

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

NEPR Received: Jun 13, 2024 11:40 AM

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 Amended Scope of
Work and Request for Confidentiality and
Supporting Memorandum of Law**

**MOTION SUBMITTING AMENDED SCOPE OF WORK AND REQUEST FOR
CONFIDENTIALITY AND SUPPORTING MEMORANDUM OF LAW**

TO THE PUERTO RICO ENERGY BUREAU:

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

I. Amended Scope 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. The Energy Bureau thereafter determined that this directive should be applied to both PREPA and LUMA. *See* Resolution and Order of August 20, 2021 (“August 20 Order”) on page 3.

2. Consequently, LUMA has submitted several Transmission and Distribution projects (“T&D Projects”) to this Energy Bureau for a total of 255 SOWs. The Energy Bureau has approved all the T&D Project SOWs submitted by LUMA as of April 18, 2024.

3. On July 29, 2022, LUMA filed a *Motion Submitting Four Scopes of Work, an Updated List of Projects, and Request for Confidentiality and Supporting Memorandum of Law*. Therein, LUMA submitted four (4) SOWs for T&D Projects for its review and approval before submitting them to COR3 and FEMA (“November 11th Motion”). Among the SOWs submitted to this Energy Bureau was the: “Bayamon TC - Phase II” T&D Project.

4. On August 25, 2022, the Energy Bureau entered a Resolution and Order in which, among other considerations, it determined that the four (4) SOWs for T&D projects submitted by LUMA were necessary to improve the system’s reliability (“August 25th Order”). Therefore, it approved all the projects presented in the July 29th Motion. Further, the Energy Bureau ordered LUMA to seek the Energy Bureau’s approval immediately should the scope of the approved projects change.

5. Recently, LUMA elected to modify the scope of the T&D Project SOW referenced above, which the Energy Bureau already approved. These changes are part of LUMA’s prioritization and execution strategy. Therefore, LUMA seeks to resubmit the previously approved “Bayamon TC – Phase II” T&D Project as the “Bayamón TC - Rebuild” T&D Project.

6. The “Bayamón TC – Phase II” T&D Project has evolved, and version 0 has been added to the scope. This new version includes purchasing, transporting, and installing a 230 kV transformer to enable temporary repairs in Bayamón and across the system. Additionally, portions of the original site will be relocated as a mitigation measure to the flooding hazard at the current location. Furthermore, LUMA continues to deal with supply chain constraints that have resulted in costs that are higher than initially forecasted.

7. In compliance with the August 25th Order, LUMA hereby submits as *Exhibit 1* to this Motion the “Bayamón TC - Rebuild” SOW. As such, LUMA requests that the Energy Bureau strike the previously approved SOW in the August 25th Order, as detailed in this motion, and approve the SOW submitted as Exhibit 1 to this Motion.

8. Moreover, 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 its Memorandum of Law below stating the legal basis for which the unredacted version of *Exhibit 1* should be filed under seal of confidentiality. As will be explained below, 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 “SOW 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.

9. In addition, the SOW includes personal identifying information of LUMA staff or contractors protected under Puerto Rico’s legal framework on privacy emanating from the Puerto Rico Constitution. It 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

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

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

12. Relatedly, in connection with the duties of electric power service companies, Section 1.10 (i) of Act 17-2019 provides that electric power service companies shall provide the

information requested by customers, except for confidential information in accordance with the Puerto Rico Rules of Evidence.

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

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

1. Trade Secret Information

Any document designated by the [Energy Bureau] as Validated Confidential Information because it is a trade secret under Act 80-2011 may only be accessed by the Producing Party and the [Energy Bureau], unless otherwise set forth by the [Energy Bureau] or any competent court.

2. Critical Energy Infrastructure Information (“CEII”)

The information designated by the [Energy Bureau] as Validated Confidential Information on the grounds of being CEII may be accessed by the parties’ authorized representatives only after they have executed and delivered the Nondisclosure Agreement.

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

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

15. 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

16. 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.¹ In at least two proceedings on Data Security² and Physical Security,³ this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

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

¹ 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) *but see* Resolution and Order of February 12, 2021 reversing in part, grant of confidential designation).

² *In re Review of the Puerto Rico Electric Power Authority Data Security Plan*, NEPR-MI-2020-0017.

³ *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan*, NEPR-MI-2020-0018.

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

18. 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.

