph to +160mph sustained winds material. 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)*

- 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 **(46ea)** 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, **506 LF**.

Note: 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 = **23 EA**.
 - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **23 EA**.
 - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **46 EA**.
 - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **69 EA**.
 - Ground wire, copper wire, bare stranded, #4 = **69 LF**.
 - Ground wire, copper wire, bare stranded, 4/0 = **460 LF**
- Chain-link fence foundation wall will be raised an additional 12" [**1,841ft(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, **34.1CY**.

Mitigation Measures *(Replacement)*

- 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.

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) =	\$81,777.80
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$35,793.96</u>
Hazard Mitigation Total Cost =	\$117,571.76

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 **\$117,571.76 (Hazard Mitigation Total Cost)**. The cost of this HMP combined with 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).**

927221 FAAST [Manati TC 8404]

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Physical Security - Group 1 under DR-4339 PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, the associated substations related to the Physical Security - Group 1. This project is part of the Physical Security Program which has been classified as critical to system operation, location, and scope complexity.

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

DI 927221 FAAST [Manati TC 8404]

Facilities

Island-wide Substations experienced substantial damages due to Hurricane Maria in September 2017. The facilities addressed by this project are transmission and distribution substations which require significant physical security improvements to avoid safety hazards, violations of federal or local ordinance, potential security breaches, and damage from future severe weather events.

This project includes Viaducto TC substation in Group 1 located in the Manati region.

Name: Manati TC Substation

Construction Year: August 1976

Number: 8404

GPS Coordinates: [REDACTED]

Proposed 428 Public Assistance Scope of Work (SOW):

- A. Remove vegetative and non-vegetative debris from the site and buildings, including damaged fencing, windows and doors. Vegetative debris to be removed extend along the existing perimeter, 1,636 ft long x 3 ft wide x 3 ft height.
- B. Add insulating gravel.
- C. Install new signage on fencing and gates.
- D. Install new padlocks on gates and equipment.
- E. Install new electronic access system for the Control and IT Rooms.
- F. Install new security lighting and external lighting on the control room and outdoor structures.
- G. Install within substation footprint new closed-circuit television (CCTV) system, including approximately 15 cameras, allowing real-time site monitoring to evaluate critical substation integrity during and after a major event. This mitigation measure reduces public safety concerns, potential electric system downtime and improves resiliency. It also will prevent outages caused by possible physical security breaches.

Cost Estimate

PLANNING		\$ 24,314.20
ENGINEERING SERVICES & DESIGN		\$ 137,484.79
MANAGEMENT		\$ <u>73,097.61</u>
TOTAL A&E	SUB	\$ 234,896.60
SUBSTATION		\$ 916,565.29
GENERAL CONDITIONS		\$ 124,151.33
CONTINGENCY		\$ <u>66,444.87</u>
ESTIMATE	TOTAL DI COST	\$ 1,342,058.09

DI 927221 Work to be Completed (WTBC) 428 Costs: \$1,342,058.09- \$234,896.60 (FAASt A&E 335168) = \$1,107,161.49

406 HMP Scope

Project number: 550910 FAASt [Physical Security - Group 1] (Substation)

Damage #927221; FAASt [Manati TC 8404]

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

Location: Manatí, Puerto Rico

GPS Latitude/Longitude: [REDACTED]

Hazard Mitigation Narrative

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

The FAASt [Physical Security - Group 1] (Substation) consists of 5 transmission centers facilities (sites) which are distributed as follows: Viaducto TC (1100/1115), Sabana Llana TC (1646/1647), Hato Rey TC (1419/1420), Monacillos TC (1330/1346), and Manatí TC (8404).

The above facilities are composed of 230/115/38 KV critical substations (transmission and distribution) which requires an effectively physical security improvement applying a comprehensive risk-based security strategies and developing cost-effective security solution to alleviate the risks. The physical security practices include facilities perimeter protection, facilities access control, and company property and assets. The objective is to replace these components based on LUMA/PREPA and industry standards, improve system resiliency, and alleviate safety hazards and environmental concerns. According to the information provided by the 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, reduce the spacing of the chain-link fence posts from 10ft to 8ft, raise an additional 12" above grade for erosion control, strengthen the posts and fence foundation, and prevent the gravel from becoming contaminated with soil and/or dirt, replace the aluminum jalousie window by wind-resistant aluminum-louver windows, replace the exterior fire rated steel doors by 16ga. fire rated steel door and increase the strength of the CCTV (cameras) poles from 90mph to +160mph sustained winds material. 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*)

- 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 **(41ea)** 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, **451 LF**.

