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

IN RE:	**CASE NO. NEPR-MI-2021-0002**
IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY'S 10-YEAR INFRASTRUCTURE PLAN-DECEMBER 2020	**SUBJECT: Submission of Scope of Work and List of Updated Projects and Request for Confidentiality and Supporting Memorandum of Law**

MOTION SUBMITTING SCOPE OF WORK AND UPDATED LIST OF PROJECTS AND REQUEST FOR CONFIDENTIALITY AND SUPPORTING MEMORANDUM OF LAW

TO THE PUERTO RICO ENERGY BUREAU:

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

I. Submittal of Scopes of Work and Request for Confidentiality

1. On March 26, 2021, this Puerto Rico Energy Bureau ("Energy Bureau") issued a Resolution and Order in the instant proceeding (the "March 26 Order"), ordering, in pertinent part, that the Puerto Rico Electric Power Authority ("PREPA") submit to the Energy Bureau the specific 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. *See* March 26 Order on pages 18-19. This Energy Bureau thereafter determined that this directive applied to both PREPA and LUMA. *See* Resolution and Order of August 20, 2021 ("August 20 Order") on page 3.

[1] Register No. 439372.

2. Consequently, LUMA has submitted to this Energy Bureau several Transmission and Distribution projects ("T&D Projects") on July 8, 2021 (twenty-eight (28) Scopes of Work and an itemized list of T&D Projects), August 30, 2021 (twenty-nine (29) SOWs and an updated list of T&D Projects) and October 4, 2021 (thirty-eight (38) SOWs and an updated list of T&D Projects), February 2, 2022 (three (3) SOWs and an updated list of T&D Projects), May 20, 2022 (one (1) SOW and an updated list of T&D Projects), July 29, 2022 (four (4) SOWs and an updated list of T&D projects), August 10, 2022 (two (2) SOWs and an updated list of T&D projects), and November 11, 2022 (sixty (60) SOWs and an updated list of T&D projects). The Energy Bureau has approved all the T&D Project SOWs submitted by LUMA as of August 10, 2022.

3. In accordance with the March 26 Order, LUMA hereby submits to the Energy Bureau an SOW for T&D Project for this Energy Bureau's review and approval prior to submittal to COR3 and FEMA in thirty (30) days for the following projects: "Protection Management Systems," dated October 28, 2022. *See Exhibit 1*.

4. LUMA also submits to this Energy Bureau an updated Project List, containing a current list of the total initial SOWs submitted to the Energy Bureau, a list of approved projects by the Energy Bureau with assigned FEMA Accelerated Awards Strategy ("FAASt") numbers and a list of projects with approved FEMA funding obligations. *See Exhibit 2*.

5. Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (known as the "Stafford Act"), administered by FEMA, provides funding through grants to states, local, tribal, and territorial governments through its Public Assistance Program to help communities respond to and recover from major disasters. LUMA has presented and received approval from the Energy Bureau for 142 initial SOWs for projects under Section 428 as of this

date. The Energy Bureau's approval of these SOWs allows LUMA to engage with COR3 and federal agencies to seek different federal funding sources. These include FEMA Hazard Mitigation under Section 406 of the Stafford Act. Section 406 provides FEMA with discretionary authority to fund mitigation measures and repair disaster-damaged facilities. The application for and determination of Section 406 funding is part of the preliminary design phase for projects approved by the Energy Bureau and assigned FAASt numbers by FEMA to receive Section 428 funding. At the time of submission of the initial SOW to the Energy Bureau, it is unknown whether and in what amounts funding through Section 406 will be available, if any. LUMA develops proposals for additional hazard mitigation measures consistent with the damages. The proposals are reviewed and approved by FEMA and COR3. LUMA's efforts to add mitigation measures under Section 406 are consistent with LUMA's commitment to pursue federal funding from all potential sources, maximize available funds, and efficiently execute proposed projects.