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

Critical energy infrastructure information means specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that:

- (i) Relates details about the production, generation, transportation, transmission, or distribution of energy;
- (ii) Could be useful to a person in planning an attack on critical infrastructure;
- (iii) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. 552; and
- (iv) Does not simply give the general location of the critical infrastructure.

Id.

20. 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.*

21. 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”).⁴ 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).⁵

⁴ 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.

⁵ 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

22. The SOW contains diagrams that qualify as CEII because it contains information on the engineering and design of critical infrastructure, as existing and proposed, relating to the transmission of electricity, which is provided in sufficient detail that it could potentially be helpful to a person planning an attack on this or other energy infrastructure facilities interconnected with or served by this facility and equipment. In addition, the SOW with CEII in Exhibit 1 qualifies 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 this 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.

23. 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 this 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

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.

24. In addition, the SOW in *Exhibit 1* contains the names, signatures, and roles of three individuals who are LUMA employees and contractors, respectively, who reviewed the SOW as part of LUMA's internal review and approval of each document. 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 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 in protecting privacy weighs in favor of protecting the relevant portions of the SOW.

C. Identification of Confidential Information

25. In compliance with the Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, below, find a table summarizing the 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	Bayamón TC - Rebuild	Page 1	Right to privacy (<i>see e.g.</i> , Const. ELA, Art. II, Sections 8 and 10)	June 13, 2024
		Pages 6, 15-16	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	June 13, 2024

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

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 13th day of June 2024.

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 counsel for PREPA Alexis Rivera,

arivera@gmlex.net, and to Genera PR LLC, through its counsel of record, Jorge Fernández-Reboredo, jfr@sbglaw.com and Alejandro López Rodríguez, alopez@sbglaw.com.



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Exhibit 1

Amended Scope of Work

Redacted Version (Unredacted Version Submitted under Seal of Confidentiality)



Document Title: Bayamón TC - Rebuild FEMA
Project Scope of Work (Initial)

Project ID: 682328

DR-4339-PR Public Assistance


FEMA Project Scope of Work (Initial)

Project Name: Bayamón TC - Rebuild
Revision: 2

APPROVALS

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

Program Brief Management Leadership (PBML)		
Program Brief Manager or Representative	Signature	Date
[REDACTED]	[REDACTED]	06/12/24
Program Brief Owner	Signature	Date
[REDACTED]	[REDACTED]	06/12/24
Grants Manager	Signature	Date
[REDACTED]	[REDACTED]	06/12/24

	Document Title: Bayamón TC - Rebuild FEMA Project Scope of Work (Initial)	Project ID: 682328
		DR-4339-PR Public Assistance

DOCUMENT REVISION HISTORY

This table contains the history of the revisions made to this FEMA Project Scope of Work.

Rev.	Effective Date	Description of Change
0	May 13, 2024	Initial Release
1	June 12, 2024	Includes revision by LUMA Engineering.


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1.0 OVERVIEW


Project Name:	Bayamón TC - Rebuild
Project type:	Restoration to Codes/Standards: Restores the facility(s) to pre-disaster function and to approved
Region:	Bayamón
Program Brief Owner:	Daniel Haughton
Project Sponsor:	Juan Rodríguez
Damage Number:	223189
Damaged Inventory/Asset Category:	Island Wide Substations
FEMA Project Number:	682328

2.0 INTRODUCTION

The purpose of this document is to present and update an Initial Scope of Work (ISOW) with Cost Estimates to be submitted to Central Office for Recovery, Reconstruction and Resilience for Puerto Rico (COR3) and Federal Emergency Management Agency (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.

This document provides a description of the project including an initial scope of work, cost estimates as well as Environmental & Historical Preservation (EHP) relevant information and proposed 406 hazard mitigation work.

LUMA Energy provides the Operation and Maintenance of the Transmission and Distribution System of Puerto Rico. The Puerto Rico Power Electric Authority (PREPA) is the government 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.