Note: 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 = **21 EA**.
 - Pipe ground clamps, heavy duty, bronze, 1-1/4" to 2" diameter = **21 EA**.
 - Pipe ground clamps, heavy duty, bronze, 2-1/2" to 3" diameter = **42 EA**.
 - Crimp 2-way connectors, copper, or aluminum, 600 volt, #4 = **63 EA**.
 - Ground wire, copper wire, bare stranded, #4 = **63 LF**.
 - Ground wire, copper wire, bare stranded, 4/0 = **420 LF**
- Chain-link fence foundation wall will be raised an additional 12" [**1,636ft(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, **30.3CY**.

Mitigation Measures (*Replacement*)

- Replace **(4ea)** control house exterior single doors (3ft x 7ft) by 90-minutes fire-proof 16-gauge doors designed to reduce the wind-borne debris, wind driven rain, water intrusion and high hurricane winds impact and/or effects.
- 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.

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) = \$78,000.00
+ HM (Applicant A&E, Management & General Conditions) = \$34,140.43
Hazard Mitigation Total Cost = **\$112,140.43**

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 **\$112,140.43 (Hazard Mitigation Total Cost)**. The cost of this HMP combined with 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 (((3510 (Engineering And Design Services (Global A&E FAASt 335168)))))	1.00	Lump Sum	(\$209,199.86)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (((9001 (Contract (FAASt 136271))))))	1.00	Lump Sum	\$1,195,242.33	Uncompleted
3510 (((3510 (Engineering And Design Services (Global A&E FAASt 335168))))))	1.00	Lump Sum	(\$394,498.11)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (((9001 (Contract (FAASt 136271))))))	1.00	Lump Sum	\$2,253,925.26	Uncompleted
3510 (((3510 (Engineering And Design Services (Global A&E FAASt 335168))))))	1.00	Lump Sum	(\$216,609.72)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (((9001 (Contract (FAASt 136271))))))	1.00	Lump Sum	\$1,237,577.82	Uncompleted
3510 (((3510 (Engineering And Design Services (Global A&E FAASt 335168)))))	1.00	Lump Sum	(\$223,123.68)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (((9001 (Contract (FAASt 136271))))))	1.00	Lump Sum	\$1,274,794.69	Uncompleted
3510 (((3510 (Engineering And Design Services (Global A&E FAASt 335168))))))	1.00	Lump Sum	(\$234,896.60)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (((9001 (Contract (FAASt 136271))))))	1.00	Lump Sum	\$1,342,058.09	Uncompleted

CRC Gross Cost	\$6,025,270.22
Total 406 HMP Cost	\$665,958.96
Total Insurance Reductions	\$0.00
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CRC Net Cost	\$6,691,229.18
Federal Share (90.00%)	\$6,022,106.27
Non-Federal Share (10.00%)	\$669,122.91

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-10841(13628)	\$6,691,229.18	90 %	\$6,022,106.26	5/3/2023

Drawdown History

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

Obligation History

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

3/31/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 550910

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: \$6,691,229.18 (CRC Gross Cost \$6,025,270.22 + Mitigation Amount \$665,958.96)

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) #927214:

FAASt [Viaducto TC 1100/1115]

Location Description: Viaducto TC 1100/1115

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: \$1,078,717.10 (CRC Gross Cost \$986,042.47 + Mitigation Amount \$92,674.63)

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 FFAST 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 FFAST [Viaducto TC 1100/1115] in the amount of \$192,845.68 (CRC Gross Cost \$986,042.47 – Uninsurable Items \$710,106.53 – Equipment Items \$82,932.00 – Contents Items \$158.26 + Insurable Mitigation Amount \$0.00). Please see "SP550910 – Cost Estimate – Insurance 2" 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 FFAST [Viaducto TC 1100/1115] Equipment in the amount of \$82,932.00. Please see "SP550910 – Cost Estimate – Insurance 2" file.

