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

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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

SUBJECT: Motion to Inform Approval of Palo Seco, San Juan, Costa Sur and Aguirre Power Plant Permanent Repairs and Request for Confidential Treatment

MOTION TO INFORM APPROVAL OF PALO SECO, SAN JUAN, COSTA SUR AND AGUIRRE POWER PLANT PERMANENT REPAIRS AND REQUEST FOR CONFIDENTIAL TREATMENT

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

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

I. APPROVAL OF PALO SECO POWER PLANT PERMANENT REPAIRS

1. On November 15, 2021, PREPA submitted to the Energy Bureau of the Public Service Regulatory Board of Puerto Rico ("Energy Bureau") a document titled *Motion to Submit Fourth Group of Generation Projects* ("November 15 Motion"). With the November 15 Motion, PREPA submitted one hundred and four (104) work descriptions of repair works projects of its generation assets to be presented to the Federal Emergency Management Administration (FEMA) for reimbursement under several FEMA programs ("Section 428 Public Assistance"). Among these restoration projects was the permanent repair of the Palo Seco Power Plant (" Palo Seco Permanent Repairs").

2. On January 4, 2022, after some procedural events, the Energy Bureau entered a *Resolution and Order* ("January 4 Order") by which, among other determinations, it conditionally approved some Palo Seco Permanent Repairs, directed PREPA to submit SOWs for each project and also

determined to defer some generation projects.

3. On January 13, 2022, PREPA filed a motion titled *Partial Compliance with the January 4 Order and Request for Extension of Time,* through which PREPA submitted 24 initial SOWs and requested an extension of time to complete the outstanding submittals on a rolling basis until February 14, 2022 ("January 13 Motion").¹

4. On January 25, 2022, PREPA filed its Motion to Submit Additional Generation Project SOWs, including SOWs 4073 and 4075 for the Palo Seco Permanent Repairs for projects titled PS 4 Refractory, Insulation, scaffolding and Painting Procurement Turning Gear System, Units 3 and 4 respectively ("January 25 Motion").

5. Continuing the submittals of generation projects on a rolling basis on February 2, 2022, PREPA submitted the *Third Motion to Submit Additional Generation Project SOWs* ("February 2 Motion"). In the February 2 Motion, PREPA submitted SOW 4081 Palo Seco Permanent Repairs project titled *Unit 4, Superheater Header Num. 5 Material and Installation*.

6. On February 8, 2022, PREPA submitted to the Energy Bureau a document titled *Fourth Motion to Submit Additional Generation Projects SOWs* ("February 8 Motion"). With the February 8 Motion, PREPA submitted ten (10) statements of work (SOW) to be presented for the approval of the FEMA. Among these SOWs was SOW 4070, titled *PS 3 Low Pressure Turbine Rotor Refurbished, Unit 3.*

7. In response, on February 28, 2022, the Energy Bureau entered a *Resolution and Order* approving the Palo Seco project submitted with the February 2 Motion ("February 28 Order"). Also, on April 13, 2022, the Energy Bureau entered a *Resolution and Order* approving the Palo Seco project submitted with the February 8 Motion ("April 13 Order"). On June 4 2022 the Energy

¹ On January 21, 2022 the Energy Bureau issued a *Resolution and Order* granting PREPA's request for extension.

Bureau entered a *Resolution and Order* approving the Palo Seco projects which had been deferred as submitted with the January 25 Motion ("June 4 Order"). Finally, on July 21, 2022, the Energy Bureau entered a *Resolution and Order* approving the Palo Seco project that has been previously denied in the February 10 Order ("July 21 Order")

8. The February 28, April 13, June 4 and July 21 orders respectively provide that PREPA must submit to the Energy Bureau copy of the approval by the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency and FEMA of the Palo Seco Project, which shall contain the costs obligated, within ten (10) days of receipt of such approval and provide the Energy Bureau the actually contracted costs to construct the projects. *See*, February 28 Order at p.6, Sec. IV, April 13 Order at p.9 Sec. VII, June 4 Order at p 7. Sec III. and July 21 Order at p.7 Sec IV.