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3.0 FACILITIES

3.1 Facilities Description

Bayamón Transmission Center (TC) consists of facilities that operate at nominal voltages of 230 kV, 115 kV, 38 kV, 13.2 kV and 4.16 kV. It includes:


- Three (3) 230 kV oil circuit breakers (OCBs)
- One (1) 230/115 kV, 328/436/544 MVA autotransformer
- Twenty (20) 115 kV circuit breakers
- One (1) 115/38 kV, 60/80/100/112 MVA power transformer
- One (1) 115/38 kV, 60/80 MVA power transformer consisting of three single-phase units (20/26.67 MVA, each)
- One (1) 115/13.2 kV, 24/44.8 MVA, step down transformer for substation 1711 Bayamón TC
- One (1) capacitor bank connected to the 13.2 kV bus of substation 1711, out of service.
- Fifteen (15) 38 kV circuit breakers
- One (1) 12/22.4 MVA, 38/13.2 kV step down transformer for substation 1716 Bayamón TC
- One (1) 7.5/11.3 MVA, 38/4.16 kV step down transformer for substation 1714 Caridad

The existing electrical infrastructure at Bayamón TC includes equipment that presents reliability issues. The 115 kV switchyard and 38 kV switchyard are in areas identified as Flood Zone A in the current Advisory Base Flood Elevations (ABFE) Maps. The 230 kV breakers at the site are obsolete and replacement parts are not readily available. These breakers use oil as the insulating medium for arc extinction during contact separation and fault clearing, which could pose safety hazards if not properly monitored and maintained. In addition, the existing breaker configuration, which provides services to two transmission lines and one power transformer, limits future circuit connections.

The existing 230/115 kV autotransformer at Bayamón TC is scheduled to be replaced. It has been in service for almost 50 years (since 1973), and it has experienced instances of gas leakage. Even though the leaks are repaired, no spare parts are available for this unit since the equipment is obsolete.

This site also has 115 kV infrastructure that must be replaced. The existing 115/38 kV, 60/80 MW power transformer, which consists of three single-phase units, has been in service since 1960 and has exceeded its useful life. The two 115/38 kV transformers provide interconnections to transmission centers and sectionalizers in Hato Tejas, Bayamón and Cataño, which also includes load from the mass transportation system Tren Urbano. Both 115kV transformers are necessary to maintain the reliability of the metropolitan area and must be in optimal condition to avoid contingencies that could affect the reliability of the 38 kV system in this highly populated area. The obsolete 115 kV OCBs shall also be replaced with new gas circuit breakers.

The distribution transformer at substation 1714 Caridad has been in service since 1970. It supplies small commercial and residential customers in Bayamón at a primary distribution voltage of 4.16 kV. LUMA Energy is in the process of upgrading all 4.16 kV substations to 13.2 kV to reduce system losses, improve voltage regulation, provide operational flexibility, increase renewable energy hosting capacity at the feeder level, and increase system security under fault conditions. This substation, along with 1711 Bayamón TC, has experienced reliability issues with the existing metal clads. To increase overall

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system reliability and LUMA plans repairs and reconstruction reduce system losses, as discussed in the scope of work section below.

3.2 Facilities List

Name	Number	Voltage (kV)	GPS Location	Construction Year
Bayamón Transmission Center	1711, 1714, 1716	230, 115.3 8, 13.2 and 4.16	[REDACTED]	Between 1960 and 1973
Sabana Llana Transmission Center	1646, 1647, 1650	230 kV	[REDACTED]	1980 approximately
Costa Sur Transmission Center	51200, 50400, 51100	230 kV	[REDACTED]	1973

4.0 PROJECT SCOPE OF WORK


This project addresses the need to increase the reliability and resiliency of the Bayamon TC while restoring system functionality. This facility was damaged by the strong winds and heavy rainfall during the atmospheric event Maria, a Category 4 hurricane that occurred during the period of Sep 17, 2017, to Nov 15, 2017. The Bayamón TC repairs include the purchase, transportation, and installation of new 230/115 kV transformers.

In addition to new 230 kV transformers, LUMA will purchase a 230 kV redeployable transformer. Potential purposes for a redeployable transformer include response to weather and other natural hazard caused outages, forced outage repairs, and resiliency against sabotage and attacks. This redeployable transformer will provide an additional redundancy essential to facilitate the repairs on the transmission centers in a future storm event. The redeployable transformer will mitigate existing operational constraints that may hinder the implementation and construction sequencing of the capital project at Bayamón TC. Once the 230 kV switchyard is rebuilt and the new transformer added, this unit can be redeployed to another capital project or used to fulfill other operational needs.

The project will also replace 115 kV transformers. These transformers are necessary to maintain the reliability of the metropolitan area and must be in optimal condition to avoid contingencies that could affect the reliability of the 38 kV system in this highly populated area.

