

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

NEPR

Received:

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

CASE NO.: NEPR-MI-2021-0002

MOTION FOR APPROVAL OF SCOPE OF WORK

TO THE HONORABLE ENERGY BUREAU:

COMES NOW the Puerto Rico Power Authority ("PREPA"), through its counsel of record, and respectfully states and prays as follows:

1. On March 26th, 2021, the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau") issued a *Resolution and Order* in the instant case, directing PREPA to, *inter alia*, submit each new capital investment project ("March 26th 2021 Resolution").

2. For projects to be funded by the Federal Emergency Management Agency ("FEMA") and/or any other federal agency, the Energy Bureau required PREPA to submit the specific projects at least thirty (30) calendar days before their submission to the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency ("COR3"), FEMA, or any other federal agency.

3. In compliance with the March 26th, 2021, Resolution, PREPA hereby submits the Scope of Work (SOW) and cost estimates for the replacement of three (3) damaged high-voltage transformers (U-1, U-2 and U-3) at Dos Bocas Hydroelectric Plant. See Exhibit A-1.

4. The Dos Bocas Hydroelectric System is located in the Río Grande de Arecibo basin in the Municipality of Utuado. This system has a hydroelectric plant with an original capacity of 18 megawatts, which discharges into the Río Grande de Arecibo. The Dos Bocas Reservoir is one of the largest on the island, featuring a concrete dam that stands 188 feet high and 1,317 feet long, originally allowing for a storage capacity of 30,400 acre-feet of water.

5. The Dos Bocas Hydroelectric Plant substation plays a critical role in distributing power to essential infrastructure and residential areas in the northwestern region of Puerto Rico. The substation contains three (3) transformers, referred to as U-1, U-2 and U-3. Over the past decade, the impact of severe weather events has critically compromised the operational integrity of these transformers.

6. PREPA proposes the replacement of the three (3) damaged high-voltage transformers (U-1, U-2 and U-3) at Dos Bocas Hydroelectric Plant based on the following:

- a. The transformers are emitting gases, indicating insulation failure. Repairing or reconditioning high-voltage transformers requires disassembly, unwinding and rewinding, moisture removal through baking, and internal redesign to meet current ANSI (American National Standards Institute) and IEEE (Institute of Electrical and Electronics Engineers) standards. Given that these transformers are over 80 years old—well beyond the typical 40-year service life of a

power transformer (U.S. Department of Energy, *Electric Grid Supply Chain Review*, February 24, 2022)—such repairs are impractical.

- b. Due to their age, replacement parts are not readily available and must be specially manufactured, making repairs extremely costly and inefficient. Additionally, this approach does not provide for the availability of spare parts in emergencies.
- c. Over the course of eight (8) decades and multiple disasters, the substation transformers have endured to excessive stress and damage. Although they remained operational prior to the impact of Hurricane Fiona, failure to replace them now could lead to sudden breakdowns and prolonged power outages.
- d. The *2020 National Fire Protection Association (NFPA) 850: Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations*, Chapter 6.1.4.1, introduced updated fire protection requirements for high-voltage transformers. These requirements mandate that outdoor oil-insulated transformers must be separated by either a firewall or a spatial distance of 25 feet (Table 6.1.4.3). The existing transformers contain more than 500 gallons of insulating oil, and their current configuration does not comply with these fire protection requirements, increasing the risk of damage and potential fire spread in the event of a transformer failure.

7. In light of the foregoing, PREPA respectfully requests that the Energy Bureau review and approve the SOW.

8. Exhibit A-1 contains confidential information classified as Critical Energy Infrastructure Information ("CEII"). Accordingly, PREPA is submitting, as Exhibit A-2, a redacted public version of Exhibit A-1 to protect this confidential information.

9. As a general rule, documents in the possession of a public corporation like PREPA are presumed to be public. However, access to public information is not absolute. See, *Bhatia Gautier v. Gobernador*, 199 DPR 59, 82 (2017). The document sought to be disclosed must enjoy that public status. See, *Ortiz v. Dir. Adm of the Courts*, 152 DPR 161 (2000).

10. A government entity may withhold the information from public disclosure under the following circumstances:

(1) a law so declares; (2) the communication is protected by one of the evidentiary privileges that the citizens may invoke; (3) revealing the information may injure the fundamental rights of third parties; (4) it deals with the identity of a confidante and (5) it is "official information" pursuant to Rule 514 of Evidence.

See *Bhatia Gautier v. Gobernador*, 199 DPR 59, 83 (2017).

11. Article 6.15 of Act 57-2014 governs the management of confidential information submitted to the Energy Bureau. It states that any person required to submit information to the Energy Bureau who believes such information is privileged or confidential may request that it be treated as such.