No Obtain & Maintain Requirement is being mandated for the FFAST [Viaducto TC 1100/1115] Contents because insurable damages do not exceed \$5,000.00.

Damaged Inventory (DI) #927218:

FAAST [Sabana Llana TC 1646/1647]

Location Description: Sabana Llana TC 1646/1647

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: \$2,098,077.53 (CRC Gross Cost \$1,859,427.15 + Mitigation Amount \$238,650.38)

-

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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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.

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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 [Sabana Llana TC 1646/1647] in the amount of \$383,260.66 (CRC Gross Cost \$1,859,427.15 – Uninsurable Items \$1,417,573.68 – Equipment Items \$82,932.00 – Contents Items \$158.26 + Insurable Mitigation Amount \$24,497.45). Please see "SP550910 – Cost Estimate – Insurance 2" 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 [Sabana Llana TC 1646/1647] Equipment in the amount of \$82,932.00. Please see "SP550910 – Cost Estimate – Insurance 2" file.

No Obtain & Maintain Requirement is being mandated for the FAASt [Sabana Llana TC 1646/1647] Contents because insurable damages do not exceed \$5,000.00.

Damaged Inventory (DI) #927219:

FAASt [Hato Rey TC 1419/1420]

Location Description: Hato Rey TC 1419/1420

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: \$1,125,889.86 (CRC Gross Cost \$1,020,968.10 + Mitigation Amount \$104,921.76)

-

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FFAST 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 FFAST [Hato Rey TC 1419/1420] in the amount of \$216,695.62 (CRC Gross Amount \$1,020,968.10 – Uninsurable Items \$735,770.85 – Equipment Items \$80,962.00 – Contents Items \$79.13 + Insurable Mitigation Amount \$12,539.50). Please see "SP550910 – Cost Estimate – Insurance 2" 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 FFAST [Hato Rey TC 1419/1420] Equipment in the amount of \$80,962.00. Please see "SP550910 – Cost Estimate – Insurance 2" file.

No Obtain & Maintain Requirement is being mandated for the FFAST [Hato Rey TC 1419/1420] Contents because insurable damages do not exceed \$5,000.00.

Damaged Inventory (DI) #927220:

FAAST [Monacillos TC 1346/1330]

Location Description: Monacillos TC 1346/1330

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: \$1,169,242.77 (CRC Gross Cost \$1,051,671.01 + Mitigation Amount \$117,571.76)

-

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 FFAST 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 Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Monacillos TC 1346/1330] in the amount of \$246,450.59 (CRC Gross Cost \$1,051,671.01 – Uninsurable Items \$805,141.29 – Contents Items \$79.13 + Insurable Mitigation Amount \$0.00). Please see "SP550910 – Cost Estimate – Insurance 2" file.

No Obtain & Maintain Requirement is being mandated for the FAASt [Monacillos TC 1346/1330] Contents because insurable damages do not exceed \$5,000.00.

Damaged Inventory (DI) #927221:

FAASt [Manati TC 8404]

Location Description: Manati TC 8404

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: \$1,219,301.92 (CRC Gross Cost \$1,107,161.49 + Mitigation Amount \$112,140.43)

-

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 [Manati TC 8404] in the amount of \$214,173.67 (CRC Gross Cost \$1,107,161.49 – Uninsurable Items \$815,854.18 – Equipment Items \$81,947.00 – Contents Items \$79.13 + Insurable Mitigation Amount \$4,892.49). Please see "SP550910 – Cost Estimate – Insurance 2" 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 [Manati TC 8404] Equipment in the amount of \$81,947.00. Please see "SP550910 – Cost Estimate – Insurance 2" file.

No Obtain & Maintain Requirement is being mandated for the FAASt [Manati TC 8404] 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).

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").