To increase overall system reliability and reduce system losses, LUMA plans to consolidate the 38 kV connected substations (1714 Caridad and 1716 Bayamón TC) into a single 115/13.2 kV, 24/44.8 MVA substation. Also, substation 1711 Bayamón TC shall be rebuilt to replace the existing metal clad and distribution transformer, which has been in service since 1973. With these changes, all distribution loads at Bayamón TC will be served from two new 115/13.2 kV, 24/44.8 MVA substations.

The project will be executed in two versions.

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Version 0 Scope of Work

A. Purchase of the 230 kV redeployable transformer:

- Provide one (1) 230/115 kV, 168/224/280 MVA step-down auto transformer.

B. Transportation of the 230 kV redeployable transformer U.S. to Port of San Juan:

- Perform route and site surveys (Desert Hot Springs, CA).
- Mobilize to Origin.
- Load to dual lane rig using jack and slide system.
- Move loaded rig to NRS in Indio, CA
- Transfer from dual lane rig to rail car.
- Tie down transformer per specs and plans.
- Provide all state and local permits (California Permit, Railroad Permit, Puerto Rico Permit)
- Provide all police and civilian escorts.
- Provide heavy duty rail car.
- Manage rail transportation to the Port of Houston.
- Offload/Load at the Port of Houston.
- Provide ocean transport from Port of Houston to Port of San Juan.
- Offload/Load at the Port of San Juan.
- Transport from Port of San Juan to Bayamón Substation.
- Offload and Set to Foundation at Substation.

C. Transportation of the 230 kV redeployable transformer from San Juan Port to Bayamón Facility:

- Transport from Port of San Juan to Bayamón Substation.
- Offload and Set to Foundation at Substation.
- Load to dual lane rig using jack and slide system (100ft displacement).

D. Installation of the 230 kV redeployable transformer at Bayamón Facility:


- Install one (1) 230/115 kV, 168/224/280 MVA step-down auto transformer.

Version 1 Scope of Work:

Bayamón TC shall be rebuilt in the same location, implementing rebuild on the existing station, mitigation measures to avoid the flooding hazard at the current location.

On the 230 kV bus, the work shall include the replacement of all three (3) OCBs with new gas circuit breakers (GCBs) and the addition of three (3) GCBs (these additional GCBs will be included in the FEMA 406 Hazard Mitigation scope). These breakers shall constitute a ring bus with a total of six (6) breakers, arranged for future transitioning into breaker and a half (BAAH) configuration, which will provide service to:

- Line 50200 to Manatí TC (sectionalized by future Guaynabo – New 230 kV Site)
- Line 50900 to Aguas Buenas TC (sectionalized by future Guaynabo – New 230 kV Site)
 - T1: 230/115 kV, 328/436/544 MVA autotransformer (**Note: Impedance of the 230/115 kV power transformers shall be the same to avoid unbalanced loading**).
- New T2: 230/115 kV, 328/436/544 MVA autotransformer

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- Note: Impedance of the 230/115 kV power transformers shall be the same to avoid unbalanced loading.
- Space bay for 2 spare services to serve for future use.
- New Sub-transmission lines/poles for interconnecting the 230 kV service to the new location of T1 & T2.

On the 115 kV reconstruction work, it shall consist of replacing the existing 115 kV BAAH-AIS with a two (2) new built-in-site GIS Enclosure, on the available space on the North-west section of the existing station, and shall include the following:

- Build two (2) New Elevated 115 kV Built-in-site GIS Enclosure with the following configuration:
 - One (1) BAAH-GIS four-bay and bus tie with one-bay space (for a total of fourteen (14) GCBs)
 - One (1) BAAH-GIS four-bay (for a total of twelve (12) GCBs)
- Interconnection of two (2) new 230/115 kV, 544 MVA auto transformers
- Interconnection of two (2) new 115/38 kV step down transformers
- Interconnection of two (2) new 115/13.2 kV step down transformers
- New Sub-transmission lines/poles for interconnecting existing 115 kV lines
- Re-stringing 115 kV lines for temporary connection to existing step-down transformers (to minimize outages during rebuilds).

(Note: The location for these two new elevated 115 kV built-in-site GIS Enclosure will require clearing of existing STATCOM equipment, existing underground feeders and associated existing structures).

The reconstruction work shall also include the replacement of the existing 115/38 kV, 60/80 MVA power transformer that consists of one three phase unit (20/26.67 MVA, each). These units were installed in 1960 and have exceeded their expected useful life.