12. If, after conducting an appropriate evaluation, the Energy Bureau determines that the information should be protected, it shall grant such protection in a manner that least affects public interest, transparency, and the rights of the parties involved in the administrative proceedings where the confidential document is submitted. *Id.* at Art. 6.15(a).

13. The Energy Bureau's Policy on Confidential Information (as amended, the "Confidentiality Policy") outlines the procedures a party must follow when requesting confidential treatment for a document or portions thereof. This policy requires the identification of confidential information and the submission of a memorandum of law justifying the legal basis for its confidential status. See CEPR-MI-2016-0009, § A, as amended by the Resolution dated September 20th, 2016, CEPR-MI-2016-0009. The memorandum must also include a table summarizing: (i) the confidential information, (ii) the legal basis for its designation, and (iii) why each claim or designation meets the applicable confidentiality requirements. *Id.* at ¶ 3.

14. Federal and Puerto Rico law protect the confidentiality of CEII, because its public disclosure could pose a security threat by providing information that could aid in planning an attack on critical infrastructure. See, e.g., 18 CFR sec. 388.113, as amended by Federal Energy Regulatory Commission (FERC) Order No. 683, *Critical Energy Infrastructure Information* (issued September 21, 2006); USA Patriot Act of 2001, sec. 1016, creating the *Critical Infrastructures Protection Act of 2001*, including 42 USC sec. 5195c(e) (defining Critical Infrastructure). FERC

regulations limit the use and disclosure of CEII to “ensure that information deemed CEII stays out of the possession of terrorists”. 18 CFR sec. 388.113(d)(4). *Off. of People's Counsel v. Pub. Serv. Comm’n.*, 21 A.3d 985, 991, Util. L. Rep. P27157, 2011 WL 2473405 (D.C. App. 2011).

15. Under the *Critical Infrastructures Protection Act of 2001*, the term “critical infrastructure” refers to “systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters”. 42 USC sec. 5195c(e).

16. Furthermore, FERC has repeatedly ruled that GPS coordinates “qualify as CEII because it provides more than just location”. See, e.g., Final Rule, Docket Nos. RM02-4-000, PL02-1-000; Order No. 630, Note 31, entered on February 21, 2003 (holding that FERC considers global positioning system coordinates of project features – precise surveyed or GPS coordinates with at least two decimal points of accuracy for equipment and structures – to qualify as CEII).¹ Additionally, the Energy Bureau has consistently recognized PREPA’s designations of material as CEII, acknowledging that both federal law and Puerto Rico law support such classifications when applicable.

¹ *Federal Register: March 3, 2003 (Volume 68, Number 41); Rules and Regulations*, pp. 9857-9873.

17. The following is a detailed list of the information that PREPA requests the Energy Bureau to designate as confidential:

File	Pages in which confidential information is found	Summary of legal basis for Confidential Treatment
Ex. A-1 Project Scope of Work with Cost Estimates	Pages 4,9,10,14	CEII

WHEREFORE, for the reasons stated above, PREPA respectfully requests the Energy Bureau take **NOTICE** of the instant Motion, **APPROVE** the proposed SOW, and grant the request for confidential treatment of Exhibit A-1.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 20th day of February 2024.

CERTIFICATE OF SERVICE: We hereby certify that this document was filed with the Office of the Clerk of the Energy Bureau using its Electronic Filing System at <https://radicacion.energia.pr.gov/login>. We also certify that a true and exact copy of this document was notified to the following parties through attorneys of record: Genera PR LLC through Jorge Fernández Reboredo, jfr@sbgblaw.com; Alejandro López Rodríguez, alopez@sbgblaw.com; and LUMA Energy LLC and LUMA Energy ServCo, LLC through Julian Anglada Pagán, julian.angladapagan@us.dlapiper.com; Yahaira De la Rosa, Yahaira.delarosa@dlapiper.com.

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Exhibit A-1
(Confidential)

Exhibit A-2
(Redacted Version)

Government of Puerto Rico

Puerto Rico Electric Power Authority (000-UA2QU-00)



DR-4671-PR Hurricane Fiona

FEMA Public Assistance

PROJECT SCOPE OF WORK WITH COST ESTIMATES
Submittal to COR3 and FEMA



Dos Bocas Transformers

GM #TBD

10/2/2024



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-4671-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create 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.

Puerto Rico Electric Power Authority (PREPA) is the agency that provides the electric service to the entire island of Puerto Rico. As such, the facilities, sites, and systems identified in this Scope of Work 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.

