

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

NEPR

Received:

Apr 29, 2020

9:36 PM

IN RE:

**REQUEST FOR PROPOSALS FOR
TEMPORARY EMERGENCY
GENERATION**

CASE NO.:

NEPR-AP-2020-0001

SUBJECT:

Progress and Status Report

SECOND PROGRESS AND STATUS REPORT

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW the Puerto Rico Electric Power Authority through the undersigned legal representation and respectfully submits the *Costa Sur Damage Assessment and Repairs Project Status Report* dated April 29, 2020 (the "Report"). See Exhibit. The Report is submitted in compliance with the *Resolution and Order* dated March 3, 2020, Sec. III (9).

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 29th day of April 2020.

/s/ Katuska Bolaños

Katuska Bolaños

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Exhibit

Costa Sur Damage Assessment and Repairs Project Status Report

dated April 29, 2020



**Puerto Rico
Electric Power
Authority**

Puerto Rico Electric Power Authority (PREPA)

**Costa Sur Damage Assessment and Repairs
Progress Status Report
April 29, 2020**

Introduction and Outline

Introduction

- PREPA is currently assessing the extent of the damages suffered in the Costa Sur power plant facility
- The goal, if achievable, is to repair the most critical elements of the plant and place Unit 5 in commercial operations as soon as possible
- In addition, PREPA issued an RFP for up to 500MWs of temporary mobile generation to ensure PREPA has additional sources of generation capacity before summer peak demand
- This report outlines PREPA’s progress in its assessment, repairs, and procurement activities related to Costa Sur’s power plant facility and PREPA’s RFP for temporary mobile generation

Report Outline

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Executive Summary

Key Year-to-Date Achievements:

- Completed baseline of project schedule
- Completed interviews and evaluation of proponents for Temporary Generation RFP
- Secured approval to utilize PREPA's Emergency Procurement process to support project needs
- Mobilized contractors for structural repairs and asbestos and lead removal
- Mobilized contractors to initiate boiler repair works and completed repairs in overhead crane for Units 3-6
- Selected contractor for condensate water tank repairs

Scope and Metrics by Workstream

61
Identified Workstreams

8
Workstreams at 100% Completion

7
Workstreams Added (Since Last Report)

Financials

Estimated Total Cost*

≈\$25,200,000

\$224,926
Total YTD Actual Spend

\$592,654
Total YTD Amount Invoiced

0.89%
% Utilization (Actual Spend)

2.35%
% Utilization (Invoices)

Procurement Status

31
Total Procurements

13
Emergency Procurements

\$11.11M
Amount Contracts Awarded

24

3

2

1

1

Not Started

In-Development

Published

Evaluating RFP Responses

Awarded

Schedule

Task Work Breakdown Curve

Date	Value
2/28/20	3
3/6/20	0
3/13/20	4
3/20/20	4
3/27/20	5
4/3/20	6
4/10/20	2
4/24/20	15
5/1/20	14
5/8/20	19
5/15/20	37
5/22/20	39
5/29/20	40
6/5/20	40
6/12/20	46
6/19/20	27
6/26/20	20
7/3/20	6
7/10/20	13
7/17/20	10
7/24/20	25
7/31/20	24
8/7/20	12
8/14/20	3
8/21/20	7

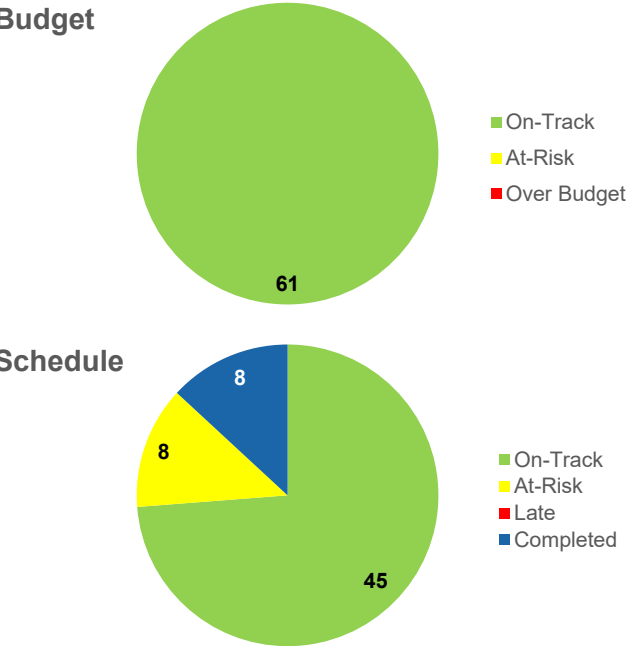
17%
% Completed

188
Tasks Due in May

101
Tasks Due in June

3
YTD Tasks Overdue

Key Activities Due in May 2020	Workstream
Proponent selection notification	Temporary Generation RFP
Contract negotiation	Temporary Generation RFP
PREPA's Board, PREB, and FOMB approvals	Temporary Generation RFP
Inspection and Condition Survey Water Tunnel Condensers 5 & 6	Condenser Water Tunnels
Reestablish of Potable Water System	Potable Water System
Temporary Laboratory Preparation and Commissioning Trailer	Temp Lab & Commissioning
Temporary Office for Shift Engineer Trailer	Temp Office Shift Engineer
Fuel Oil System Repairs	Boiler Unit 5 Interior Works
Install Boiler Burner Ignitors	Boiler Unit 5 Interior Works
Condenser Pump (CP) 5-1 Repairs	Auxiliary Equipment Repairs
Condenser Pump (CP) 5-2 Repairs	Auxiliary Equipment Repairs
Boiler Circulating Water Pump 5-1 Repairs	Auxiliary Equipment Repairs
Boiler Circulating Water Pump 5-2 Repairs	Auxiliary Equipment Repairs
Forced Draft Fan (FDF) 5-1 Works	Auxiliary Equipment Repairs
Forced Draft Fan (FDF) 5-1 Works	Auxiliary Equipment Repairs