The 38 kV reconstruction work shall consist of replacing the existing 38 kV BAAH-AIS, and shall include the following:

- Build New Elevated 38 kV Built-in-site GIS Enclosure with BAAH-GIS five-bay (for a total of fifteen (15) GCBs).
- Interconnection of two new 115/38 kV step down transformers.
- Design layout shall include space provision for one-bay expansion for future use.
- New Sub-transmission lines/poles for interconnecting existing 38 kV lines

(Note: The location for this new elevated 38 kV built-in-site GIS Enclosure will require clearing of existing 115 kV BAAH-AIS equipment's and structures).

The 13.2 kV reconstruction work shall consist of replacing the existing 13.2 kV sectionalizer and shall include the following:

- Build New Elevated 15 kV Split-ship-in-site GIS Enclosure with Double-Bus, tie and coupler configuration (for a total of twenty-one (21) CBs).
- Interconnection of two new 115/38 kV step down transformers.
- Design layout shall include spare provision on each bus section for spare use.

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- New Sub-transmission lines/poles for interconnecting existing 13.2 kV lines

(Note: The location for this new elevated 15 kV Split-ship-in-site GIS Enclosure will require clearing of existing 38 kV BAAH-AIS equipment's and structures).

For this project, also enable synchro-phasor technology (PMU) in conjunction with the relay replacement scope to reduce event investigation and restoration times. If additional costs are incurred to enable this technology, it will be pursued under Stafford Act section 406.

The two distribution substations connected to 38 kV (1716 Bayamón TC and 1714 Caridad) shall be removed and the loads transferred to a new 115/13.2 kV, 24/44.8 MVA substation. With these changes, all the distribution system loads will be served through two 115/13.2 kV, 24/44.8 MVA transformer.


Proposed Transmission and Sub-Transmission Reconstruction

230 kV Infrastructure

- Replace three (3) OCBs with three (3) new GCBs and install three (3) additional GCBs. These six (6) total breakers shall constitute a ring bus infrastructure with services for:
 - Line 50200 to Manatí TC (sectionalized by future Guaynabo – New 230 kV Site).
 - Line 50900 to Aguas Buenas TC (sectionalized by future Guaynabo – New 230 kV Site).
 - New T1: 230/115 kV, Wye-Wye, 328/436/544 MVA autotransformer (replaces existing transformer).
 - New T2: 230/115 kV, Wye-Wye, 328/436/544 MVA autotransformer (transformer).
 - Two (2) spare services for future use.
 - Ring bus design and layout shall be arranged for future transition to BAAH configuration.

115 kV Infrastructure

- New infrastructure of two (2) BAAH-GIS, with services for:
 - Line 36100 to Cana Sect.
 - Line 36100 to Monacillo TC
 - Line 37500 to Rio Bayamón
 - Line 40700 to Palo Seco SP
 - Line 40600 to Monacillo TC
 - Line 38600 to San Juan SP
 - Line 37600 to Palo Seco SP
 - Line 37400 to Hogar Creativo
 - Line 37700 to Palo Seco SP
 - New T1: 230/115 kV autotransformer
 - New T2: 230/115 kV autotransformer
 - New T3: 115/38 kV step down transformer
 - New T4: 115/38 kV step down transformer
 - New T5: 115/13.2 kV distribution substation transformer
 - New T6: 115/13.2 kV distribution substation transformer
- Remove the VA-Tech gas insulated switchgear (GIS)
- Design and layout shall include space provision for future 115 kV bays

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- The 115 kV sides of the 230/115 kV autotransformers and 115/13.2 kV distribution transformers shall be connected to different buses to increase system reliability under contingencies at either bus 1 or 2.
- Install a new 115/13.2 kV, Delta-Wye, 24/44.8 MVA transformer and associated 13.2 kV GIS switchgear to rebuild existing 1711 Bayamón TC substation.
- Install a new 115/13.2 kV, Delta-Wye, 24/44.8 MVA transformer and associated 13.2 kV GIS switchgear to replace existing 1716 Bayamón TC substation.
 - The two distribution substations connected to 38 kV (1716 Bayamón TC and 1714 Caridad) shall be removed and the loads transferred to this new substation.
 - With these changes, all the distribution system loads connected to Bayamón TC will be served through two 115/13.2 kV, Delta-Wye, 24/44.8 MVA substations (rebuilt 1711 Bayamón TC substation and the new one).