The sections included in this document are:

- *Project Information*
- *Facilities*
- *Scope of Work*
- *Codes and Standards*
- *Cost Estimate*
- *406 Hazard Mitigation Proposal*
- *Environmental and Historic Preservation (EHP)*
- *Program Manager Certification*
- *PREPA Project Sponsor Comments*
- *Attachments*

Document Revision History

Version	Date	Summary of Changes



Section 1. Project Information

General Information

Recipient	Central Office for Recovery, Reconstruction and Resiliency (COR3)
Sub-Recipient	Puerto Rico Electric Power Authority (PREPA)
Project Title	Dos Bocas Transformers
PREPA Project Numbers	TBD

Federal Information

(provided by FEMA)

Damage Numbers	TBD
Damaged Inventory/Asset Category	TBD
FEMA Project Number	TBD
Amendment Number	0

Program Manager: <Name>

<Insert title here>

PREPA Project Sponsor: <Name >

<Insert title here>



Section 2. Facilities

2.1. Facilities List

Name	Damage Inventory Number	GPS Location
Dos Bocas Transformers	TBD	

Table 1: Facilities List

2.2 Facilities Description

Construction began in 1937 on the Dos Bocas Hydroelectric System, and it entered into service in 1942. The Dos Bocas Hydroelectric System is located in the Rio Grande de Arecibo basin in the Municipality of Utuado. This system has a hydroelectric plant with an original capacity of 18 megawatts, which discharges into the Rio Grande de Arecibo. The Dos Bocas Reservoir is one of the largest on the island, with a 188-foot-high and 1,317-foot-long concrete dam that allowed for an original storage capacity of 30,400 acre-feet of water. Since 1998, the Dos Bocas Hydroelectric System has been an integral part of the North Coast Aqueduct (Super Aqueduct) operated by the Puerto Rico Aqueduct and Sewer Authority (PRASA). Currently, Dos Bocas provides water for hydroelectric production and public supplies.

The Dos Bocas Hydroelectric Plant substation plays a critical role in the distribution of power to essential infrastructure and residential areas in the northwest portion of Puerto Rico. There are three (3) transformers at the substation, referred to as U-1, U-2 and U-3. The onslaught of weather events that have occurred in the past decade have impacted the operational integrity of the substation transformers to a critical stage. During the incident period of 9/17/2022 through 9/21/2022, Hurricane Fiona created an immediate threat to the health and safety of the public requiring emergency response and protective measures. The event caused a fault on Phase B of U-3, creating an explosion and flying debris, which impacted both U-3 and U-2; U-1 was also damaged by Hurricane Fiona. Emergency repair work to clean up the resulting oil spill was performed and documented in project GM #741720 (PW 02152).

U-1 is an oil-immersed, natural circulation, forced air cooled, 6250 KVA, 36400/2400 Volt, 3-phase transformer installed in 1942 (82 years old). U-2 and U-3 are both oil-immersed, natural circulation, self-cooled 7500 KVA, 38060/2300 Volt, 3-phase transformers that were installed in 1942 (82 years old). The transformers are currently on-line and operational, but oil leakage has compromised the insulating and cooling properties of the transformers leading to accelerated deterioration of internal components and increased risk of catastrophic failure. Recent tests confirmed that the transformers are leaking gases because of the compromised insulation.



Figure 1: Dos Bocas Reservoir Dam and Hydroelectric Plant

Section 3. Scope of Work

3.1. Justification for Replacement

The substation transformers at Dos Bocas Hydroelectric Plant have been subjected to dozens of powerful hurricanes for eight (8) decades and were most recently damaged by Hurricane Fiona in September 2022. PREPA proposes the replacement of the three (3) damaged high-voltage transformers (U-1, U-2 and U-3) at Dos Bocas Hydroelectric Plant based on the following:

1. The transformers are emitting gases, indicating insulation failure. Repairing / reconditioning high voltage transformers requires disassembly, unwinding and rewinding, baking for moisture removal, and internal redesign to meet current ANSI and IEEE standards. This process is unreasonable for transformers that exceed 80 years of age. The service life of a power transformer is generally 40 years (*U.S. Department of Energy, Electric Grid Supply Chain Review, February 24, 2022*).
2. Due to the age of transformers, replacement parts for repairs are not readily available and must be manufactured, which is extremely costly and therefore not cost effective and does not provide spare part availability for emergencies.
3. The substation transformers have been subjected to excessive stress and damage over eight (8) decades and dozens of disasters, however they were all functional prior to Hurricane Fiona impacts. Sudden failure, leading to prolonged outages will result if the transformers are not replaced.



