

**GOBIERNO DE PUERTO RICO
JUNTA REGULADORA DE SERVICIOS PÚBLICOS DE PUERTO RICO
NEGOCIADO DE ENERGÍA DE PUERTO RICO**

IN RE: PLAN PRIORITARIO PARA LA
ESTABILIZACIÓN DE LA RED
ELÉCTRICA

CASO NÚM.: NEPR-MI-2024-0005

NEPR

Received:

Sep 11, 2024

11:07 PM

**MOCIÓN PARA SOMETER PRESENTACIÓN ENMENDADA DE VISTA TÉCNICA
AL NEGOCIADO DE ENERGÍA DE PUERTO RICO:**

COMPARECE la Autoridad de Energía Eléctrica de Puerto Rico ("AEE" o "Autoridad"), a través de su representación legal que suscribe y, muy respetuosamente expone y solicita:

1. En el día de hoy se celebró la vista técnica señalada en el caso de referencia, donde el público en general tuvo la oportunidad de conocer los planes de mejoras ordenados por el Negociado de Energía para mitigar las fallas recurrentes y eliminar los puntos débiles que afectan la calidad del servicio a los consumidores.
2. En la vista, el Negociado de Energía brindó el espacio y oportunidad para que LUMA Energy, LLC y LUMA Energy ServCo, LLC (conjuntamente "LUMA"), Genera PR, LLC ("Genera") y la AEE expusieran en detalle los planes de mejoras preparados.
3. El 6 de septiembre de 2024, la AEE sometió al Negociado de Energía la presentación a ser utilizada en la vista, según le fue ordenado a las partes mediante Resolución y Orden del 9 de agosto de 2024. No obstante, la AEE realizó unos cambios a la presentación, por lo que se somete nuevamente

ante el Negociado de Energía la presentación actualizada según fue proyectada durante la vista técnica.

POR TODO LO CUAL, la Autoridad solicita respetuosamente al Negociado de Energía que tome conocimiento de lo antes expuesto.

RESPETUOSAMENTE SOMETIDA.

En San Juan, Puerto Rico, a 11 de septiembre de 2024.

CERTIFICO: Por la presente certificamos que este documento fue presentado ante la Oficina del Secretario de la Oficina de Energía utilizando su Sistema de Presentación Electrónica en <https://radicacion.energia.pr.gov/login>, y se ha enviado copia de cortesía mediante correo electrónico a LUMA Energy, LLC a margarita.mercado@us.dlapiper.com, valeria.belvis@usdlapiper.com y a Genera PR, LLC a lrm@roman-negron.com.

GONZÁLEZ & MARTÍNEZ

1509 López Landrón
Séptimo Piso
San Juan, PR 00911-1933
Tel.: (787) 274-7404

f/ Alexis G. Rivera Medina

RUA Núm.: 18.747
E-mail: arivera@gmlex.net



Puerto Rico Electric Power Authority

Hydroelectric Power Plants – Preliminary Plan

HydroCo
Puerto Rico Energy Bureau
September 11, 2024

Preliminary Plan of Improvements – Actual Status of Hydroelectric

Unit	Capacity (MW)	A	N.A.	Description of any limitation	Estimated date to return for service
Rio Blanco 1	2.5		X	Turbine and generator available. Major damage to penstock due to hurricane Maria. Penstock undergoing partial repairs to return unit to service at limited capacity. Main Power Transformer failed acceptance tests of June 2024. Needs replacement. Awaiting FEMA approval.	TBD
Rio Blanco 2	2.5		X		
Dos Bocas 1	5		X	Main Power Transformer passed load test. Turbine and generator ready for operation. An operational 38 kV line event in June 2024 damaged two 38 kV PT's, ratio 330:1. PT's in procurement process; estimated delivery time of 8 to 10 weeks.	Nov. 2024
Dos Bocas 2	5	X		None	-----
Dos Bocas 3	5	X		None	-----
Caonillas 1-1	10		X	Flooded and major damages due to hurricane Maria. Repairs awaiting FEMA approval.	TBD
Caonillas 1-2	10		X		
Caonillas 2-1	3.6		X	Flooded and major damages during hurricanes Georges and Maria. Reservoirs 100% sedimented Repairs awaiting FEMA approval.	TBD
Toro Negro 1-1	1.5	X		None	-----
Toro Negro 1-2	1.5	X		None	-----
Toro Negro 1-3	1.5	X		None	-----
Toro Negro 1-4	4		X	Turbine and generator available. Damages on penstock. Partial repairs ongoing. Delayed	Sept. 2024
Toro Negro 2-1	2		X	Turbine and generator available. Damages on penstock. Partial repairs ongoing. Delayed	Sept. 2024
Garzas 1-1	3.6	X		None	-----
Garzas 1-2	3.6	X		None	-----
Garzas 2-1	5		X	Turbine and generator available. Transmission line 1100, of 38 kV, damaged since hurricane Maria: Awaiting LUMA repairs - rescheduled for the 3rd Qtr 2025.	Sept. 2025
Yauco 1-1	25		X	Catastrophic damages on turbine. Repairs awaiting FEMA approval.	TBD
Yauco 2-1	4.5	X		Capacity limited to 2 MW due to problems on CT's ratio located after Main Power Transformer (LUMA'S side) – Pending for LUMA.	-----
Yauco 2-2	4.5	X		None	-----