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 \$5,000.00. 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:

1. 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
2. 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, Equipment	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASSt [Viaducto TC 1100/1115] in the amount of \$192,845.68. An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASSt [Viaducto TC 1100/1115] Equipment in the amount of \$82,932.00. No Obtain & Maintain Requirement is being mandated for the FAASSt [Viaducto TC 1100/1115] Contents because insurable damages do not exceed \$5,000.00.	\$275,777.68
Wind	Building, Equipment	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASSt [Sabana Llana TC 1646/1647] in the amount of \$383,260.66. An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASSt [Sabana Llana TC 1646/1647] Equipment in the amount of \$82,932.00. No Obtain & Maintain Requirement is being mandated for the FAASSt [Sabana Llana TC 1646/1647] Contents because insurable damages do not exceed \$5,000.00.	\$466,192.66

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Building, Equipment	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 [Hato Rey TC 1419/1420] in the amount of \$216,695.62. 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 [Hato Rey TC 1419/1420] Equipment in the amount of \$80,962.00. No Obtain & Maintain Requirement is being mandated for the FAASt [Hato Rey TC 1419/1420] Contents because insurable damages do not exceed \$5,000.00.	\$297,657.62
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 [Monacillos TC 1346/1330] in the amount of \$246,450.59. No Obtain & Maintain Requirement is being mandated for the FAASt [Monacillos TC 1346/1330] Contents because insurable damages do not exceed \$5,000.00.	\$246,450.59
Wind	Building, Equipment	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 [Manati TC 8404] in the amount of \$214,173.67. 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 [Manati TC 8404] Equipment in the amount of \$81,947.00. No Obtain & Maintain Requirement is being mandated for the FAASt [Manati TC 8404] Contents because insurable damages do not exceed \$5,000.00.	\$296,120.67

406 Mitigation

There is no additional mitigation information on **FAASt [Physical Security - Group 1] (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 Planning Board prior to initiating work and comply with any conditions of the permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Endangered Species Act (ESA) - The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- Endangered Species Act (ESA) - Conservation Measures 1-6 for Puerto Rican Boa (D#: 927221): 1. Inform all personnel about the potential presence of the PR boa and the VI boa in areas where the proposed work will be conducted. Photographs of the PR and VI Boa are to be prominently displayed at the site. The recipient must ensure that project personnel is able to correctly identify a PR or VI boa. For information on PR boa, please visit:

<https://ecos.fws.gov/ecp/species/6628>. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area must be delineated, buffer zones, and areas to be excluded and protected, should be clearly marked in the project plan and in the field to avoid further habitat degradation into forested areas. Once areas are clearly marked, and prior to any construction activity, including site preparation, project personnel able to correctly identify a PR or VI boa must survey the areas to be cleared to ensure that no boas are present within the work area. Vehicle and equipment operation must remain on designated access roads/paths and within rights-of way. 3. If a PR boa is found within any of the working or construction areas, activities should stop in the area where the boa was found. Do not capture the boa. If boas need to be moved out of harm's way, project personnel designated by the recipient shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #: 787-724-5700, 787-230-5550, 787-771-1124). If immediate relocation is not an option, project-related activities at this area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue. 4. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the boa (PRDNER phone #: 787-724-5700, 787-230-5550, 787-771-1124). If not possible, the animal should be left alone until it leaves the vehicle on its own. 5. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If PR boas are, found within debris piles, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future. 6. For all boa sightings (dead or alive), personnel designated by the recipient must record the time and date of the sighting and the specific location where the boa was found. Data should also include a photo of the animal dead or alive, and site GPS coordinates, and comments on how the animal was detected and its behavior. If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures had been implemented and what actions will be taken to avoid further killings. All boa sighting reports should be sent to the USFWS Caribbean Ecological Services Field Office, Marelisa Rivera - Deputy Field Supervisor, 787- 851-7297 extension 206, 787-510-5207, marelisa_rivera@fws.gov.

- National Historic Preservation Act (NHPA) - 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 to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Physical**

Final Reviews

Final Review

Reviewed By MARTINEZ SANTIAGO, ISRAEL

Reviewed On 04/12/2023 10:06 AM AST

Review Comments

FEMA Final Review completed. Project ready for Recipient Review.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 04/12/2023 2:53 PM AST

Review Comments

Recipient reviewed completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$6,691,229.18 for subaward number 10841 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 04/19/2023

Department of Homeland Security Federal Emergency Management Agency

General Info

Project #	659968	PW#	11318	Project Type	Specialized
Project Category	F - Utilities			Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [San Germán Streetlighting] (Distribution)			Event	4339DR-PR (4339DR)
Project Size	Large			Declaration Date	9/20/2017
Activity Completion Date	9/20/2027			Incident Start Date	9/17/2017
Process Step	Obligated			Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #1201365; FAASt Distribution Streetlighting - San Germán