4. 2020 National Fire Protection Association (NFPA) 850: *Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations* Chapter 6.1.4.1 states that outdoor oil-insulated transformers shall be separated from each other by firewall or spatial separation of 25 feet (Table 6.1.4.3). The existing transformers contain more than 500 gallons of insulating oil, and the configuration does not meet these code requirements for limiting damage and potential spread of fire due to a transformer failure.
-



- (17) Fan rooms and plenum chambers from adjacent areas [fire dampers might not be advisable in emergency ventilation ducts (*see Section 6.4*)]
- (18) Switchgear area and sulfur hexafluoride (SF₆) switchyard area from adjacent areas

6.1.1.4 Fire barriers separating fire areas should be a minimum of 2-hour fire resistance rating.

6.1.1.5 If a fire area is defined as a detached structure, it should be separated from other structures by an appropriate distance as determined by NFPA 80A evaluation.

6.1.1.6 Particular care should be practiced with respect to adequate spatial separation and protection from wildland fires as well as the control of vegetation. Guidance regarding vegetation clearance, separation distance, and emergency planning can be found in NFPA 1143 and NFPA 1144.

6.1.2 Openings in Fire Barriers.

6.1.2.1* All openings in fire barriers should be provided with fire door assemblies, fire dampers, through penetration seals (fire stops), or other approved means having a fire protection rating consistent with the designated fire resistance rating of the barrier. Windows in fire barriers (e.g., control rooms or computer rooms) should be provided with a fire shutter or automatic water curtain. Through penetration fire stops for electrical and piping openings should be listed or should meet the requirements for an "F" rating when tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Penetration Firestop Systems*. Other test methods for qualifications of penetration seals, such as IEEE 634, *Standard for Cable-Penetration Fire Stop Qualification Test*, or UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, are permitted to be considered for this application.

6.1.2.2 Fire door assemblies, fire dampers, and fire shutters used in 2-hour-rated fire barriers should be listed and approved for a minimum 1½ hour fire rating. (*See NFPA 80.*)

6.1.3 Hydrogen Storage. Hydrogen storage facilities should be separated from adjacent areas. (*See NFPA 2.*)

6.1.4 Outdoor Oil-Insulated Transformers.

6.1.4.1 Outdoor oil-insulated transformers should be separated from adjacent structures and from each other by firewalls, spatial separation, or other approved means for the purpose of limiting the damage and potential spread of fire from a transformer failure.

6.1.4.2 Determination of the type of physical separation to be used between transformers, control equipment, and building structures should be based on a detailed analysis of the following:

- (1) Type and quantity of oil in the transformer
- (2) Size of a postulated oil spill (surface area and depth)
- (3) Type of construction of adjacent structures
- (4) Type and amount of exposed equipment, including high line structures, motor control center (MCC) equipment, breakers, other transformers, and so forth.
- (5) Power rating of the transformer
- (6) Fire suppression systems provided
- (7) Type of electrical protective relaying provided
- (8) Availability of replacement transformers (long lead times)
- (9)* The existence of fast depressurization systems

Once this analysis has been completed, any decisions made as a result should be included as part of the Fire Protection Design Basis Document.

6.1.4.3* Unless consideration of the factors in 6.1.4.2 indicates otherwise, it is recommended that any oil-insulated transformer, including the edge of the postulated oil spill, be separated from adjacent structures by a 2-hour-rated firewall or by spatial separation in accordance with Table 6.1.4.3. Where a firewall is provided between structures and a transformer, it should extend vertically and horizontally as indicated in Figure 6.1.4.3.

6.1.4.4 Unless consideration of the factors in 6.1.4.2 indicates otherwise, it is recommended that adjacent oil-insulated transformers containing 500 gal (1893 L) or more of oil be separated from each other by a 2-hour-rated firewall or by spatial separation in accordance with Table 6.1.4.3. When the oil containment, as shown in Figure 6.1.4.4, consists of a large, flat concrete containment area that holds several transformers and other equipment in it without the typical pit containment areas, specific containment features to keep the oil in one transformer from migrating to any other transformer or equipment should be provided. Subsection 6.5.6 can be used for guidance. Where a firewall is provided between transformers, it should extend at least 1 ft (0.31 m) above the top of the transformer casing and oil conservator tank and at least 2 ft (0.61 m) beyond the width of the transformer and cooling radiators, or to the edge of the containment area, whichever is greater. (*See Figure 6.1.4.4 for an illustration of the recommended dimensions for a firewall.*)

6.1.4.5* Where a firewall is provided, it should be designed to withstand the effects of projectiles from exploding transformer bushings or lightning arresters.

6.1.4.6 Outdoor transformers insulated with a less flammable liquid should be separated from each other and from adjacent structures that are critical to power generation by firewalls or spatial separation based on consideration of the factors in 6.1.4.2 and 6.1.4.5.