6. LUMA hereby requests that *Exhibit 1* be maintained confidential and is submitting a redacted version for public disclosure and an unredacted non-public version under seal of confidentiality. LUMA submits below its Memorandum of Law stating the legal basis for which the unredacted version of *Exhibit 1* should be filed under seal of confidentiality. As will be explained below, portions of the SOW in *Exhibit 1* should be protected from public disclosure as these documents contain confidential information associated with Critical Energy Infrastructure Information ("CEII") as defined in federal regulations, 18 C.F.R. §388.113; 6 U.S.C. §§ 671-674, and per the Energy Bureau's Policy on Management of Confidential Information (the "SOWs with CEII"). *See* Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009 ("Policy on Management of Confidential Information"), issued on August 31, 2016, as

amended by the Resolution dated September 20, 2016. In addition, the SOW includes personal identifying information of individuals who are LUMA staff or contractors protected under Puerto Rico's legal framework on privacy emanating from the Puerto Rico Constitution and should also be protected pursuant to the Energy Bureau's Policy on Management of Confidential Information.

II. Memorandum of Law in Support of Request for Confidentiality

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

7. The bedrock provision on the management of confidential information filed before this Energy Bureau is Section 6.15 of Act 57-2014, known as the "Puerto Rico Energy Transformation and Relief Act.". It provides, in pertinent part, that: "[i]f any person who is required to submit information to the [Energy Bureau] believes that the information to be submitted has any confidentiality privilege, such person may request the [Energy Bureau] to treat such information as such […]" 22 LPRA §1054n. If the Energy Bureau determines, after appropriate evaluation, that the information should be protected, "it shall grant such protection in a manner that least affects the public interest, transparency, and the rights of the parties involved in the administrative procedure in which the allegedly confidential document is submitted." *Id.* §1054n(a).

8. 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).

9. 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 Puerto Rico Rules of Evidence.

10. 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.

11. 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).

12. Energy Bureau 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

13. The SOW with CEII included in *Exhibit 1* contains portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the SOW with CEII warrants 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.[2] In at least two proceedings on Data Security,[3] and Physical Security,[4] this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

14. 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

[2] *See e.g., In re Review of LUMA's System Operation Principles*, NEPR-MI-2021-0001 (Resolution and Order of May 3, 2021); *In re Review of the Puerto Rico Power Authority's System Remediation Plan*, NEPR-MI-2020-0019 (order of April 23, 2021); *In re Review of LUMA's Initial Budgets*, NEPR-MI-2021-0004 (order of April 21, 2021); *In re Implementation of Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, NEPR MI 2020-0012 (Resolution of January 7, 2021, granting partial confidential designation of information submitted by PREPA as CEII); *In re Optimization Proceeding of Minigrid Transmission and Distribution Investments*, NEPR MI 2020-0016 (where PREPA filed documents under seal of confidentiality invoking, among others, that a filing included confidential information and CEII); *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, CEPR-AP-2018-0001 (Resolution and Order of July 3, 2019 granting confidential designated and request made by PREPA that included trade secrets and CEII) *but see* Resolution and Order of February 12, 2021 reversing in part, grant of confidential designation).

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

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

designation to several portions of LUMA's Initial Budgets and Responses to Requests for Information. *See* Resolution and Order of April 22, 2021, on Initial Budgets, table 2 on pages 3-4, and Resolution and Order of April 22, 2021, on *Responses to Requests for Information*, table 2 on pages 8-10, Case No. NEPR-MI-2021-0004; Resolution and Order of April 23, 2021, on Confidential Designation of Portions of LUMA's System Remediation Plan, table 2 on page 5, and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

15. 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.

16. 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.

17. 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.*

18. 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").[5]

[5] Regarding the 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 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 an 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.

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).[6]

19. The SOW 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 the SOW. 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 SOW with CEII in *Exhibit 1* from disclosure, given the nature and scope of the details included in those portions of the Exhibit.