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:** San Germán Distribution Streetlighting
- **Facility Description:** The San Germán municipality has a total of 6377 luminaires of which damage was estimated for 70% of these luminaires.
 - Pole – This can be either a standalone structure intended to house a streetlight, or a utility pole shared with other overhead utilities
 - Arm – A piece of hardware affixed to a pole to which a luminaire is mounted. The arm serves to position the streetlight over the street for optimal lighting
 - Luminaire/Light Bulb – The light emitting part of a streetlight
 - Light controller (e.g., photocell) – A hardware device affixed to the luminaire which controls the operating mode
 - Communication network – A wired or wireless system that allows the smart streetlight to communicate with other devices and the control system
 - Technology control system – A software platform that allows a remote operator to set the operating parameters for the smart streetlight or manually override the parameter if needed
- **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

1201365 **FAASt Distribution Streetlighting - San Germán**

Introduction

The purpose of this document is to submit for approval the Detailed Scope of Work (SOW) to COR3 and FEMA for the Distribution Streetlighting San Germán project (San Germán municipality) under DR-4339- PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, replace, and upgrade the eligible facilities in the municipality of San Germán.

LUMA submits this Detailed SOW pursuant to the T&D O&M Agreement between Puerto Rico, 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 E which collectively provides the necessary consent for LUMA Energy, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

Facilities

This project is part of the breakdown division for the Distribution Streetlighting Program which will be impacting each of the municipalities. Characteristics were previously defined to serve the municipality of San Germán according to the priorities and findings after conducting the assessments.

Physical Address	San Germán, Puerto Rico
Coordinates	Please refer to Appendix F for Coordinates

Project Scope of Work

Streetlight Repairs:

Proposed 428 Public Assistance Scope of Work:

Lighting Components Replacement

- Remove existing lighting components, including photo controls, luminaires, arms, and associated hardware, and install new lighting components in the same location. No ground disturbance will be required as part of this scope of work.
- Brushing will be required in locations as identified in Appendix K ("Brushing/Clearing Req'd" column) to enable construction. Brushing refers to the removal and clearing of vegetation solely to the extent that it allows crews to conduct work. The brushing of vegetation will be limited to a 10 ft radius surrounding the surface of the pole but not to exceed the width of the right-of-way for the exclusive purpose of gaining access to the pole to conduct repairs. No tree removal will be completed as part of this scope.
- All work for this program will be performed within the current electrical right-of-way for each of the municipalities.

Pole Replacement

- Remove existing streetlight poles, including lighting components and install new streetlight poles, including lighting components, in the same location. If unable to install the replacement in the same location, the pole will be installed within 3 feet. All pole installations are to replace existing poles locations; no new locations are included in this scope of work. Refer to Appendix K column D (Soil area and depth impact) for the depths of the poles to be installed.
- Remove the existing foundations as specified in Appendix G- Cost Estimate and replace them with a new concrete foundation in the same location. Refer to Appendix J for design criteria. 1
- Brushing will be required in locations as identified in Appendix K ("Brushing/Clearing Req'd" column) to enable construction. Brushing refers to the removal and clearing of vegetation solely to the extent that it allows crews to conduct work. The brushing of vegetation will be limited to a 10 ft radius surrounding the surface of the pole but not to exceed the width of the right-of-way for the exclusive purpose of gaining access to the pole to conduct repairs. No tree removal will be completed as part of this scope.

- Poles are in close proximity to the roads and are site accessible. The construction of access roads is not required for this scope of work. (Refer to Appendix K in "Site Accessible" column)
- All work for this program will be performed within the current electrical right-of-way for each of the municipalities.
- Coordinates for streetlight poles where ground disturbance is anticipated can be found in Appendix G2 and Appendix K3 .
- This scope of work will not affect water or sewer utility services.

Trenching/Underground (Replacing Underground Circuit)

- Remove existing trenching and install new trenching within our existing 5' electrical Right of Way as specified in Appendix K. The trench's dimensions are described by LUMA Trench Standard STL-16 (Appendix I), which states that the typical trench width is 1 foot, and the typical trench depth is 3.5 feet. For this project, the typical trench was defined to have an average length of 100 feet and follow a straight line between the streetlight pole and its power connection. This activity does not require any vegetation clearance and/or access clearance.
- Coordinates for streetlight poles where ground disturbance is anticipated can be found in Appendix G2 and Appendix K3 . • This scope of work will not affect water or sewer utility services.