9. In compliance with the February 28, April 13, June 4 and July 21 orders, PREPA herein informs that FEMA approved the Palo Seco Permanent Repairs, and it has been assigned PW 10606. *See* Attachment A ("PW 10606 Project Report"). This PW was amended to include the SOWs 4069; 4070; 4073; 4075; 4081 as approved by the Energy Bureau.

II. APPROVAL OF SAN JUAN POWER PLANT PERMANENT REPAIRS

10. On the November 15 Motion, among the projects submitted by PREPA was the permanent repair of the San Juan Power Plant ("San Juan Permanent Repairs"). Among the SOWs submitted was SOW 1012 titled *Structural Repairs Fuel Service Tank 10*. Through the January 4 Order, the Energy Bureau classified SOW 1012 as a deferred proposed generation project.

11. Then on June 4, 2022, the Energy Bureau entered a *Resolution and Order* approving some of the projects classified as deferred generation projects including SOW 1012 ("June 4 Order").

12. The June 4 Order provides that PREPA must submit to the Energy Bureau copy of the approval by the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency and

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FEMA of the San Juan Project, which shall contain the costs obligated, within ten (10) days of receipt of such approval and provide the Energy Bureau the actually contracted costs to construct the projects. *See*, June 4 Order at p 7. Sec III.

13. In compliance with the June 4 Order, PREPA herein informs that FEMA approved the San Juan Permanent Repairs, and it has been assigned PW 10608. *See* Attachment B ("PW 10608 Project Report"). This PW was amended to include the SOW 1012 as approved by the Energy Bureau.

III. APPROVAL OF COSTA SUR POWER PLANT PERMANENT REPAIRS

14. On January 13, 2022, PREPA filed a motion titled *Partial Compliance with the January 4 Order and Request for Extension of Time*, through which, among other things, PREPA submitted 24 initial SOWs ("January 13 Motion"). Among these SOWs was SOW 3050, titled *Procurement of Air-Preheaters Baskets, Unit 5;* SOW 3052 titled *CCWP and BCWP Spare Motors for Units 5 and 6;* SOW 3055 titled *Replacement of Unit 5 Electric Load Center*; and SOW 3063 titled *BFWP Inner Barrel Bundle* for the Costa Sur Power Plant Permanent Repairs ("Costa Sur Permanent Repairs").

15. On January 25, 2022, PREPA filed a motion titled *Motion to Submit Additional Generation Projects SOWs*, through which PREPA submitted additional SOWs ("January 25 Motion"). Among these SOWs was SOW3065 titled *Unit 6 LP-B Repair & Installation Work (Failure)* and SOW 3056 titled *Replacement of Excitation System Units 5 and 6* as part of the Costa Sur Permanent Repairs.

16. On January 28, 2022, PREPA filed a motion titled *Second Motion to Submit Additional Generation Projects SOWs*, through which PREPA submitted additional SOWs ("January 28 Motion"). Among these SOWs were the following: SOW 3046 titled *Traveling Screens*

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Replacement; SOW 3047 titled Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6; SOW 3048 titled Low Pressure Water Heater 3 Repair Work; SOW 3059 titled Unit 5 Boiler Replace and Repairs & Auxiliary Equipment Repairs; and SOW 3060 titled Water Heater 6 Replacement Work as part of the Costa Sur Permanent Repairs.

17. On February 2, 2022, PREPA filed a motion titled *Third Motion to Submit Additional Generation Projects SOWs*, through which PREPA submitted additional SOWs ("February 2 Motion"). Among these SOWs were the following: SOW 3049 titled *Procurement of Water Heater 5 (Deaerator) Spare Pump*; SOW 3053 titled *Procurement of (IDF) and (FDF) Spare Motors for Units 5 and 6*; SOW 3054 titled *Procurement of Condensate Pump (CP) Motor for Units 5 and 6*; SOW 3057 titled *Replacement of 4160 V Electric Cable Normal Transformer 5A, 5B*; SOW 3067 titled *Fuel Igniters Replacement Work*; and SOW 3066 titled *AGC - Replacement Project* as part of the Costa Sur Permanent Repairs.