A: Available
N.A: Not Available

Installed Capacity: 100.3 MW
Available Capacity: 30.7 MW

Note: All the hydroelectric power plants mentioned above, in addition to the installations declared in disuse: Isabela Plants 1, 2, 3 and 4, and Carite Plants 1, 2 and 3, are within the project awaiting FEMA approval. This project aims to modernize the facilities, upgrading their technology to align with 21st-century standards, which will enhance their efficiency, reliability, and capacity to meet future energy demands and to support PR100 goal with the integration of more intermittent renewable energy sources to the grid.



Puerto Rico Electric
Power Authority

Preliminary Plan of Improvements: Hydroelectric System

PREPA's preliminary plans to improve the electrical system are based on securing the operational availability to dispatch 30.7 MW, on increasing the availability of hydroelectric generation units for a maximum of 42 MW by the end of 2025, and on the obligation of \$857,968,150 under FEMA's 428 and 404 to execute projects related to the hydroelectric infrastructure system in a ten-year period. However, due to PREPA's limited human resources and budgetary constraints, with only approximately 39 employees assigned to the hydroelectric plants, achieving the necessary work within the two-year timeframe is challenging.

1. Short Term Strategy

- a. Ensuring Optimal Functioning and Operational of 30 MW (9 units): by having a network of on-demand contracts with various specialized companies while FEMA-funded rehabilitation and mitigation projects are being approved and executed.
 - These contracts, which are subject to the approved operational budget, enable the immediate intervention of experts in identifying and resolving technical issues that may arise, as well as in the preventive, predictive and corrective maintenance of the infrastructure.

Contract No.	Description	Service Supplier
102230	Maintenance to Air Conditioning Systems	AIT TECHNOLOGIES INC
102234	Crane Rental	QUALITY EQUIPMENT INC
102552	Oil Sampling and Analysis	SPECTRON CARIBE INC
103440	Divers	CARIBBEAN DIVING CONTRACTORS LLC
102540	Electrical Works	VITAL ENERGY CORPORATION
102267	Fire Extinguisher and Suppresor Systems Insp & maint.	FIRE CONTROL CORP
103283	Pest Control	ISLAND EXTERMINATING SERVICES INC
102475	Repairs and Manitenance of Ovehead Cranes	VITAL ENERGY CORPORATION
102462	Mechanical Works	VITAL ENERGY CORPORATION
102623	Protection Systems, Relays and Breakers	PRO ENERGY CORP
102463	Welding Sertvices	VITAL ENERGY CORPORATION
102472	Vibrations and Thermography	VIBRANALYSIS INC
102204	Scaffolds Rental	BRAND ENERGY INFRASTRUCTURE SERVICES
103675	Transformers Inspection and Maintenance Services	STAR ELECTRICAL SERVICES AND GENERAL SUPPLIES



Preliminary Plan of Improvements: Hydroelectric System

- ✓ The recovering of 6 MW during the last quarter of 2024: Toro Negro 1-4 and 2-1.
 - ✓ The recovering of 5 MW in the 3rd quarter of 2025, conditioned to repairs of line 38 kV, # 1100: Garzas 2-1.
- The plan by the end of year 2025 is to increase the available generation capacity to a maximum of 42 MW.



Preliminary Plan of Improvements: Hydroelectric System

b. Repairs of existing components to restore 50 MW: subject to the availability of necessary funds within the approved operational budget.

Unit	Capacity (MW)	Scope of Work	Estimated Budget	Estimated Timeline
Rio Blanco 1	2.5	Major damage to penstock and its supports (\$6.3M). Replacement of Main Power Transformer (\$1M).	\$7.3M	2 years
Rio Blanco 2	2.5			
Caonillas 1-1	10	Removal of sediments at turbine outfall (\$3.611M); recondition of breakers, control and protection system (\$.700M) .	\$4.311M	2 years
Caonillas 1-2	10			
Yauco 1-1	25	Turbine general repairs and rehabilitation: buckets, runner, deflector shafts, nozzles jets, dissipating valves, turbine shaft, bearings, bushings, generator brakes, reinsulating of generator, thrust block, governor, lube system, MPT maintenance.	\$8.5M	2 years
Total			\$20.011M	2 years