20. Based on the above, LUMA respectfully submits that the SOW with CEII should be designated as CEII. This designation is a reasonable and necessary measure to protect the specific location and other engineering and design information of the energy facilities listed or discussed in the SOW 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

[6] CII includes the following types of information:

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

materials constitute CEII that should be maintained confidentially to safeguard their integrity and protect them from external threats.

21. In addition, the SOW in *Exhibit 1* contains the name, signature, and role of an individual who is a LUMA employee and a contractor, respectively, who reviewed the SOW as part of LUMA's internal review and approval of each document.[7] LUMA respectfully requests that information on the names, signatures, and roles of these individuals be maintained confidentially in the context that these reveal details of their employment duties and that their protection is in the public interest and aligned with Puerto Rico's legal framework on privacy which protects from the disclosure of personal information. *See, e.g.*, Const. ELA, Art. II, Sections 8 and 10, which protect the right to control personal information and distinctive traits, which applies *ex proprio vigore* and against private parties. *See also e.g. Vigoreaux v. Quiznos*, 173 D.P.R. 254, 262 (2008); *Bonilla Medina v. P.N.P.*, 140 D.P.R. 294, 310-11 (1996), *Pueblo v. Torres Albertorio*, 115 D.P.R. 128, 133-34 (1984). *See also* Act 122-2019, Article 4(vi) (which provides, as an exception to the rule on public disclosure, information the disclosure of which could invade the privacy of third parties or affect their fundamental rights); and Article 3(c) of Act 122-2019 (stating that personnel files and similar information does not constitute public information subject to disclosure). It is respectfully submitted that the redaction of the aforementioned information does not affect the public's or the Energy Bureau's review of the SOW nor interfere with processes before this Energy Bureau. Therefore, on balance, the public interest to protect privacy weighs in favor of protecting the relevant portions of the SOW.

[7] This employee and contractor are different from the top tier employees who have in the past signed these documents and who may be publicly known.

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 hallmarks of 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	Protection Management Systems	Page 1	Right to privacy (*see, e.g.*, Const. ELA, Art. II, Sections 8 and 10)	November 16, 2022
		Pages 3 and 6	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	November 16, 2022

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **approve** the SOW for T&D Project submitted as *Exhibit 1* to this Motion; **grant** the request for confidential treatment of *Exhibit 1* and **accept** the updated list of T&D projects submitted as *Exhibit 2* to this Motion.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 16th November 2022.

I hereby certify that I filed this Motion using the electronic filing system of this Energy Bureau and that I will send an electronic copy of this Motion to the attorneys for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law, and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law.

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Exhibit 1

FEMA Project Scope of Work

Project Name:

PROTECTION MANAGEMENT SYSTEMS

Revision: 1

Date: 28OCT2022

APPROVALS

The signatures below formally approve the FEMA Project Scope of Work Template.

Grant Manager's Name	Signature	Date
REDACTED	REDACTED	REDACTED 2022.11.10 17:49:02 04'00'
Department VP's Name	**Signature**	**Date**
REDACTED	REDACTED	REDACTED Date: 2022.11.10 16:25:46 -04'00'

Contents

Overview

Project Name:	Protection Management Systems
Project Type:	Restoration to Codes/Standards
Region:	San Juan
Damage Number:	223318
Damaged Inventory/Asset Category:	IT/OT
FEMA Project Number:	<Provided by FEMA>

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4339-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation for a specific project.

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

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

Facilities

Facilities List

Name	Number	GPS Start	GPS End	Voltage (kV)
Sabana Llana campus	N/A	REDACTED	REDACT	N/A

Note: centroid GPS coordinates.

Facilities Description

The Protection Management Systems to be deployed within this Operational Technology – IT/OT effort are software-based platforms. Computing and networking hardware assets will support the operation and security of the Device Settings Repository, Automated Protection Device Testing Platform, and Secure Access Management Platform. These software platforms are critical and necessary components to the setting, testing, issuance, and governance of protective devices deployed in the reconstructions of the Puerto Rico power system and are closely related to several other ongoing efforts to restore and improve protection capabilities at LUMA.