Material Disposal

- Photocells are considered hazardous waste and will be disposed of by the contractor in approved facilities in compliance with applicable federal and local laws and regulations. Material amounts will be provided by a certified management contractor performing a site evaluation calculation for asbestos, lead paint, roof material.
- No transformer will be removed or disposed of during the Program.
- The type of debris that may be found in the process of removal are luminaires, pole arms, photocells, metal scrap, wiring, concrete, steel, and wood poles, etc. The debris will be separated and taken to an approved waste disposal facility in compliance with applicable federal and local laws and regulations.

Staging Area

- All materials are stored and dispatched from the assigned LUMA's Regional Warehouse. The warehouse assigned is the Arecibo Warehouse, 18°14'36.3"N 67°09'33.7"W. Refer to Appendix M for Warehouse location.

Specific List of Permits Required:

- DTOP Endorsements & Municipality Notifications.
- Excavation and Demolition Notification in Department of Transportation and Public Works Agency - (DTOP).
- LUMA will provide proof of all permits as a Condition of FEMA Record of Environmental Considerations.

Fill, gravel, sand, etc.:

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

List of Equipment to be used:

- Skid Steer, Excavator, Dump trucks, Manlifts, 120-Ton Motor Crane, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine and Flatbed platform.

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the below table. The cost estimate was developed utilizing preliminary Architectural and Engineering design information and may be subject to change. LUMA has identified risks and allowances (10% of project cost) for the mitigation of potential known risks.

Project Cost Estimate	428 Estimate
Planning, Permits and Applications (FAASt 335168)	\$112,236
Environmental Management (FAASt 335168)	\$635,850

Project Management (FAASt 335168)	\$1,320,786
Engineering (FAASt 335168)	\$2,550,335
Construction	\$28,528,976
Contingency	\$2,320,373
TOTAL	\$35,468,555
428 FAASt Project 659968	\$30,849,348
FAASt Project A&E 335168	\$4,619,207

428 Work To Be Completed (WTBC): \$35,468,555

428 A&E Deduction (Global A&E FAASt 335168) -\$4,619,207

428 Project Total Cost: \$30,849,348

For detailed cost estimate, please refer to document labeled: Appendix G - Cost Estimate San Germán Municipality.xlsx

Project Notes:

1. Refer to detailed SOW provided in document FEMA Detailed Scope of Work San Germán
2. For reference documents Appendix A thru M, see files attached in document section.
3. For EHP Requirements, refer to pages 5 to 7 of the detailed SOW and reference documents: Appendix K & L.
4. Architectural and Engineering (A&E) costs are deducted given previously obligated Global A&E Project for the subject FAASt PREPA work (see project: 335168 - FAASt A&E PREPA).
5. This project is part of a FAASt project, please reference project 136271.

406 HMP Scope

Project number: 659968; FAASt [San Germán Streetlighting] (Distribution)

Damage # 1201365; **FAASt Distribution Streetlighting - San Germán (Distribution)**

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

Location: San Germán, 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 from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

In the San Germán Municipality, PREPA has a total of 6,130 ea. streetlights luminaries. The Method of Repair (MOR) include the replacement of the damage lighting components including photocells, luminaires, arms, and associated hardware. Also include the replacement of the damage distribution and streetlight

poles (wood, concrete, galvanized & aluminum), the replacement of the aerial secondary wiring connections, the construction of new concrete base for the aluminum streetlight poles and new trenches for the streetlighting secondary underground circuits. According to the information provided by the Applicant, due to the high velocity hurricane winds, wind-blown debris, and prolonged heavy rain, were the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the Applicant is proposing as a mitigation measure, increase the strength of the poles, arms, aluminum poles breakaway bases, and foundations (concrete bases) by increasing the wind tolerance of all materials to 160mph. Note: The FEMA Accelerated Award Strategy (FAAST) MOR included the PREPA distribution standards and specifications that were based on a 90mph sustained winds for all materials. Although in PREPA Technical Communication #13-02 (August 22, 2013) a design-criteria of 145mph winds were published, the specifications for streetlighting material were never revised, and in the specification documents, the 90mph winds stayed as the requirement for procurement purposes of all streetlighting materials. The 160mph wind tolerance mitigation measure, will protect and make the affected infrastructure more resistant, stronger, and resilient 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 (*Replacement*)