38 kV Infrastructure

- New infrastructure of BAAH-GIS bus, with services for:
 - Line 13300 to Hato Tejas
 - Line 9600 to Cataño
 - Line 4300 to Bayamón Pueblo
 - Line 16700 to Tren Urbano #1
 - Line 9800 to Guaraguao
 - Line 4300 to Juan Domingo
 - New T3: 115/38 kV step down transformer
 - New T4: 115/38 kV step down transformer
- Design and layout shall include space provision for future 38 kV services.
- The 115 kV sides of the 115/38 kV step down transformers shall be connected to different buses to increase system reliability under contingencies at either bus.
- Install a two (2) new 115/38 kV, 112 MVA step down transformer.


Proposed Distribution Substation Reconstruction

Substation 1711 Rebuild

- Major equipment requirements for 115/13.2 kV substation rebuild:
 - Two (2) 115/13.2 kV transformer with a 24/44.8 MVA capacity, Delta-Wye
 - New infrastructure of BAAH-GIS bus, with coupler and bus tie.
 - Install ION meter and related metering equipment.
 - Provide for current measurement equipment for all phases of each distribution feeder.

Load Transfer to New 115/13.2 kV Substation

- Transfer all loads from 1716 Bayamón TC and 1714 Caridad to the new 115/13.2 kV substation:
 - Transfer existing 1716 feeders (3) to new substation.
 - Install two (2) 13.2/4.16 kV 2 MVA step-down transformers to supply the loads of the 4.16 kV feeders from substation 1714 Caridad. These converters shall be located within the substation premises, and each shall connect to one of the spare feeders of the new 115/13.2 kV 1716 Bayamón TC substation. The design shall include provisions to tie both converters, so that in case one converter fails, the other can supply its load.

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- Note: these converters are necessary to supply the loads of substation 1714 Caridad until they can be converted to 13.2 kV.

Protection, Automation and Control Requirements

Panel requirements are as follows:

- 230 kV – seven (7) Protection, Automation & Control Panels
- 115 kV – sixteen (16) Protection, Automation & Control Panels
- 38 kV – nine (9) Protection, Automation & Control Panels
- Telecom – eight (8) panels

LUMA will evaluate substation space to determine the location of a single control house for the new installation.

Automation & SCADA design work at Bayamón TC substation consists of adding a Substation Automation System (SAS) based on the Real-Time Automation Controller (RTAC) system with embedded human machine interface (HMI). The embedded human machine interface (HMI) and local display will provide consolidated local metering, annunciation, and control for the site. A software control philosophy utilizing the IEC61850 standard will be implemented. The existing RTU system and associated equipment will be integrated through communication links to the new RTAC system for the consolidation of the remaining SCADA points not affected by this project. All the IEDs in the new system will be connected to substation hardened ethernet LAN.


A communication link between Bayamón TC substation and the LUMA's Energy Management System (EMS) meeting the standard requirements is to be designed by the Telecommunication Group. The Architect and Engineering (A&E) firm will complete all required engineering and design activities for the substation mentioned above in addition to office and site quality assurance testing relating to the design.

Dual (2) 125VDC battery banks with redundant charges will be supplied for the SAS panels and P&C (Relays).

The Station Bus will have a redundant LAN architecture to support the Parallel Redundancy Protocol (PRP, based upon the IEC 62439-3:2012 standard) utilized by Protection Automation and Control (PAC) for IED communications and specified by the IEC 61850 standard. For Protection devices (relays) or critical Intelligent Electronic Devices (IEDs) that don't support PRP, the provision of Redundant Boxes (PRP Red Boxes) must be considered.

This station bus will include two isolated LAN segments. Each LAN segment will include the minimum number of Ethernet switches required to support fiber optic (100FX) and copper (100Base-T) Ethernet connections to all relevant IED located within the substation control building. Additional copper Ethernet ports will be provisioned on each LAN segment for local and remote maintenance access.

A substation generator will be required for telecommunications backup. Electrical single lines fall under the purview of LUMA to develop and share with A&E for sizing of the site emergency generator.

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5.0 TYPE OF PROJECT

Choose One (Restoration, Improved or Alternate)
Restoration to Codes/Standards: Restores the facility(s) to pre-disaster function and to approved
This work will follow FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020). [If improved project, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide a rationale for the recommendation.]

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.

6.0 PRELIMINARY ENGINEERING


Is architectural and engineering (A&E) funding required to help define the intended scope of work?

Yes, architectural and engineering funding required to help define the intended scope of work

7.0 CODES AND STANDARDS

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 (BBA) 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).

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Codes, Specifications, and Standards

Yes, applicable codes and standards will be identified and incorporated into the plans and specifications.