Due to the close association of these IT/OT software platforms with physical protection and control testing platforms, the same facility assigned for LUMA's Test and Technology Laboratory (planned under a separate project - FAASt# 679006) has been identified preliminarily for the deployment of the servers, associated hardware, and Secure Access Management application proposed under the scope of this document. Locating the testing and management systems within the same facility consolidates the protection-related components that facilitate LUMA's critical device deployment process (including setting, testing, issuance, and management).

The Sabana Llana campus has been preliminarily assigned for LUMA's Test and Technology Laboratory facility. The spaces feature a total area of approximately 14,000 sq ft of interior space. During implementation, detailed engineering locations may change to fit project needs. Work related to these facilities is not in the scope of this project and no duplication of efforts will be undertaken between the two projects.

For full functionality of remote relay access, additional hardware and communications infrastructure may be required to be installed at substations. The scope of this project covers the deployment of the Secure Access Management platform itself, although full functionality connections to each substation may be achieved across a greater period of time as the necessary infrastructure is installed.

Project Scope

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

Rebuilding the Puerto Rico power system after the extensive damage caused by Hurricanes Maria and Irma includes the reconstruction and modernization of substations and bringing all Transmission and Distribution systems up to codes and standards to support improved reliability and higher levels of resilience. Protection and control systems are critical components in the safe and reliable operation of the Electrical Grid. Insufficient or improper implementation of protection systems can lead to significant public safety, security, and economic consequences, ranging from excessive interruptions of electrical service, cybersecurity data breaches, and severe damage of critical electrical infrastructure. To reduce the potential risks, utilities typically rely on development and deployment processes to ensure that protection systems are properly implemented in the field.

Modern protection and control devices use microprocessor-based devices with complex settings, secure access requirements and high data production abilities. The management of protection and control device settings is one aspect that could see significant benefit from the industry-wide shift towards digital transformation. The deployment of greater numbers of microprocessor-based multi-function devices, as well as changing operational and regulatory environments have placed greater requirements on the tracking, testing, and access of device configurations and statuses.

LUMA's substation reconstruction plans include the engineering, hardware, and infrastructure components to implement and execute a modern protection device deployment process. This project is one aspect of LUMA's modernization effort to leverage digital technologies to improve the reliability and efficiency of mission-critical Protection and Control activities. These modern Protection Management Systems will provide significantly enhanced capabilities in the management, implementation, accessibility, and maintenance of protection device configurations. In contrast to existing systems and practices, which rely heavily on manual management, transcription, and retrieval of data (with negative implications on reliability and efficiency), the new systems provide the advantages in data processing and automation inherent to software solutions with reduced human error and faster processing for positive impact in the overall system operation and resilience. As part of the settings process, this infrastructure synergizes with hardware testing capabilities which are crucial to the quality and effectiveness of protection device deployment. Further, these new systems have the expansion potential to assist in other initiatives such as reporting, compliance, and data analytics. Finally, these systems facilitate cybersecurity data and compliance requirements, with greater controls on data access and distribution. Several of these

cybersecurity compliance requirements (such as NERC CIP-007 Systems Security Management and CIP-010 Configuration Change Management) can only be feasibly met with robust Protection Management System tools due to the large volume of data and tracking required across the applicable devices.

The Protection Management Systems outlined in this document are critical and necessary for the safe and reliable of the Puerto Rico Electrical Grid. Long-term continued operation without this modern infrastructure carries the risk of damage to critical system infrastructure, cybersecurity data breaches, and excessive service interruptions, with potentially significant impact to public safety and to Puerto Rico's economy and security.