3 *** Note:** Removed from estimated total project cost the cost associated with the buildout of new condensate and raw water tanks (approximately \$9.7M). See workstreams 21-22 in slide 5 for details

Project Summary by Workstream

Metric Legend

Overdue At-Risk On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
1	Exterior Inspection Boilers Units 5 and 6	100%	\$83,170	3/9/2020	3/30/2020	On-Track	
2	Preliminary Structural Inspection Work Units 3, 4, 5 and 6	100%	\$392,895.10	1/20/2020	1/30/2020	On-Track	
3	Initial Assessment High Energy Piping Post Seismic Event Units 5 and 6	100%	\$22,540	2/3/2020	2/6/2020	On-Track	
4	Lead Removal for Immediate Repair Works for Safety and Continuing Inspection Work Units 3, 4 and 5	100%	\$86,940.69	2/3/2020	3/25/2020	On-Track	
5	Immediate Repair Works For Safety and Continuing Inspection Work Units 3, 4 and 5	100%		2/7/20	3/3/20	On-Track	
6	Water and Fuel Tank Condition Survey (20 Tanks)	100%	\$134,448	2/10/20	3/22/20	On-Track	
7	Interior Inspection Work Boilers Units 5 and 6	100%	\$66,030	2/17/20	4/7/20	On-Track	
9	Inspection and Condition Survey Water Tunnel Condensers 5 and 6	67%	\$83,100	3/9/20	5/11/20	At-Risk	
10	Geotechnical Post Seismic Event Condition Survey	38%	\$349,046.47	3/12/20	7/2/20	At-Risk	
11	Project Management and Inspection Team for Repairs Unit 5 and Other Works	21%	\$1,020,000	4/13/20	6/19/20	On-Track	
12	Phase 2, 3 and 4 Units 1-6 - Lead Removal Licensing and Work	13%	\$1,111,843	3/30/20	7/23/20	At-Risk	

Workstream Legend

Eng. & Technical Studies	U5 Equipment Repairs	Mark VI and DCS Foxboro	Natural Gas Line Pipe Support
U5 Structural and Boiler Repairs	Office & Control Room Repairs	U5 Start-Up & Commissioning	Essential & Critical Works
Fuel & Water Tank Repairs	Temporary Operational Rooms	Project Management Team	Temporary Generation



Puerto Rico Electric
Power Authority

Project Summary by Workstream (Cont'd)

Metric Legend
■ Overdue
■ At-Risk
■ On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
13	Unit 5 Structural Steel Repair Works (Phase 2 Only)	1%	\$4,000,000	4/21/20	7/18/20	On-Track	
14	Unit 5 Structural Steel Repair Works (Phase 3&4 and Buckstays and Guides)	0%		6/11/20	8/4/20	On-Track	
15	Unit 1&2 Structural Steel Repair Works (Phase 2)	0%		7/14/20	7/30/20	On-Track	
16	Unit 3&4 Structural Steel Repair Works (Phases 2&3)	0%		TBD	TBD	On-Track	
17	Unit 6 Structural Steel Repair Works (All Phases and Buckstays and Guides) and Mobilization / Demobilization for All Units	0%		TBD	TBD	On-Track	
18	Interior Boiler Unit 5 Repair Works	0%	\$500,000	5/4/20	7/27/20	On-Track	
19	Environmental Works on Unit 5 (Boiler Wash and Other)	10%	\$1,000,000	4/22/20	7/13/20	On-Track	
20	Temporary Condensate Water Tanks Repairs and New Water Piping with Supports and Commissioning	35%	\$970,800	4/15/2020	7/16/2020	On-Track	<ul style="list-style-type: none"> Includes cost for conducting design work and temporary repairs
21	New Raw Water Tank 1 (Design and Build)	-	-	TBD	TBD	On-Track	<ul style="list-style-type: none"> Cost to build new tank removed from project estimated cost; approximately \$6.0M
22	New Condensate Water Tanks Design and Build & Construction	-	-	TBD	TBD	On-Track	<ul style="list-style-type: none"> Cost to build new tanks removed from project estimated cost; approximately \$3.7M
24	Demineralized Water Treatment Plant Works (Demi Aero, Demi Resina)	50%	\$840,000	3/24/20	7/27/20	On-Track	
25	Structural Repair Works On Overhead Crane 5 and 6	100%	\$78,492.46	3/9/2020	4/18/2020	On-Track	

Workstream Legend

■ Eng. & Technical Studies	■ U5 Equipment Repairs	■ Mark VI and DCS Foxboro	■ Natural Gas Line Pipe Support
■ U5 Structural and Boiler Repairs	■ Office & Control Room Repairs	■ U5 Start-Up & Commissioning	■ Essential & Critical Works
■ Fuel & Water Tank Repairs	■ Temporary Operational Rooms	■ Project Management Team	■ Temporary Generation



**Puerto Rico Electric
Power Authority**

Project Summary by Workstream (Cont'd)