18. On February 8, 2022, PREPA filed a motion titled *Fourth Motion to Submit Additional Generation Projects SOWs*, through which PREPA submitted additional SOWs ("February 8 Motion"). Among these SOWs were the following: SOW 3051 titled *Replacement of Air-Preheaters Baskets, Unit 5 - Included on project 3050*; SOW 3058 titled *CS 5 Major Inspection Unit 5 - HP/IP/LP Turbine Rotor Replacement* and SOW 3062 titled *Unit 6 - HP/IP/LP Inspection (Failure) - To be combined w/ 3058* as part of the Costa Sur Permanent Repairs.

19. In response to the above submissions, on February 10, 2022, the Energy Bureau entered a *Resolution and Order* approving the Costa Sur project submitted with the January 13 Motion ("February 10 Order"). On February 18, 2022, the Energy Bureau entered a *Resolution and Order* approving the Costa Sur project submitted with the January 25 Motion ("February 18 Order"). On February 28, 2022, the Energy Bureau entered a *Resolution and Order* approving the Costa Sur project submitted with the January 25 Motion ("February 18 Order"). On

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project submitted with the February 2 Motion ("February 28 Order"). On March 9, 2022, the Energy Bureau entered a *Resolution and Order* approving the Costa Sur project submitted with the January 28 Motion ("March 9 Order"). On April 13, 2022, the Energy Bureau entered a *Resolution and Order* approving the Costa Sur project submitted with the February 8 Motion ("April 13 Order").

20. The February 10, February 18, February 28, March 9 and April 13, orders provide that PREPA must submit to the Energy Bureau copy of the approval by the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency and FEMA of the Costa Sur Project, which shall contain the costs obligated, within ten (10) days of receipt of such approval and provide the Energy Bureau the actually contracted costs to construct the projects. *See*, February 10 Order p 3 Sec. III; February 18 Order p. 5 Sec. IV; February 28 Order at p.6, Sec. IV; March 9 Order at p. 6 Sec. IV; and April 13 Order at p.9 Sec. VII.

21. In compliance with the February 10, February 18, February 28, March 9 and April 13, orders PREPA herein informs that FEMA approved the Costa Sur Permanent Repairs, and it has been assigned PW 10702. *See* Attachment C ("PW 10702 Project Report").

IV. APPROVAL OF AGUIRRE POWER PLANT PERMANENT REPAIRS

22. On the November 15 Motion, among the projects submitted by PREPA was the permanent repair of the Aguirre Power Plant ("Aguirre Permanent Repairs"). Among the SOWs submitted was SOW 2029 titled *South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works*. Through the January 4 Order, the Energy Bureau classified SOW 2029 as a deferred proposed generation project since work was intended for the units in the Integrated Resource Plan (IRP) Retirement Plan.

23. On January 28 2022 PREPA submitted a document titled Second Motion to Submit

Additional Generation Projects SOWs before the Energy Bureau ("January 28 Motion"). In the January 28 Motion PREPA included the 2029 SOW for the Aguirre Power Plant.

24. As a result of the above, on March 9, 2022, the Energy Bureau entered a *Resolution and Order* through which it determined not to approve SOW 2029 ("March 9 Order").

25. Then on June 4, 2022, the Energy Bureau entered a *Resolution and Order* approving some of the projects classified as deferred generation projects including SOW 2029 ("June 4 Order").

26. The June 4 Order provides that PREPA must submit to the Energy Bureau copy of the approval by the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency and FEMA of the San Juan Project, which shall contain the costs obligated, within ten (10) days of receipt of such approval and provide the Energy Bureau the actually contracted costs to construct the projects. *See*, June 4 Order at p 7. Sec III.