The scope of work consists of the planning, design, procurement, and implementation of new Protection Management Systems to provide enhanced capabilities in the management, implementation, accessibility and maintenance of critical protection device configurations which LUMA considers an essential component of the system recovery. These new systems consist of three component software platforms:

- **Device Settings Repository** is a storage and management system for configurable Protection and Control equipment (such as relays and controllers). This application is critical to the relay settings and issuance process, as settings files and status are advanced and tracked through the repository.
- **Automated Protection Device Testing Platform** facilitates the execution of device testing routines during relay deployment. This platform enables standardized and consistent testing of relay protection functionalities, including configuration of test set hardware and recording of results.
- **Secure Access Management** is a platform to enable remote access to field-deployed devices. These systems can provide significantly improved capability in settings management, including remote deployment of revised configurations as well as facilitating data verification processes for entries in the repository. Further, these remote access capabilities can benefit the response time of critical events, such as retrieval of events record to support fault investigations.

Figure 1 shows how these platforms will interface with other components of the IT/OT systems. Together, these three components will provide the infrastructure to store, track, and verify the implementation of device configurations within day-to-day operations, as well as with a traceable reference for engineering and compliance applications. Further, the potential for interfaces with other external applications and sources, including advanced reporting and visualization platforms, enable these applications to also play a key role in other data and process integrations, particularly in asset management and operations aspects.

The effort outlined in this document will be carried out in four stages, covering procurement, implementation and deployment, data population, and business integration aspects. Ultimately, these new systems will feature seamless integration of data and processes across protection and control applications, as well as those associated with other planning, operations, and engineering departments.

Project Management (Along all stages of the project)

The project management task will be performed throughout all stages of this project, and covers the oversight and management of budget, schedule, and deliverables of this effort. This task includes problem identification and resolution, development of action items, and follow up to enable smooth execution of the project scope. To promote visibility of potential concerns and status tracking, the project manager (or designates) will be responsible for reporting progress to LUMA management and other stakeholders, as well as coordination with other LUMA projects and departments. The project management team will work closely with LUMA procurement, legal, IT/OT, and the Protection and Control and Field Engineering teams (and other applicable departments) who will be utilizing these new systems.

Figure 1 - LUMA software tools and systems diagram

Stage 1 – Procurement

This stage covers the aspects to procure the Protection Management System software platform.

- **Requirements Gathering and Project Planning**: LUMA has progressed in the preliminary engineering steps of this project analyzing business processes, gathering the business requirements, identifying technical requirements, and defining a high-level scope for the project. This effort has been the foundation for the development of this SOW.
- **RFP Preparation** – A Request For Proposal (RFP) package will be compiled for consideration by qualified vendors. The package will outline the technical and support requirements for the three software platforms. This RFP includes:
    - Technical and functional requirements
    - Support tools and capabilities
    - Utility and IT/OT industry standards
    - Factory and Site Acceptance Testing
    - Deployment to the LUMA environment
    - Training and documentation
    - Warranty and ongoing support
    - Commercial terms and conditions

- Other requirements as determined

- **Vendor Response, Bid Evaluation, and Selection** – A criterion is developed for evaluating vendor responses and selecting the propose that offers the best combination of capabilities and value. This criterion will be utilized to rank the vendor responses and select the platforms for procurement.
- **FEMA Fund Obligation Process** – A Class 3 budget and Detailed SOW will be produced.
- **Award Justification** – A justification is prepared in conjunction with all involved parties for the vendor contract and selection for the Protection Management Systems acquisition and implementation.
- **Vendor Negotiations (after vendor selection)** – Together with LUMA stakeholders (Protection and Control engineers, IT, OT, purchasing, legal, and others are determined) a final contract is negotiated with the vendor based on the RFP, LUMA Terms and Conditions, the vendor proposal, and any supplemental information provided by the vendor during the selection process.