Metric Legend

■ Overdue
 ■ At-Risk
 ■ On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
26	Civil and Interior Works at Unit 5 and 6 Control Room	0%	\$328,215	4/28/2020	6/29/2020	At-Risk	
27	Compressor Room Demolition and Reconstruction	0%		5/15/20	7/7/20	On-Track	
28	Engineering Room Demolition and Reconstruction	0%		6/2/20	7/11/20	On-Track	
29	Civil Repair Work Shift Engineer Room	0%		6/19/20	7/29/20	On-Track	
30	Crossover Link Desuperheater R&L Installation Work	0%	\$1,800,000	4/25/20	6/29/20	On-Track	
31	Mechanical Inspection, Repair & Alignment (Fans and Pumps)	0%	\$120,000	5/4/2020	7/22/2020	On-Track	
32	Non-Destructive Tests On Steam Piping Unit 5	0%	\$250,000	5/7/20	7/1/20	On-Track	
33	Repair Works on Valves (de Línea) Unit 5	0%	\$49,230	4/29/20	6/13/20	On-Track	
34	Repair Work on Safety Valves Unit 5	0%	-	5/4/2020	7/22/2020	On-Track	<ul style="list-style-type: none"> Safety valves were repaired prior to earthquake event; cost removed from total project estimate (≈\$180k)
36	Overhead Crane for Units 3-6 (This crane shall be used for maintenance work on Units 5 and 6)	80%	\$1,556,943	4/22/202	6/2/2020	On-Track	<ul style="list-style-type: none"> Cost has been updated to only reflect installation and commissioning of crane
37	Insulation Repair Works on Boilers Unit 5	0%	\$700,000	5/9/20	8/7/20	On-Track	
38	Mechanical Repair Works on Condensers Unit 5	0%	\$180,000	6/18/20	7/31/20	On-Track	

Workstream Legend

■ Eng. & Technical Studies	■ U5 Equipment Repairs	■ Mark VI and DCS Foxboro	■ Natural Gas Line Pipe Support
■ U5 Structural and Boiler Repairs	■ Office & Control Room Repairs	■ U5 Start-Up & Commissioning	■ Essential & Critical Works
■ Fuel & Water Tank Repairs	■ Temporary Operational Rooms	■ Project Management Team	■ Temporary Generation



Project Summary by Workstream (Cont'd)

Metric Legend

Overdue At-Risk On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
39	Condenser Circulator Discharge Pipe Coating	0%	\$900,000	6/18/20	7/31/20		
41	Cargo Elevators Units 5 and 6 Repair Works	TBD	\$60,000	TBD	TBD		
42	Inspection on High Energy Supports (Pipe Hangers)	0%	\$250,000	5/29/20	7/11/20		
43	Emergency Generators, Measuring Station, Automation, TWI, Opacimeters 5-6, Heater Repairs, Safety Valves, E Heater Repairs, Oil Flush Turbine U5, Induced and Forced Fans Actuators Installation	0%	\$1,812,000	5/4/20	7/27/20		
44	DCS Foxboro (Boilers)	0%	\$60,000	7/1/20	7/22/20		
45	Mark VI - Turbines	0%	\$60,000	7/1/20	7/22/20		
46	Trip Tests Boilers and Turbine	0%	\$6,000	7/22/20	8/3/20		
47	Repairs on Structural Support Natural Gas Line Pipe	0%	\$1,000,000	4/29/20	8/12/20		
49	Reestablishment of Potable Water System	0%	\$12,000	4/25/20	5/8/20		
50	Reestablishment of Compressed Gases, Sulfuric Acid, CO2 and Caustic Soda Systems	0%	\$12,000	6/29/20	6/30/20		
51	Blow Off Pumps - Tests	0%	\$6,000	6/29/20	7/4/20		

Workstream Legend

Eng. & Technical Studies	U5 Equipment Repairs	Mark VI and DCS Foxboro	Natural Gas Line Pipe Support
U5 Structural and Boiler Repairs	Office & Control Room Repairs	U5 Start-Up & Commissioning	Essential & Critical Works
Fuel & Water Tank Repairs	Temporary Operational Rooms	Project Management Team	Temporary Generation



Project Summary by Workstream (Cont'd)

Metric Legend

Overdue At-Risk On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
52	Hydrostatic Test Boiler Unit 5	0%	\$6,000	7/24/20	8/14/20	On-Track	
53	Temporary Laboratory Preparation and Commissioning (12'x40') Trailer for 1 year, including power, communications, and water connection. Installation of an exhaust hood for tests	0%	\$70,000	4/29/20	5/7/20	On-Track	▪ Cost based on 12-months of service
54	Temporary office for Shift Engineer (12'x 40') Trailer for 1 year, including power, communications, and water connection	0%	\$147,650	5/2/20	5/12/20	On-Track	
55	New Laboratory and Administration Building	0%	\$2,400,000	5/25/20	8/15/20	On-Track	
56	Units 5 Start Up and Commissioning Test and Commissioning Boilers and Turbo-Generator	0%	\$72,000	8/5/20	8/14/20	On-Track	
48	Inspection and Tests MPT Unit 5 and Repair of Dikes	0%	\$85,812	6/17/20	7/9/20	On-Track	
57	MPT 4 Secondary Containment repairs	0%		6/17/20	7/10/20	On-Track	
58	MPT 6 Secondary Containment repairs	0%		6/17/20	7/10/20	On-Track	
59	Mitigation of contaminated terrain switchyard 115kV, Autotransformer	9%	\$20,000	4/8/20	6/13/20	At-Risk	
60	Structural Concrete Repairs Discharge Channel	0%	\$1,750,950	7/6/20	1/7/21	On-Track	
-	Asbestos Removal and Disposal Unit 5	19%	\$199,000	3/23/20	7/4/20	At-Risk	
-	Turbine Inspection and Repairs	0%	TBD	5/4/20	7/28/20	On-Track	▪ Working on finalizing cost estimates for this work