Industry Standards

Yes: applicable industry standards will be identified and incorporated into the plans and specifications.

8.0 COST ESTIMATE

Cost estimates for this work are prepared in conformance with class 5 accuracy, which is between - 50% and +100% of the final project cost. The estimate includes and is not limited to materials, construction labor and equipment, engineering, management, and contingencies.

Estimated Budget for Architectural & Engineering Design:	\$10,969,364
Estimated Budget for Procurement & Construction:	\$113,592,862
Estimated Overall Budget for the Project:	\$ 124,562,227

9.0 406 HAZARD MITIGATION PROPOSAL


9.1 406 Mitigation Opportunity Scope of Work

LUMA will develop 406 Hazard Mitigation proposals during the preliminary engineering phase that are consistent with the damages.

9.2 406 Mitigation Opportunity Cost Estimate

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


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10.0 ENVIRONMENTAL & HISTORIC PRESERVATION REQUIREMENTS

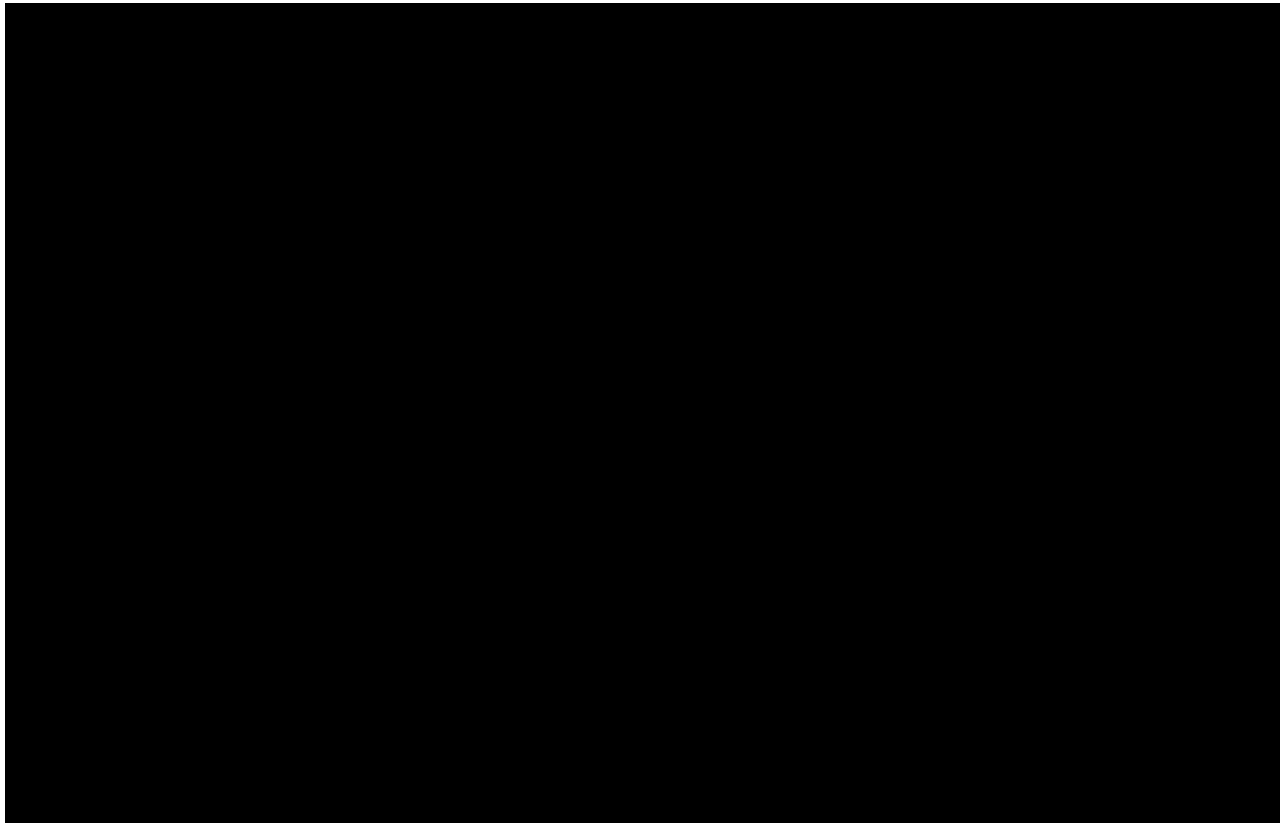
EHP considerations will be identified and evaluated during the preliminary design phase and submitted to FEMA for review. Requirements will be incorporated into the final design and construction documents, which must be approved by FEMA prior to construction activities.