Stage 2 – Implementation and Deployment

This stage covers the aspects required to implement and deploy the Protection Management Systems to the LUMA environment. Although these will apply to all three Protection Management Systems covered in this project, the three software platforms may be deployed and brought into service separately, depending on prerequisites for effective operation. In particular, full functionality of secure access management systems may require additional hardware to be installed at substations, as well as prior completion of repository and data migration efforts.

- **Functional Specification Agreement** – Detailed platform functional specifications are developed by the selected vendor to address the specific requirements outlined in the RFP. These modification and configuration considerations to the software platforms will be agreed upon by both the vendor and LUMA stakeholders.
- **Implementation and Configuration** – The vendor will modify and/or configure the software platforms according to the agreed upon specification. These may include customizations to the core software platforms to address LUMA's specific needs. The LUMA team will provide feedback and technical support to the vendor to ensure both parties agree.
- **Factory Acceptance Test** – A Factory Acceptance Test (FAT) of the software functionalities will be performed once implementation, customization, and configuration is complete. This test is intended to demonstrate the required functionality of the Protection Management Systems and may be completed in the vendor's environment.
- **Deployment** – The Protection Management Systems will be deployed to LUMA's computing environment. This task will require close coordination between LUMA's Protection and Control team, the selected vendor, and LUMA's IT/OT department to ensure the deployed solutions meet IT and Cybersecurity requirements.
- **Site Acceptance Test** – Following deployment of the software platforms, a Site Acceptance Test (SAT) will be performed to confirm proper operation within LUMA's environment. This test will be performed by LUMA personnel in accordance with an agreed-upon test plan.
- **Training and Documentation** – The vendor will deliver final functional and user documentation, as well as maintenance information to LUMA. The vendor will provide both basic user and

advanced administrator/developer training to LUMA personnel in the utilization, maintenance, and integration of the Protection Management Systems.

Stage 3 – Data Population

This stage covers aspects of data population for the Device Settings Repository.

- **Data Migration** – Device configuration data from existing sources (such as the interim repository) will be migrated to the newly deployed Settings Repository. This migration process may involve automated translation and data interpretation tools to enable large numbers of settings to be processed and efficiently moved to the new centralized storage solution.
- **Settings Digitization** – For device configurations that are not suitable for automated processing methodologies (such as image-based records), manual digitization will be performed to add these records to the Settings Repository. This digitization will enable machine accessibility to the data for analytics, Export Transform Load, and reporting applications, as well as improve accessibility and maintenance of device settings.
- **Support for Data Gathering** – For cases where no reliable records exist, field retrieval may be necessary. This task will support data gathering efforts to obtain or update settings records from the field.

Stage 4 – Advanced Applications

This stage covers the enterprise integration and business process enhancements that are enabled through these new Protection Management Systems. These advanced applications provide LUMA's Protection and Control engineers with significantly improved capabilities to assist them in their day-to-day and long-term tasks, and ultimately contribute to the safe and reliable operation of Puerto Rico's electric grid. Proposed applications to be covered in this stage are listed below.

- **AssetSuite Alignment and Integration** – AssetSuite is an Asset Management database that stores nameplate and status records for field-deployed equipment. The integration of these records with the Device Settings Repository promotes data consistency in equipment referencing (such as names, locations, serial numbers, and technical parameters) across the organization.
- **Automated Protection Modeling to CAPE** – CAPE is a short-circuit and simulation software platform that is critical in the development of relay settings. Integration of the modeling process with the Device Settings Repository enables LUMA engineers to efficiently create or update protection representation in the CAPE model, opening the doors to advanced protection performance studies to support settings verification or compliance requirements.
- **Event Record Repository** – Remote access to field-deployed devices through the Secure Access Management platform makes it possible to retrieve event records easily and efficiently. Integration of these systems with the Event Record Repository enables reliable storage of retrieved records for future reference.
- **Calculation Sheet Repository** – Calculation sheets are critical tools in the relay settings development process. Integration of these with the Device Settings Repository streamlines the process, optimizing engineer effort and reducing potential for human error.