Workstream Legend

Eng. & Technical Studies U5 Equipment Repairs Mark VI and DCS Foxboro Natural Gas Line Pipe Support
 U5 Structural and Boiler Repairs Office & Control Room Repairs U5 Start-Up & Commissioning Essential & Critical Works
 Fuel & Water Tank Repairs Temporary Operational Rooms Project Management Team Temporary Generation



Puerto Rico Electric
Power Authority

Project Summary by Workstream (Cont'd)

Metric Legend

Overdue

At-Risk

On-Track

ID	Workstream Description	% Completion	Est. Cost	Start	Finish	Status	Workstream Notes
-	Generator Inspection and Repairs	0%	TBD	5/4/20	7/29/20		<div>Working on finalizing cost estimates for this work</div>
-	Temporary Generation RFP – Procurement and Contracting	50%	TBD	3/12/20	5/16/20		
-	Temporary Generation RFP – Notice to Proceed to Commercial Operations Date	0%	TBD	5/18/20	7/11/20		

Workstream Legend

Eng. & Technical Studies

U5 Structural and Boiler Repairs

Fuel & Water Tank Repairs

U5 Equipment Repairs

Office & Control Room Repairs

Temporary Operational Rooms

Mark VI and DCS Foxboro

U5 Start-Up & Commissioning

Project Management Team

Natural Gas Line Pipe Support

Essential & Critical Works

Temporary Generation

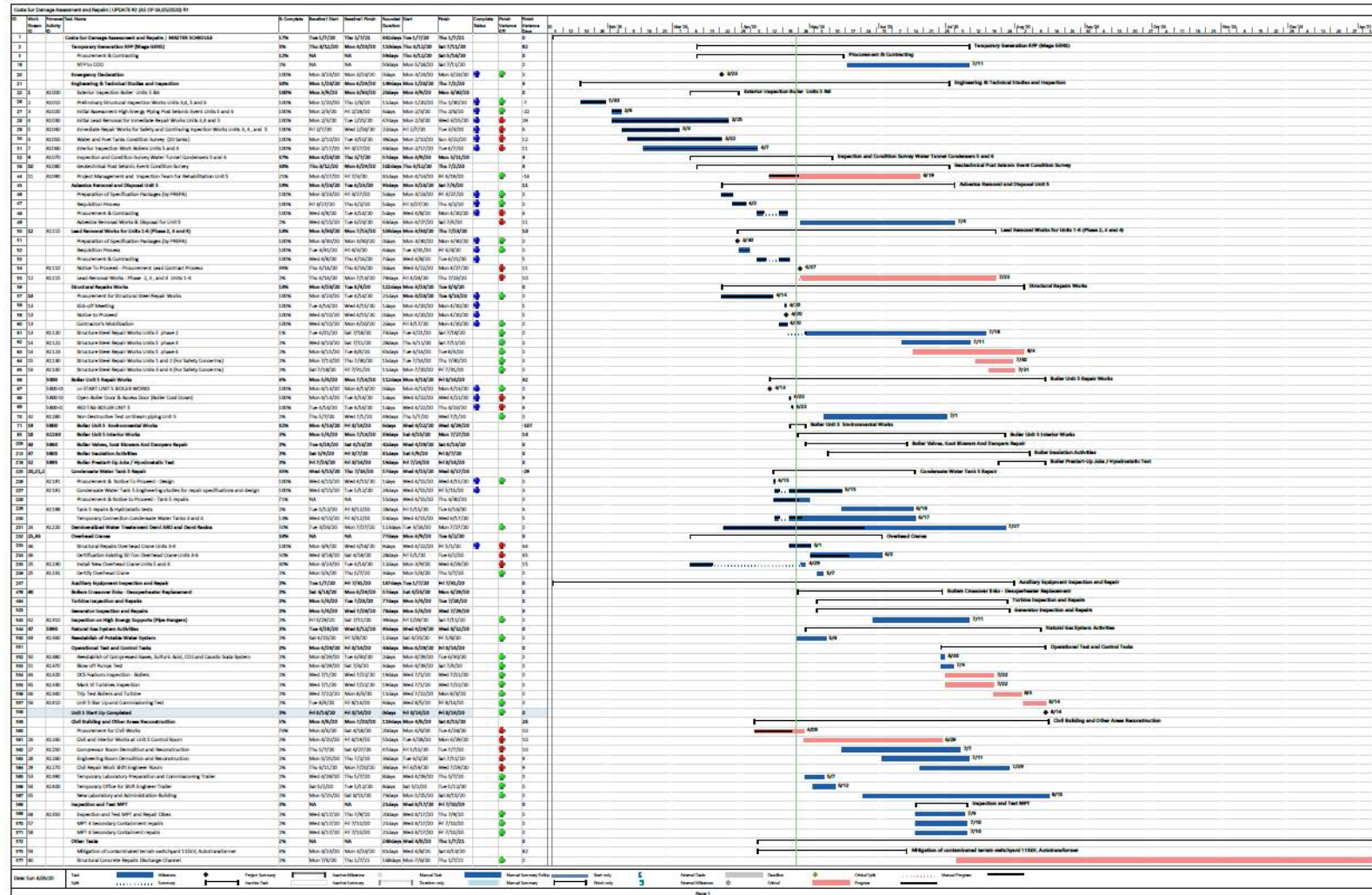
Procurement Plan

The following table outlines the procurements currently in the pipeline to support the Costa Sur Assessment and Repairs project:

Procurement Description	Procurement Type	Est. Amount	Status	Target Date	Update
Task ID #: 22, Structural Repairs Condensate Tank 5	Competitive Emergency Procurement	\$500,000	Published in Power Advocate	5/15/2020	<ul style="list-style-type: none"> Site Visit on April 25, 2020 Expectation for Mobilization before May 15, 2020
Task ID #: 12, Lead Removal and Disposal Works – Structural Repairs Units 1&6	Competitive Emergency Procurement	\$1,111,843	Evaluating RFP Responses	5/7/2020	
Asbestos Removal & Disposal Works Unit 5	Competitive Emergency Procurement	\$199,000	Evaluating RFP Responses	5/1/2020	
Task ID #:32 NDT Services Unit 5	Competitive Emergency Procurement	\$250,000	Evaluating RFP Responses	5/1/2020	
Task ID #:26,27,28,29 - Civil Works Control Room 5-6, Compressor Room, Shift Engineer Room	Competitive Emergency Procurement	\$475,000	Evaluating RFP Responses	5/7/2020	<ul style="list-style-type: none"> Work to begin on the first week of May 2020
Task ID#: 39, Condensate Recirculating Discharge Pipe (12 ft diameter)	Competitive Emergency Procurement	\$1,000,000	Evaluating RFP Responses	5/7/2020	
Task ID#: 59, Removal and Mitigation of Contaminated Soil Switchyard 115 kV	Competitive Emergency Procurement	\$20,000	Published in Power Advocate	5/7/2020	
Task ID#: 53, Temporary Laboratory Offices (Rental - 12 Months)	Competitive Emergency Procurement	\$70,000	Published in Power Advocate	5/7/2020	




11




Emergency Management KPI Dashboard

DEMAND (MW)

1932

AS OF APR 24, 2020

CUSTOMERS ENERGIZED

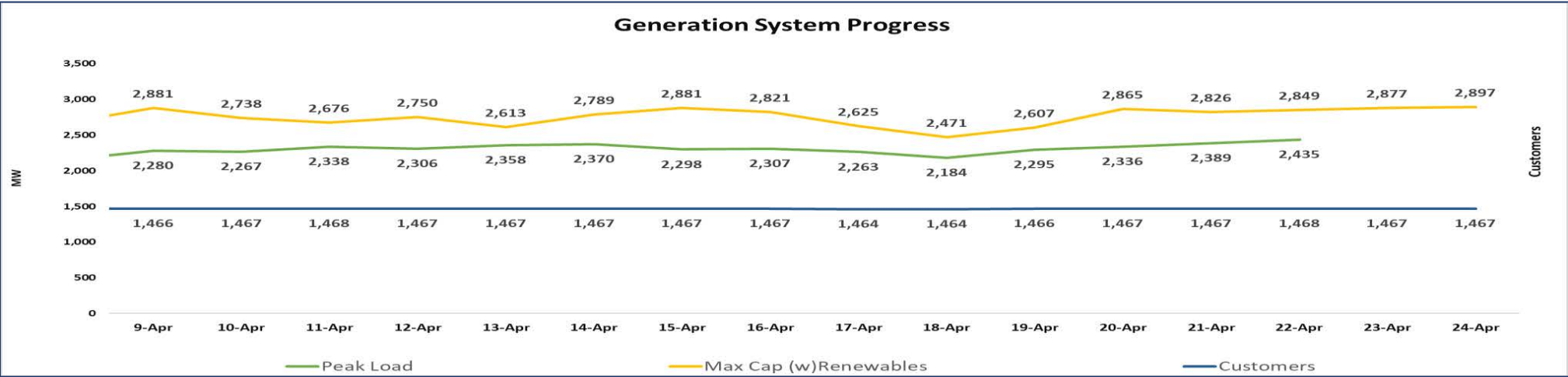
99.99%

1,468,084

Progress of Critical Generation System					
Power Plant	Unit	Power Plant Type	Installed Generation (MW)	Maximum Capacity (MW)	Actual Generation (MW)
San Juan	9	Base Load	100	90	81
Palo Seco	1	Base Load	85	70	60
Palo Seco	3	Base Load	216	130	130
Palo Seco	4	Base Load	216	165	150
Aguirre	1	Base Load	450	400	241
Aguirre CC	Stag 1	Base Load	296	145	95
Aguirre CC	Steam 1	Base Load	96	37	37
Aguirre CC	Stag 2	Base Load	296	150	30
San Juan CC	CT 5	Base Load	220	160	150
San Juan CC	STG 5	Base Load	60	60	44
Cambalache	2	Peaker	82.5	79	0
Cambalache	3	Peaker	82.5	78	0
Daguao	1-1	Peaker	18	18	0
Daguao	1-2	Peaker	21	16	0
Aguirre Hidrogas	2-2	Peaker	21	21	0
Palo Seco Hidrogas	1-1	Peaker	21	21	20
Palo Seco Hidrogas	2-1	Peaker	20	21	21
Palo Seco Megagens	1, 2, 3	Peaker	66	66	66
Jobos	1-2	Peaker	21	18	0
Mayaguez	1	Peaker	55	50	0
Mayaguez	3	Peaker	55	50	0
Yabucoa	1-1	Peaker	21	18	0
Vega Baja	1-2	Peaker	21	19	0
Hidroeléctricas		Peaker	23	23	0
AES	1	Base Load	262	221	218.5
AES	2	Base Load	262	221	218.5
EcoEléctrica	1	Base Load	177	176	116
EcoEléctrica	2	Base Load	178	176	116
ECO	Steam	Base Load	176	175	115
Sub - Total			3618	2874	1909
Renewables		Renewables	194	23	23
Total			3812	2897	1932