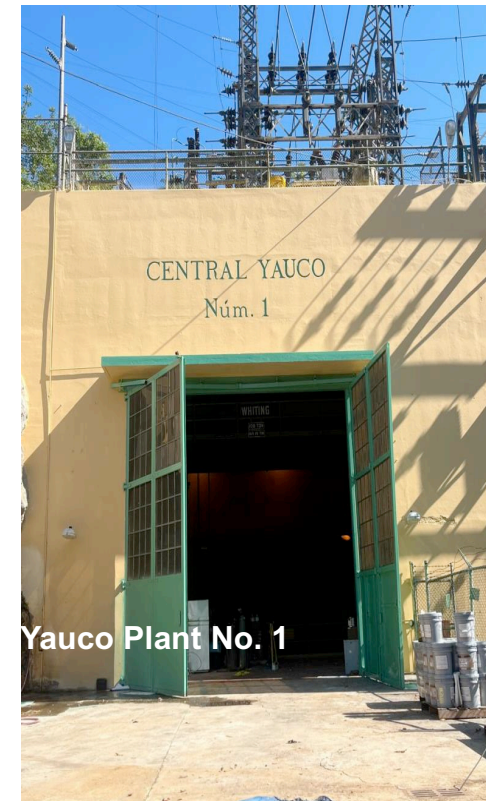


Preliminary Plan of Improvements: Hydroelectric System

2. Reconstruction of Hydroelectric Plants, FEMA 404 (Fiona): Long Term

Dos Bocas	Caonillas 1	Caonillas 2	Toro Negro 1	Toro Negro 2	Garzas 1	Garzas 2	Yauco 1	Yauco 2	Rio Blanco	Isabela 1	Isabela 2	Carite 1	Carite 2	Carite 3
3	2	1	4	1	2	1	1	2	2	2	2	2	2	1

- **Objective:** Increase available generation capacity up to 120 MW
- **Execution Timeline:** > 3 years
- **SOW:** Retrofit, Refurbish, Repairs and Upgrade with technology of the 21st Century
- **Total Projects** 15 sites, 28 Units
- **Status:** Awaiting FEMA approval. Application Pkg No. 1966
- **Strategy:** RFP for EPC contract (s), prioritizing plants Caonillas 1 and Yauco 1 - Recovering over 40 MW.
- **Total Investment for 28 Units (Est.): \$320.79M**



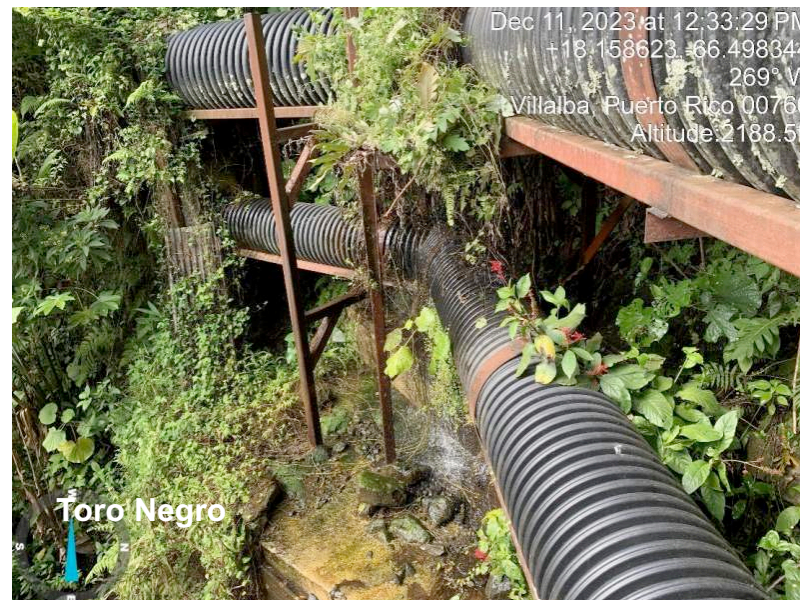
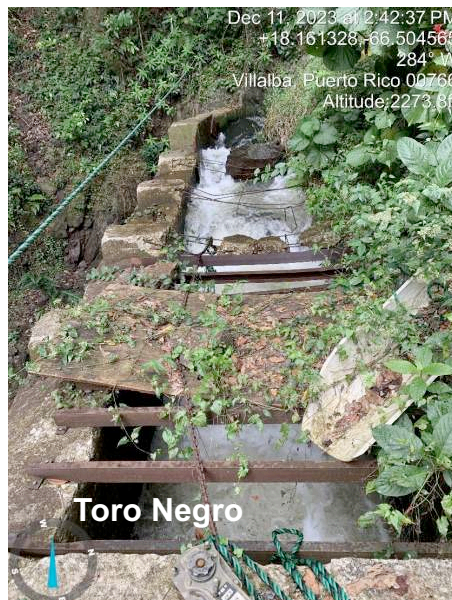
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Preliminary Plan of Improvements: Hydroelectric System