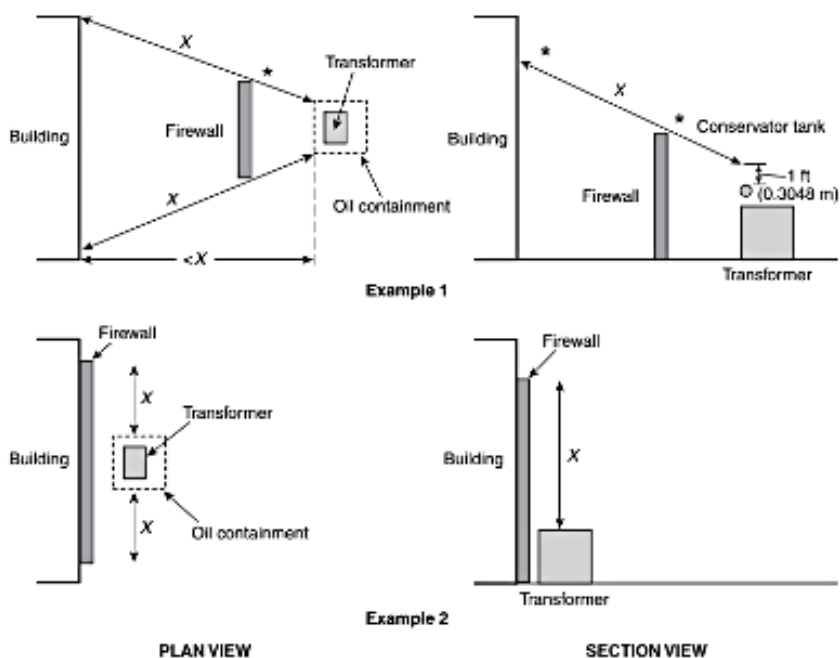
6.1.5 Indoor Transformers and Other Oil-Filled Electrical Equipment.

6.1.5.1 Dry-type transformers and other non-oil-filled electrical equipment are preferred for indoor installations. Dry-type capacitors or capacitors filled with a less flammable liquid should be considered to minimize the fire risk associated with oil-filled equipment.

6.1.5.2* Oil-insulated transformers or other oil-filled electrical equipment of greater than 100 gal (379 L) oil capacity installed indoors should be separated from adjacent areas by fire barriers of 3-hour fire resistance rating.

Table 6.1.4.3 Outdoor Oil-Insulated Transformer Separation Criteria

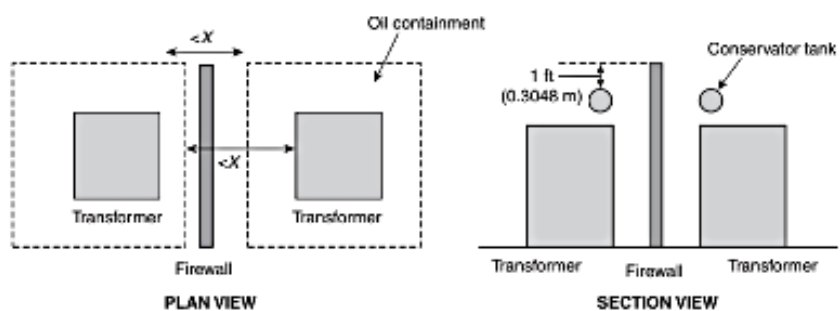
Transformer Oil Capacity	Minimum (Line-of-Sight) Separation Without Firewall		
	gal	l.	m
<500	<1893	5	1.5
500–5000	1893–18,925	25	7.6
>5000	>18,925	50	15



X : Minimum separation distance from Table 6.1.4.3.

*: See A.6.1.4.3.

FIGURE 6.1.4.3 Illustration of Oil-Insulated Transformer Separation Recommendations.



X : Minimum separation distance from Table 6.1.4.3.

FIGURE 6.1.4.4 Outdoor Oil-Insulated Transformer Separation Criteria.

Figure 2: NFPA 850 Requirements for Fire Protection



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

The proposed work includes the removal and replacement of three (3) transformers and installation of a 2-hour fire/blast wall between them. The transformers and any hazardous materials being removed are required to be disposed of properly and proper records retained by the contractor in accordance with EPA and Puerto Rico requirements and regulations. The existing spill containment system does not require modification with the installation of new transformers. The design of the new transformers is more efficient than the existing 80-year-old transformers and requires less oil capacity. One (1) transformer can be taken out of service at a time without impacting operations. Sequencing of demolition of existing and installation of new transformers and fire/blast walls is as follows:

1. Disconnect and remove transformer U-1 from operation.
2. Provide and install a new 6250 KVA, 36400/2400 Volt, 3-phase transformer (U-1) and associated wiring and appurtenances per codes and standards. Construct new 6 IN thick concrete equipment pad for transformer (17 FT long x 13 FT wide).
3. Once the new U-1 transformer has been tested and is operational, disconnect and remove transformer U-2 from operation.
4. Provide and install a new 7500 KVA, 38060/2300 Volt, 3-phase transformer (U-2) and associated wiring and appurtenances per codes and standards. Construct new 6 IN thick concrete equipment pad for transformer (17 FT long x 13 FT wide).
5. Once the new U-2 transformer has been tested and is operational, disconnect and remove transformer U-3 from operation.
6. Provide and install a new 7500 KVA, 38060/2300 Volt, 3-phase transformer (U-3) and associated wiring and appurtenances per codes and standards. Construct new 6 IN thick concrete equipment pad for transformer (17 FT long x 13 FT wide).
7. Once the new transformer U-3 has been tested and is operational, construct the fire/blast walls.
8. Construct the fire/blast wall between storage tank and transformer U-3.
9. Construct the fire/blast wall between transformers U-3 and U-2.
10. Construct fire/blast wall between transformers U-2 and U-1.

The scope of work to meet code compliance is to provide and install 2-hour rated fire/blast walls between the substation transformers. The walls will extend 1 FT above the top of the transformer casing and oil conservator tank and 2 FT beyond the width of the transformers and cooling radiators. See Figure 7 for existing and new transformer footprint and new fire/blast walls layout. The fire/blast walls will be constructed at the following locations with ground disturbance dimensions as follows: **Note- ground area has been previously disturbed when the existing concrete pad footprint was installed, so no "new disturbance" will be conducted.**

1. Fire/blast wall between storage tank and transformer U-3
 - Location: [REDACTED]
 - Firewall dimensions: 17 FT long x 20 FT high x 8 IN thick, steel reinforced, with three steel support columns
 - Ground disturbance: None
2. Fire/blast wall between transformers U-3 and U-2
 - Location: [REDACTED]
 - Firewall dimensions: 17 FT long x 20 FT high x 8 IN thick, steel reinforced, with three steel support columns



- Ground disturbance: None
3. Fire/blast wall between transformers U-2 and U-1
- Location: [REDACTED]
 - Firewall dimensions: 17 FT long x 20 FT high x 8 IN thick, steel reinforced, with three steel support columns
 - Ground disturbance: None

All work will be designed and completed in accordance with locally adopted codes and standards, Consensus based standards, and Federal regulations, laws, and Executive Orders.

Note: All project generated waste, including oil, hazardous materials, construction and demolition debris, will be disposed of in a manner consistent with local, territorial, and federal laws and regulations. See below for permitted disposal locations:

Hazardous Waste Disposal Contractor

Company: Triumvirate Environmental
Address: 53 Calle Palmeras, Suite 401, San Juan, Puerto Rico 00694
Phone Number: (888) 834-9697

Recycling (All Projects)

Company: Island Festival Rentals & Recycling Corp.
Address: PR-181, Ramal 860 km 5.9, Bo. Las Cuevas, Municipio Trujillo Alto, PR
Coordinates: 18.359275, -66.998208
Phone Number: (787) 771-9741

Landfill for North and East Side of PR

Company: El Coqui Landfill
Address: PR-3, Int. 923 km 1.7 Municipio de Humacao PR
Coordinates: 18.126094, -65.811380
Phone Number: (787) 852-4444
Permit Number: IDF360016

Landfill for South and West Side of PR

Company: EC Waste - Peñuelas Valley Landfill
Address: PR-385, km 4.5, Bo. Tallaboa, Peñuelas PR
Coordinates: 18.015969, -66.704320
Phone Number: (787) 836-3700
Permit Number: IDF570020



Figure 3: Dos Bocas transformers (from left to right – U-3, U-2, and U-1)