1. To avoid damage in a future event, the Applicant is proposing as a mitigation measure, increase the strength of the poles, arms, aluminum poles breakaway bases, and foundations (concrete bases) by increasing the wind tolerance of all materials to 160mph. The FAASt MOR used PREPA distribution standards and specifications that were based on a 90mph sustained winds for all materials. Although in PREPA Technical Communication #13-02 (August 22, 2013) a design-criteria of 145mph winds were published, the specifications for streetlighting material were never revised, and in the specification documents, the 90mph winds stayed as the requirement for procurement purposes of all streetlighting materials. The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.1 of the PAPPG V3.1.

406 Mitigation Scope of Work:

- Replace (4,295 ea.) 4ft galv. steel arms (90mph by 160mph winds resistant) for (steel/concrete/wood) poles.
- Replace (287 ea.) 8ft galv. steel arms (90mph by 160mph winds resistant) for (steel/concrete/wood) poles.
- Replace (381 ea.) 4ft galv. steel arms (90mph by 160mph winds resistant) for (octagonal concrete) poles.
- Replace (26 ea.) 8ft galv. steel arms (90mph by 160mph winds resistant) for (octagonal concrete) poles.
- Replace (70 ea.) 12ft aluminum arm (90mph by 160mph winds resistant) for (aluminum) poles.
- Replace (1 ea.) 1ft aluminum arm (90mph by 160mph winds resistant) for (aluminum) poles.
- Replace (241 ea.) 33ft octagonal concrete poles by (241 ea.) 39ft octagonal concrete poles.
- Replace (2,491 ea.) 35ft galvanized poles by (2,491 ea.) 35ft S3.5 galvanized poles.
- Replace (53 ea.) 30ft aluminum poles by (53 ea.) 40ft aluminum poles.
- Replace (43 ea.) 30ft aluminum poles breakaway bases by (43 ea.) 40ft aluminum poles breakaway bases.
- Replace (53 ea.) 30ft aluminum poles concrete bases [2.5ft(D) x 5.5ft(H)] by (53 ea.) 40ft aluminum poles concrete bases [3ft(D) x 10ft(H)].

Hazard Mitigation Proposal (HMP) Cost:

Total Net Hazard Mitigation Cost (Base Cost) =	\$3,004,065.00
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$1,029,513.00</u>
Hazard Mitigation Total Cost =	\$4,033,578.00

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 \$4,033,578.00 (Hazard Mitigation Total Cost). The cost of this HMP combined with all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

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

Cost

Code	Quantity	Unit	Total Cost	Section
3510 (Engineering And Design Services (A&E deduction from project 335168 - FAASt A/E Global PREPA))	1.00	Lump Sum	(\$4,619,207.00)	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (Total Cost Estimate - FAASt 136271))	1.00	Lump Sum	\$35,468,555.00	Uncompleted

CRC Gross Cost \$30,849,348.00

Total 406 HMP Cost \$4,033,578.00

Total Insurance Reductions \$0.00

CRC Net Cost \$34,882,926.00

Federal Share (90.00%) \$31,394,633.40

Non-Federal Share (10.00%) \$3,488,292.60

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-11318(13630)	\$34,882,926.00	90 %	\$31,394,633.40	5/3/2023

Drawdown History

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

Obligation History

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

3/22/2023

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 659968

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: \$34,882,926.00 (CRC Gross Cost \$30,849,348.00 + Mitigation Amount \$4,033,578.00)

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: No

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

Damaged Inventory (DI) #1201365:

FAAST Distribution Streetlighting - San Germán

Location: San Germán Distribution Streetlighting

GPS Coordinates: XXXXXXXXXX

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: Not insured

SOV / Schedule Amount: Not insured

Applicable Deductible Amount: N/A

Damage Inventory Amount: \$34,882,926.00 (CRC Gross Cost \$30,849,348.00 + Mitigation Amount \$4,033,578.00)

-

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 as coverage is not anticipated. 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._

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Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAASt Distribution Streetlighting - San Germán because the facility does not meet the definition of building, equipment, contents, or vehicle.