- **Setting Template Storage and Documentation** – Similar to the above, integration of Device Settings Repository with Template Storage assists engineers throughout the relay settings development process and reduces potential for human error.

Type of Project

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

Choose One (Restoration, Improved or Alternate) If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendations.
Restoration to Codes/Standards Project
The modern protection and control systems deployed in the Puerto Rico power system recovery require adequate data management systems as an integral component of the system rebuild. Deployment of modern Protection Management Systems will provide LUMA with greatly expanded capabilities in the management, tracking, implementation, testing, and maintenance of protection device configurations. Furthermore, the integration of these systems with external applications provides additional benefits in data integrity, study and analytics capability, potential protection performance compliance requirements, and engineer effort optimization. Finally, these systems will improve the security of confidential infrastructure data through greater control over data accessibility and distribution. These new systems will serve as critical tools in the safe and reliable operation of Puerto Rico's Electric Grid.
This work will be in compliance with FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020)

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

Preliminary Engineering

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

Yes

Codes and Standards

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

The following will be referenced when applying specific codes, specifications, and standards to the project design:

1. Consensus-based codes, per FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020).
2. Industry standards per FEMA Recovery Policy FP-104-009-5, Version 2, Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.
3. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.
4. LUMA's latest Design Criteria Document (DCD) which aggregates the design considerations of the vast majority of the consensus-based codes, specifications, and standards listed in FEMA Recovery Interim Policy 104-009-11 Version 2.1 (December 20, 2019).

Codes, Specifications, and Standards

Yes
Applicable codes and standards will be identified and incorporated into the plans and specifications. LUMA plans to consider IEC 61850 standards for substation automation which will impact the development of this project.

Industry Standards

Yes
Applicable industry standards will be identified and incorporated into the plans and specifications. The current industry standards utilized by many mainland utilities will be leveraged for this project. These include provisions for physical security, cybersecurity, and applicable critical infrastructure (CIPs) requirements. The widespread proliferation of new microprocessor-based protection and control hardware has significantly increased the number of devices and instances applicable to the standards; data-centric requirements can only feasibly be met through use of Protection Management System due to the quantity of data involved. Examples include: **CIP-007 Systems Security Management, Requirement R5** - Provisions for enforcing use of authentication, identifying account types, changing default passwords, enforcing password standards, enforcing password changes, and limiting unsuccessful authentication attempts. **CIP-010 Configuration Change Management, Requirement R1 and R2** - Establish and execute management processes to identify and detect changes to applicable field-deployed device configurations with respect to an established baseline configuration. These systems are therefore necessary and critical tools in Puerto Rico's transition to modern digital substations.

Estimate

Cost estimates to complete the work have been generated at a class 5 level, which is between -50% and +100% of the final project cost. The estimate includes materials, construction labor and equipment, engineering, management, and contingencies.

Estimated Budget for Architectural & Engineering Design:	**$0.3M**
Estimated Budget for Procurement & Construction:	**$5.4M**
Estimated Overall Budget for the Project:	**$5.8M**

406 Hazard Mitigation Proposal

406 Mitigation Opportunity Scope of Work

During the planning, scoping, and specification stage, LUMA will develop and propose 406 Hazard Mitigation proposals consistent with the damages. These proposals will be documented with BCAs.

406 Mitigation Opportunity Cost Estimate

Estimated Budget for Architectural & Engineering to Design:	**Unknown at this time**
Estimated Budget for Procurement:	**Unknown at this time**

Estimated Budget for Construction:	**Unknown at this time**
Estimated Overall Budget for the Project:	**Unknown at this time**

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

Environmental & Historic Preservation Requirements

N/A. No facilities work is associated with this scope of work.

Attachments

Document Name	Description
<N/A>	Project Cost Estimates

Exhibit 2

Excel Spreadsheet with Updated List of Projects Submitted via email