Figure 4: Dos Bocas transformers being repaired and tested



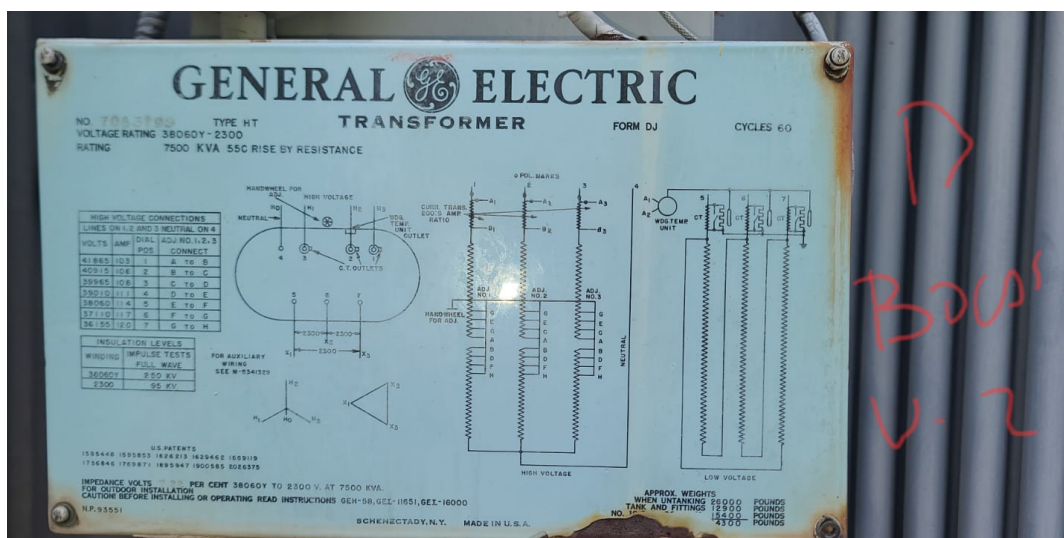


Figure 6: Dos Bocas Transformers U-2 and U-3 nameplate

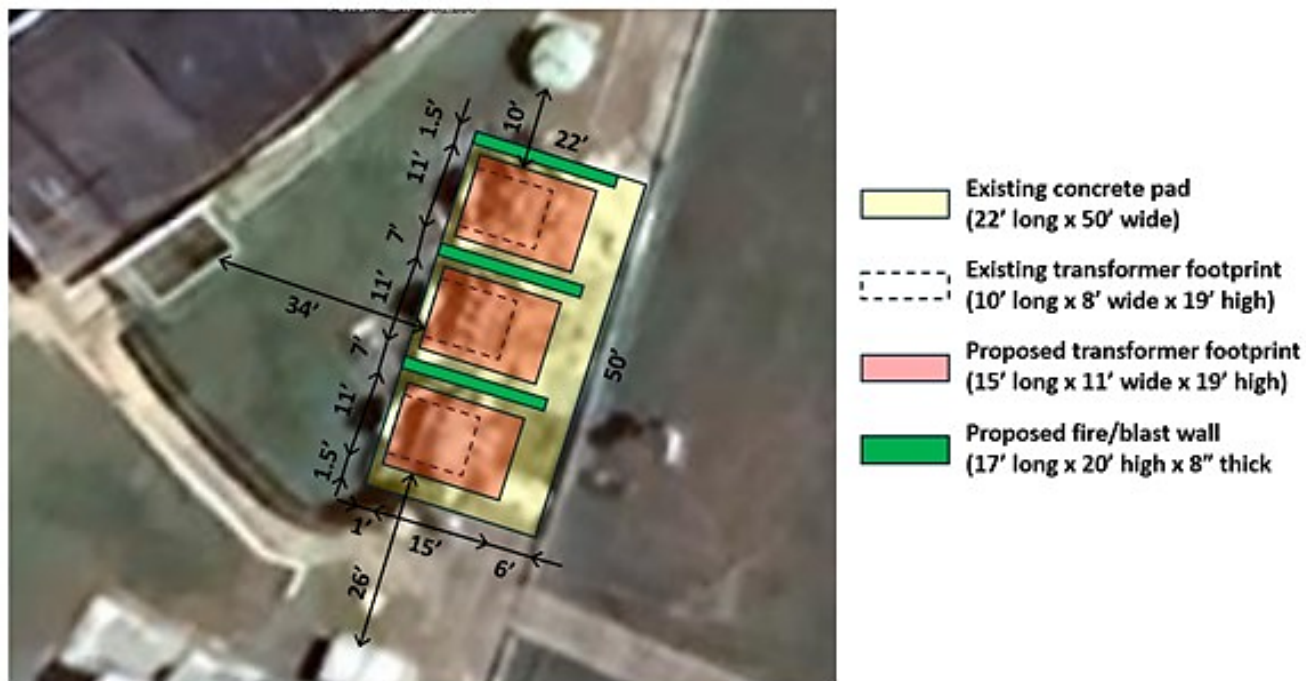


Figure 7: Layout of existing/new transformers and new fire/blast walls



3.3. Identified Staging Area

- **Staging Area 1:** Vicinity of Dos Bocas Hydroelectric Plant (18.335885, -66.666761)
Estimated land: 2,835 SF