11.0 ATTACHMENTS

Document Name	Description
See Below	Existing Single Line Diagram (SLD)
See Below	Proposed Single Line Diagram (SLD)
See Below	Aerial View of the Existing Facility

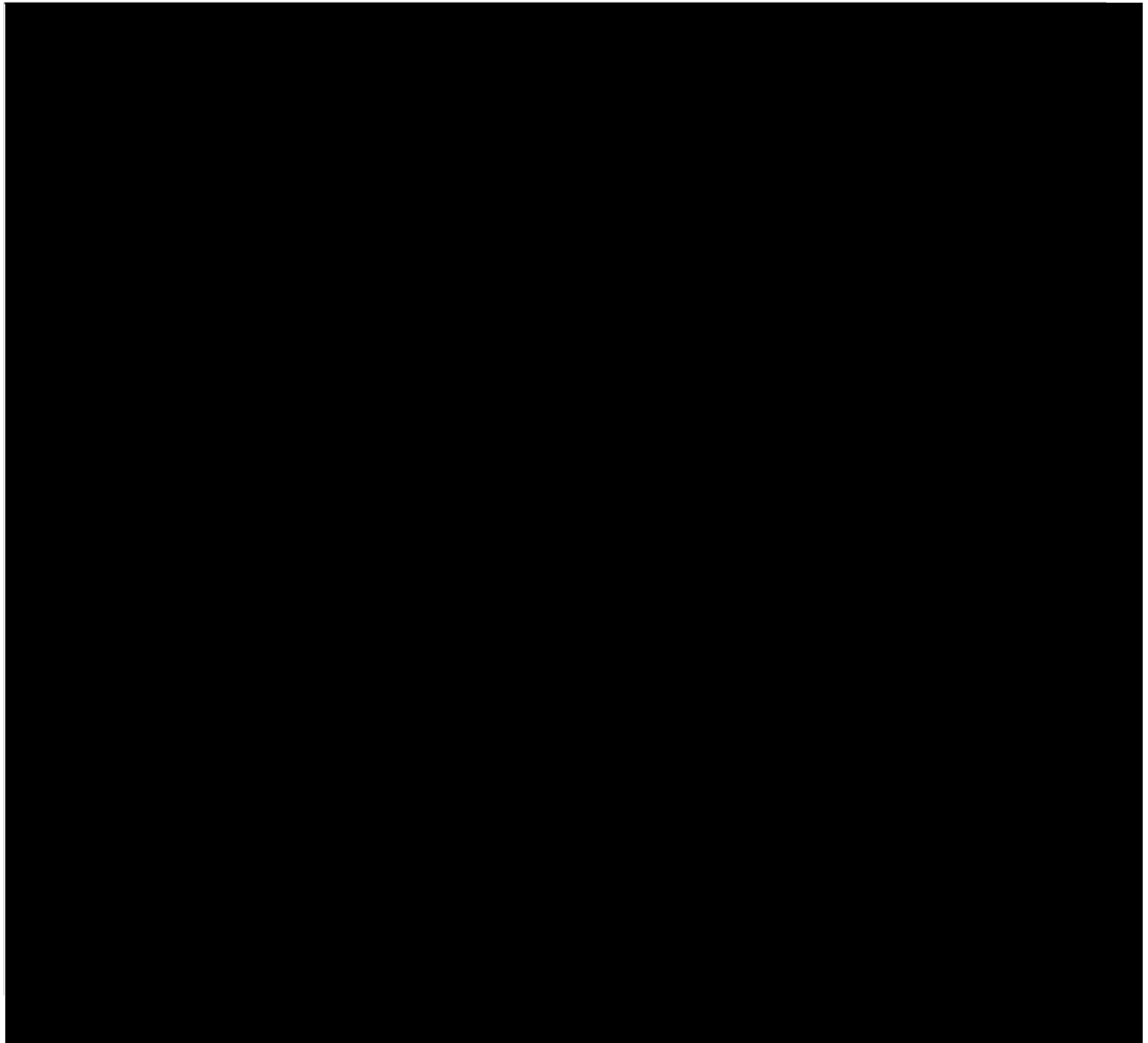
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Existing Single Line Diagram (SLD)



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Proposed Single Line Diagram (SLD)





Aerial View of Existing Site



END OF DOCUMENT