Generation Units Out of Service					
Power Plant	Unit	Power Plant Type	Installed Generation (MW)	Maximum Capacity (MW)	Expected date to be online*
Aguirre	2	Base Load	450	300	August 31, 2020
Aguirre CC	Steam 2	Base Load	96	50	TBD
San Juan	7	Base Load	100	70	April 28, 2020
San Juan	8	Base Load	100	50	April 24, 2020
San Juan CC	6	Base Load	220	120	April 24, 2020
Aguirre CC	Stag 2 (2-2)	Peaker	50	50	TBD
Aguirre Hidrogas	2-1	Peaker	21	21	May 7, 2020
Palo Seco Hidrogas	1-2	Peaker	21	19	May 8, 2020
Jobos	1-1	Peaker	21	18	April 30, 2020
Mayaguez	2	Peaker	55	55	TBD
Mayaguez	4	Peaker	55	50	May 4, 2020
Yabucoa	1-2	Peaker	21	19	TBD
Vega Baja	1-1	Peaker	21	18	April 15, 2020
Sub-Total			1231	840	
Cambalache	1	Peaker	83		Long Term Outage
Palo Seco Hidrogas	2-2	Peaker	21		Long Term Outage
Palo Seco Hidrogas	3-1	Peaker	21		Long Term Outage
Palo Seco Hidrogas	3-2	Peaker	21		Long Term Outage
Costa Sur	Power Plant	Base Load	820		Long Term Outage
Palo Seco	2	Base Load	85		Long Term Outage
San Juan Steam	10	Base Load	100		Long Term Outage
Sub-Total			1151	0	
Total			2382	840	

*The dates are as of current information and system conditions, which may vary or change with unexpected events in the electrical system operation.



Mitigation Plans – RFP Temporary Generation (*Status Update*)

Request for Proposal (RFP) for up to 500MWs of temporary mobile generation has been issued to ensure PREPA has additional sources of generation capacity before summer peak demand. Funding for temporary generation seeks to leverage federal funding available from FEMA as well as funding available through insurance claims. The table below outlines the high-level timeline of this procurement effort.

Activities	Target End Date
Issue Request for Proposal	3/12/20
Kick-off Meeting	3/17/20
Site Visits	3/20/20
Proponents Request for Clarifications (RFC)	4/2/20
PREPA's response to RFC	4/3/20
Proposal Submittal Deadline	4/9/20
Interviews / Presentations with Proponents	4/14/20
Selection / Award announcement	4/29/20
RFP evaluating committee selection	4/27/20
Presentations to stakeholders	4/29/20
PREPA Governing Board Approval	4/29/20
Proponent selection notification	5/2/20
Contract negotiation	5/2/20
PREB and FOMB approvals	5/15/20
Notice to Proceed	5/16/20

FEMA Update

- FEMA sent official notification to PREPA stating that FEMA considers the temporary emergency generation project as eligible for federal funding through its Public Assistance Program
- To approve and obligate PWs, FEMA will need the estimates to repair CSPP Unit 5
- Similar information is needed for CSPP Unit 6 and the estimated cost for leasing temporary generation
- Funds are obligated based on estimates (i.e., PREPA submits invoices for FEMA reimbursement)
- O&M costs of the leasing of temporary generation units will not be paid through Public Assistance Program as it is considered part of the leasing cost, but fuel costs for temporary emergency generation is eligible



Project Team and Roles and Responsibilities Matrix

Project Team Members include a diverse representation from different areas of the organization such as Generation, PMO, DFMO, and key advisors .

Team Grouping	Key Roles and Responsibilities
Executive Team	<ul style="list-style-type: none"> Establish governance, provide direction and oversight to broader project team Assign resources, resolve conflicts and risks, and approve execution plan Manage stakeholder communications and engagement
Management Team	<ul style="list-style-type: none"> Review project needs, issues, risks, and plans; resolve or escalate as needed Provide input, feedback, and direction to the Execution and Procurement Team Provide oversight of the contractors/vendors supporting the project
Procurement Team	<ul style="list-style-type: none"> Manage the procurement of goods and services needed to support the Execution Team Provide regular status updates on all procurements Escalate issues, risks, and/or concerns as needed
Execution Team	<ul style="list-style-type: none"> Manage the project scope, budget, and schedule Engage regularly with controls team to provide timely and accurate update on execution Manage contractors/vendors supporting the project
Controls Team	<ul style="list-style-type: none"> Collect data and information related to the project scope, budget, and schedule Develop and maintain master project schedule Provide project information and progress to the Reporting Team
Reporting Team	<ul style="list-style-type: none"> Develop standard project status progress reports Manage stakeholder needs and request for communications
PREB/FOMB Interface Team	<ul style="list-style-type: none"> Identify stakeholder engagement and communication needs Communicate with Management and Executive Team on stakeholder requests Review all communications issued to the stakeholder group
FEMA Interface Team	<ul style="list-style-type: none"> Identify stakeholder engagement and communication needs Communicate with Management and Executive Team on stakeholder requests Review all communications issued to the stakeholder group