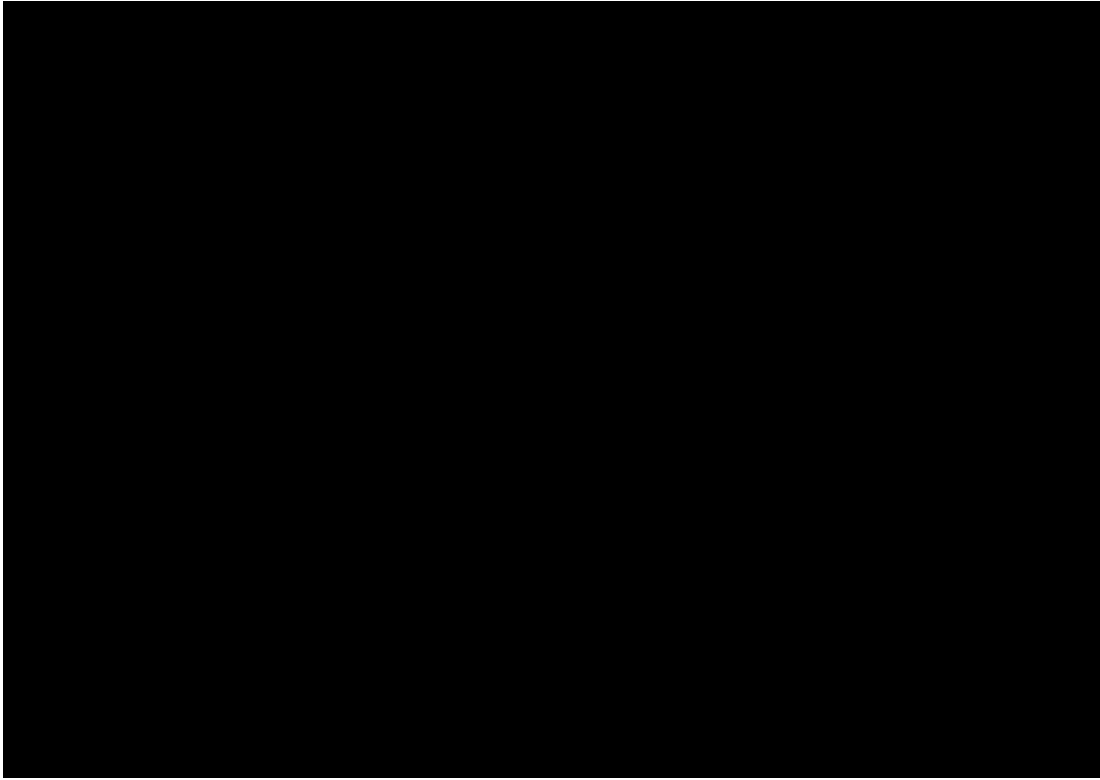


Figure 8: Staging area and access route



3.4. Type of Project

Indicate whether the intended plan is a(n):

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 recommendation.

Restores to Codes/Standards

Note: If 30% 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 30% A&E work.

3.5. 30% Architectural and Engineering (A&E)

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

Yes

Section 4. Codes and Standards

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

4.1 Codes, Specifications, and Standards

Yes If yes, describe how incorporated below.

Applicable codes and standards will be identified and incorporated into the plans and specifications.

4.2 Industry Standards

Yes If yes, describe how incorporated below.

No



Section 5. Cost Estimates

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. This estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies. For the engineering estimates provided, the 30% **Engineering estimate is a subset of the Engineering Total, which is a subset of the Total Cost.**

Note that cost estimates presented herein are order-of-magnitude estimates only. Cost estimates are expected to be revised once additional information is available. Costs will be adjusted to current dollars based on appropriate escalation factors

Cost Type	Total Amount (\$M)
Preliminary Architectural & Engineering Design (C.1 + H.1)	\$1,015,152.86
Final Design and Engineering (C.1 + H.1 + H.2)	\$1,705,030.22
Construction	\$7,077,680.18
Total Project Estimated Cost	\$8,782,710.40



Section 6. 406 Hazard Mitigation Proposal

6.1 406 Mitigation Opportunity Scope of Work

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6.2 406 Mitigation Opportunity Cost Estimate

Hazard mitigation is not proposed for this project.

Section 7. EHP Requirements

The preceding sections are intended to provide FEMA EHP with the information described in the FEMA, Part C – Submissions Checklist. The subrecipient is responsible for obtaining all applicable federal, Puerto Rican, and local permits and other authorizations for project implementation prior to construction and must adhere to all permit conditions. The subrecipient is prepared to provide FEMA with additional project specific information to ensure DSOW completeness.

Program Manager Lead Certification

Based on my knowledge and information available to date, I certify that the contents of this document accurately reflect the project scope of work and cost estimates.

Program Manager's Printed Name

Date

Title

Signature

PREPA Project Sponsor Comments

Comments
<Insert any comments here>



PREPA Project Sponsor's Printed Name

Date

Title

Signature



Section 7. Attachments

7.1. Project Detailed Cost Estimates

7.2. Engineering Studies and Designs

7.3. Location Maps and Site Pictures

7.4. Other: (Please Describe)