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).

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

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [San Germán Streetlighting] (Distribution)**.

406 Mitigation

There is no additional mitigation information on **FAASt [San Germán Streetlighting] (Distribution)**.

Environmental Historical Preservation

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

Yes

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 - Floodplains - Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Endangered Species Act (ESA) - Conservation Measures 1-6 for Puerto Rican Boa (D#1201365): 1. Inform all personnel about the potential presence of the PR boa and the VI boa in areas where the proposed work will be conducted. Photographs of the PR and VI Boa are to be prominently displayed at the site. The recipient must ensure that project personnel is able to correctly identify a PR or VI boa. For information on PR boa, please visit: <https://ecos.fws.gov/ecp/species/6628>. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area must be delineated, buffer zones, and areas to be excluded and protected, should be clearly marked in the project plan and in the field to avoid further habitat degradation into forested areas. Once areas are clearly marked, and prior to any construction activity, including site preparation, project personnel able to correctly identify a PR or VI boa must survey the areas to be cleared to ensure that no boas are present within the work area. Vehicle and equipment operation must remain on designated access roads/paths and within rights-of way. 3. If a PR boa is found within any of the working or construction areas, activities should stop in the area where the boa was found. Do not capture the boa. If boas need to be moved out of harm's way, project personnel designated by the recipient shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #: 787-724-5700, 787-230-5550, 787-771-1124). If immediate relocation is not an option, project-related activities at this area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue. 4. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the boa (PRDNER phone #: 787-724-5700, 787-230-5550, 787-771-1124). If not possible, the animal should be left alone until it leaves the vehicle on its own. 5. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If PR boas are, found within debris piles, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal. If

debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future. 6. For all boa sightings (dead or alive), personnel designated by the recipient must record the time and date of the sighting and the specific location where the boa was found. Data should also include a photo of the animal dead or alive, and site GPS coordinates, and comments on how the animal was detected and its behavior. If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures had been implemented and what actions will be taken to avoid further killings. All boa sighting reports should be sent to the USFWS Caribbean Ecological Services Field Office, Marelisa Rivera - Deputy Field Supervisor, 787- 851-7297 extension 206, 787-510-5207, marelisa_rivera@fws.gov.

- Endangered Species Act (ESA)- Conservation Measure 8 for *Amazona vittata* and *Caprimulgus noctitherus* (D#1201365): 8. During breeding seasons (see below), nest surveys shall be conducted if a project occurs in a species' range. Nest searches must be conducted by qualified personnel with the appropriate DNER permits prior to start of work. If nesting activity is detected, all construction activities or human disturbance must be avoided within a 200-meter buffer to the closest nest. This avoidance strategy must be kept until fledglings successfully leave the nest permanently. Outside the nesting season, if a nest is encountered, work shall not interfere with the species until they have left the site. If nesting activity is detected, all construction activities or human disturbance must be avoided within a 200-meter buffer to the closest nest. This avoidance strategy must be kept until juvenile birds fledge the nest and are permanently gone. Nesting season for Puerto Rican parrot (*Amazona vittata*): February to June; For all nest sightings, the Applicant must record the time and date of the sighting and the specific location where it was found. Data should also include a photo of the nest and eggs, relocation site GPS coordinates, and the time and date of the relocation. All sightings and incidental lethal take reports should be sent to the USFWS Caribbean Ecological Services Field Office, Marelisa Rivera - Deputy Field Supervisor, 787-851-7297 extension 206, 787-510-5207, marelisa_rivera@fws.gov.
- Endangered Species Act (ESA) - The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- 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 to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- NEPA Determination - 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.
- 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 [San Germán Streetlighting] (Distribution)**.

Final Reviews

Final Review

Reviewed By MARTINEZ SANTIAGO, ISRAEL

Reviewed On 04/13/2023 10:00 AM AST

Review Comments

FEMA Final Review completed. Project ready for Recipient Review.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 04/14/2023 9:21 AM AST

Review Comments

Recipient review completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$34,882,926.00 for subaward number 11318 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 04/24/2023