Item	Action Plan - Unit 5 Put Back on to Service	Resources	Baseline Budget	Notes
1	Exterior Inspection Boilers Units 5 and 6	GE/Fieldcore (GEF)	\$ 83,170.00	
2	Preliminary Structural Inspection Work Units 3, 4, 5 and 6 (Boilers and Auxiliary Equipment)	GEF/Island Structures Engineering	\$ 39,100.00	
2	Preliminary Structural Inspection Work Units 3, 4, 5 and 6 (More Detail Inspection, Structural Design Work for Repairs Units 5 and 6 (Before Put On Service). Also, Structural Assessment Structures Units 1 and 2)	GEF/Island Structures Engineering	\$ 298,635.10	
2	Preliminary Structural Inspection Work Units 3, 4, 5 and 6 (Condition Survey and Testing for Concrete Pedestals for Power Turbine and Generator Units, 5 and 6)	Heisen Global Engineering (HGE)	\$ 55,160.00	
3	Initial Assessment High Energy Piping Post Seismic Event Units 5 and 6	GEF/Island Structures Engineering	\$ 22,540.00	
4	Lead Removal for Immediate Repair Works for Safety and Continuing Inspection Work Units 3, 4 and 5	Central Industrial	\$ 86,940.69	
5	Immediate Repair Works For Safety and Continuing Inspection Work Units 3, 4 and 5	Energys		
6	Water and Fuel Tank Condition Survey (20 Tanks)	Heisen Global Engineering (HGE)	\$ 134,448.00	
7	Interior Inspection Work Boilers Units 5 and 6	GE/Fieldcore (GEF)	\$ 66,030.00	
9	Inspection and Condition Survey Water Tunnel Condensers 5 and 6	Marine Diving, Inc.	\$ 83,100.00	
10	Geotechnical Post Seismic Event Condition Survey	Earth Engineers, PSC	\$ 349,046.77	
11	Project Management and Inspection Team for Repairs Unit 5 and Other Works	PREPA's Contractor	\$ 1,020,000.00	
12	Phase 2, 3 and 4 Units 1-6 - Lead Removal Licensing and Work	Synergy	\$ 1,111,843.00	
13	Phase 2 - Structural Steel Repair Works Unit 5	GE/Fieldcore	\$ 4,000,000.00	
14	Phase 3 and 4 - Structural Steel Repair Required Works and for Code Compliance and Safety Unit 5 after Unit on Service	GE/Fieldcore		
15	Phase 2 Unit 1 -2 For Safety Concerns Unit 5 online	GE/Fieldcore		
16	Phase 2 and 3 (Safety Concerns) - For Units 3 and 4 Unit 5 online	GE/Fieldcore		
17	Phase 2, 3 and 4 - For Unit 6 Structural Repair Works	GE/Fieldcore		
18	Interior Boiler Unit 5 Repair Works	GE/Fieldcore	\$ 500,000.00	
19	Environmental Works on Unit 5 (Boiler Wash and Other...)	INDUCHEM SERVICES	\$ 1,000,000.00	
20	Temporary Condensate Water Tanks Repairs and New Water Piping with Supports and Commissioning (Design Work - Structural Repairs Condensate Tank 5 & Old Water Condensate Tanks)	HGE,PSC	\$ 250,000.00	
20	Temporary Condensate Water Tanks Repairs and New Water Piping with Supports and Commissioning (Structural Repairs Condensate Tank 5)	PREPA's Contractor	\$ 500,000.00	
20	Temporary Condensate Water Tanks Repairs and New Water Piping with Supports and Commissioning (Temporary Connection to Old Condensate Water Tanks)	Energys	\$ 220,800.00	
21	New Raw Water Tank 1 (Design and Build)	PREPA's Contractor	\$ -	Cost associated with new raw water tank was removed from budget baseline. Repairs conducted under workstream #20 should be sufficient to bring Unit 5 back in service. Approximate cost removed from baseline \$6.0M
22	New Condensate Water Tanks Design and Build & Construction	PREPA's Contractor and PREPA's Personnel	\$ -	Cost associated with new raw water tank was removed from budget baseline. Repairs conducted under workstream #20 should be sufficient to bring Unit 5 back in service. Approximate cost removed from baseline \$3.7M
24	Demineralized Water Treatment Plant Works (Demi Aero, Demi Resina)	PREPA's Contractor and PREPA's Personnel	\$ 840,000.00	
25	Structural Repair Works On Overhead Crane 5 and 6	Energys	\$ 78,492.46	
26	Civil and Interior Works at Unit 5 and 6 Control Room	PREPA's Contractor	\$ 328,215.00	
27	Compressor Room Demolition and Reconstruction	PREPA's Contractor		
28	Engineering Room Demolition and Reconstruction	PREPA's Contractor		
29	Civil Repair Work Shift Engineer Room	PREPA's Contractor		
30	Crossover Link Desuperheater R&L Installation Work	PREPA's Contractor	\$ 1,800,000.00	
31	Mechanical Inspection, Repair & Alignment (Condenser Pumps)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Water Heaters)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Deaerator and Deaerator Pumps)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Vacuum Pumps)	PREPA's Personnel		