3. Reconstruction of Penstock and Conveyances Structures, FEMA 428 (Maria) : Rio Blanco (Naguabo) and Toro Negro Systems (Orocovis, Ciales, Villalba): Long Term

- SOW: Replacement of Penstocks, Valves, Supports, and Repairs of Canals
- Execution Timeline: > 3 years
- Status: 30% design submitted to FEMA on mid December 2023, and in FEMA's EHP Review since June 2024.
- Strategy: Design & Build contract(s)
- Total Investment (Est.) for Rio Blanco and Toro Negro: \$109,842,083.55 and \$51,984,905.83 respectively.

Rio Blanco GM #: 180723 Toro Negro GM #: 436468

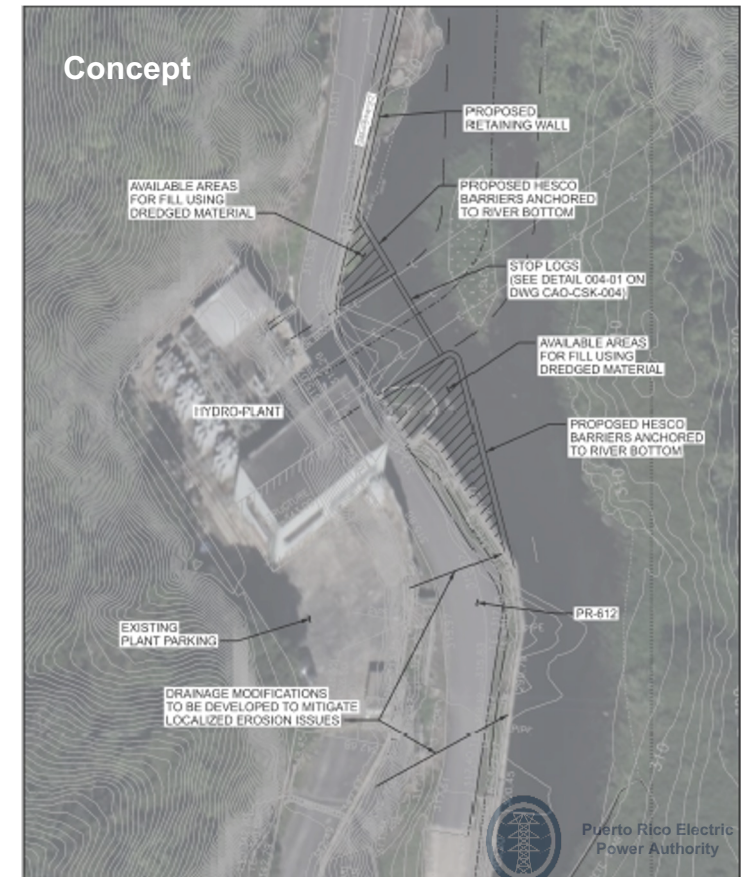


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Preliminary Plan of Improvements: Hydroelectric System

4. Caonillas Plant No. 1 Coffe Dam Project, FAast FEMA 428 (Maria)

- SOW: Construction of a temporary coffer dam for dredging the discharge channel, and discharge tube cleaning to complete the damages inspection.
- Execution Timeline: 2 years
- Status: Detailed Revised Scope of Work submitted to FEMA in the 1st week of January 2024. Awaiting FEMA approval to proceed 30% design required for FEMA's EHP review. GM #: 728260
- Strategy: Design and Build contract
- Total Investment (Est): \$3,611,000



Preliminary Plan of Improvements: Hydroelectric System

5. Dredging Projects for Eleven Reservoirs, FEMA 428 (Maria): Long Term

- SOW: Dredging of Dos Bocas, Caonillas, Guayabal, Matrullas, Guineo, Loco, Guayo, Lucchetti, Guajataca, Guerrero, Garzas
- Objective: Sediment removal to bring each reservoir's capacity previous hurricane Maria's impact.
- Execution Timeline: 10 years
- Status: RFP for design awarded. Contracts signed. Contractors mobilized in August 2024 . Budget: \$21,740,160.00. PW 9510
 - ✓ CSA Group \$9,381,890.91 (Dos Bocas, Caonillas, Garzas, Guajataca, Guerrero): 30% design by 1st Qtr year 2025
 - ✓ AECOM \$9,858,269.09 (Matrullas, Guineo, Guayo, Guayabal, Loco, Lucchetti): 30% design by 2nd Qtr 2025
- Strategy: Issue RFP for construction after FEMA's EHP evaluation is approved (30% design).
- Total Investment for Construction (Est): \$350,000,000



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