Item	Action Plan - Unit 5 Put Back on to Service	Resources	Baseline Budget	Notes
31	Mechanical Inspection, Repair & Alignment (Boiler Feed Water Pumps)	PREPA's Personnel	\$ 120,000.00	
31	Mechanical Inspection, Repair & Alignment (Boiler Circulating Water Pumps)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Cooling Tower Repairs)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Steam Coil Repairs)	PREPA's Personnel		
31	Mechanical Inspection, Repair & Alignment (Gas Recirculating Fan Repairs)	PREPA's Personnel		
32	Non-Destructive Tests On Steam Piping Unit 5	PREPA's Contractor	\$ 250,000.00	
33	Repair Works on Valves (de Línea) Unit 5	PREPA's Contractor	\$ 49,230.00	
34	Repair Work on Safety Valves Unit 5	PREPA's Contractor	\$ -	Valves were repaired prior to earthquake events, removed estimated cost from baseline
36	Overhead Crane for Units 3-6 (This crane shall be used for maintenance work on Units 5 and 6) - Installation and Commissioning Only	Master Link	\$ 1,553,502.00	Represents only the installation and commissioning of the crane
36	Overhead Crane Certification 50-15	Master Link	\$ 3,441.20	This budget item only represents the balance of what is left to achieve certification
37	Insulation Repair Works on Boilers Unit 5	PREPA's Contractor	\$ 700,000.00	
38	Mechanical Repair Works on Condensers Unit 5	PREPA's Contractor	\$ 180,000.00	
39	Condenser Circulator Discharge Pipe Coating	PREPA's Contractor	\$ 900,000.00	
41	Cargo Elevators Units 5 and 6 Repair Works	PREPA's Contractor	\$ 60,000.00	
42	Inspection on High Energy Supports (Pipe Hangers)	PREPA's Contractor	\$ 250,000.00	
43	Emergency Generators	PREPA's Contractor and PREPA's Personnel	\$ 1,812,000.00	
43	Measuring Station, Automation, TWI, and Opacimeters 5-6	EDT Automation		
43	Heater Repairs	PREPA's Contractor and PREPA's Personnel		
43	Safety Valves	PREPA's Contractor and PREPA's Personnel		
43	Oil Flush Turbine U. 5	PREPA's Contractor and PREPA's Personnel		
43	Forced Fans Actuators Installation	PREPA's Contractor and PREPA's Personnel		
43	Induced Fans Actuators Installation	PREPA's Contractor and PREPA's Personnel		
44	DCS Foxboro (Boilers)	PREPA's Contractor	\$ 60,000.00	
45	Mark VI - Turbines	PREPA's Contractor	\$ 60,000.00	
46	Trip Tests Boilers and Turbine	PREPA's Personnel	\$ 6,000.00	
47	Repairs on Structural Support Natural Gas Line Pipe	PREPA's Contractor	\$ 1,000,000.00	
49	Reestablishment of Potable Water System	PREPA's Personnel	\$ 12,000.00	
50	Reestablishment of Compressed Gases, Sulfuric Acid, CO2 and Caustic Soda Systems	PREPA's Personnel	\$ 12,000.00	
51	Blow Off Pumps - Tests	PREPA's Contractor	\$ 6,000.00	
52	Hydrostatic Test Boiler Unit 5	PREPA's Personnel	\$ 6,000.00	
53	Temporary Laboratory Preparation and Commissioning (12'x40') Trailer for 1 year, Including power, Communications, and Water Connection. Installation of a Exhaust Hood for Tests	PREPA's Personnel	\$ 70,000.00	Estimate is for approximately 12 months of service
54	Temporary office for Shift Engineer or Plant's Management personnel (12'x 40') Trailer for 1 year, Including power, Communications, and Water Connection	PREPA's Contractor and PREPA's Personnel	\$ 147,650.00	
55	New Laboratory and Administration Building	PREPA's Contractor	\$ 2,400,000.00	
56	Units 5 Start Up and Commissioning Test and Commissioning Boilers and Turbo-Generator	PREPA's Contractor	\$ 72,000.00	
48	Inspection and Tests MPT Unit 5 and Repair of Dikes	PREPA's Contractor and PREPA's Personnel	\$ 85,812.00	
57	MPT 4 Secondary Containment repairs	PREPA's Contractor		



Item	Action Plan - Unit 5 Put Back on to Service	Resources	Baseline Budget	Notes
58	MPT 6 Secondary Containment repairs	PREPA's Contractor		
59	Mitigation of contaminated terrain switchyard 115kV, Autotransformer	PREPA's Contractor	\$ 20,000.00	
60	Structural Concrete Repairs Discharge Channel	PREPA's Contractor	\$ 1,750,950.00	
-	Asbestos Removal & Disposal Works Unit 5	PREPA's Contractor	\$ 199,000.00	
-	Turbine Inspection and Repairs	PREPA's Contractor and PREPA's Personnel		Working on finalizing budget estimate for this workstream
-	Generator Inspection and Repairs	PREPA's Contractor and PREPA's Personnel		Working on finalizing budget estimate for this workstream
-	Scaffolding Services	Brand	\$ 495,000.00	
-	January 8,2020 - Safety Inspection	Abacus Architecture, PSC	\$ 3,031.00	
-	Safety for entrance Security Report	Island Structures Engineering PC	\$ -	
-	Supply engineering, supervision, labor, equipment and materials to repair some areas of the Central.	All Contractors & Services Corp.	\$ 33,155.00	
Totals			\$ 25,184,292.22	