27. In compliance with the June 4 Order PREPA herein informs that FEMA approved the San Juan Permanent Repairs, and it has been assigned PW 10568. *See* Attachment D ("PW 10568 Project Report"). This PW was amended to include the SOW 2029 as approved by the Energy Bureau.

V. REQUEST FOR CONFIDENTIAL DESIGNATION AND TREATMENT

28. The PWs 10606, 10608, 10702, and 10568, Project Reports presented herein contain global positioning system ("GPS") coordinates of PREPA's power plants, which is critical energy infrastructure information ("CEII") that cannot be disclosed to the public. To protect such confidentiality, PREPA has redacted the GPS information from the PWs herein submitted (Attachments A, B, C and D) and requests the Energy Bureau to determine that the GPS information is CEII and thus, confidential and to maintain the public files with the redaction already provided and the unredacted version under seal.

29. The following is a detailed list of the information that PREPA asserts is confidential and must be kept under seal:

DOCUMENT	CONFIDENTIAL INFORMATION	LEGAL BASIS
PW 10606		
	GPS Location Page 1	CEII
	GPS Location Page 2	CEII
	GPS Location Page 3	CEII
	GPS Location Page 4	CEII
	GPS Location Page 7	CEII
	GPS Location Page 9	CEII
	GPS Location Page 10	CEII
	GPS Location Page 11	CEII
	GPS Location Page 13	CEII
	GPS Location Page 17	CEII
	GPS Location Page 18	
	GPS Location Page 24	CEII
	GPS Location Page 25	CEII
	GPS Location Page 26	CEII
	GPS Location Page 27	CEII
	GPS Location Page 28	CEII
PW 10608		

DOCUMENT	DOCUMENT CONFIDENTIAL INFORMATION	
	GPS Location Page 1	CEII
	GPS Location Page 2	
	GPS Location Page 5	
	GPS Location Page 11	CEII
	GPS Location Page 12	CEII
PW10702		
	GPS Location Page 1	CEII
	GPS Location Page 2	CEII
	GPS Location Page 3	CEII
	GPS Location Page 4	CEII
	GPS Location Page 5	CEII
	GPS Location Page 6	CEII
	GPS Location Page 7	CEII
	GPS Location Page 8	CEII
	GPS Location Page 9	CEII
	GPS Location Page 15	CEII
	GPS Location Page 16	CEII
	GPS Location Page 17	CEII
	GPS Location Page 19	CEII
	GPS Location Page 21	CEII

DOCUMENT	DOCUMENT CONFIDENTIAL INFORMATION	
	GPS Location Page 22	CEII
	GPS Location Page 24	CEII
	GPS Location Page 25	CEII
	GPS Location Page 27	CEII
	GPS Location Page 28	CEII
	GPS Location Page 30	CEII
	GPS Location Page 31	CEII
	GPS Location Page 32	CEII
	GPS Location Page 34	CEII
	GPS Location Page 37	CEII
	GPS Location Page 38	CEII
	GPS Location Page 39	CEII
	GPS Location Page 41	CEII
	GPS Location Page 48	CEII
	GPS Location Page 49	CEII
	GPS Location Page 50	CEII
	GPS Location Page 51	CEII
	GPS Location Page 52	CEII
	GPS Location Page 53	CEII
	GPS Location Page 54	CEII

DOCUMENT	CONFIDENTIAL INFORMATION	LEGAL BASIS
	GPS Location Page 55	CEII
	GPS Location Page 56	
	GPS Location Page 57	CEII
	GPS Location Page 58	CEII
	GPS Location Page 59	CEII
PW 10568		
	GPS Location Page 1	CEII
	GPS Location Page 2	CEII
	GPS Location Page 3	CEII
	GPS Location Page 21	CEII
	GPS Location Page 22	CEII
	GPS Location Page 23	CEII

30. Article 6.15 of the *Puerto Rico Energy Transformation and RELIEF Act*, Act no. 57 of 2014, as amended ("Act 57")², provides that "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 [Bureau] to treat such information as such[.]" *Id.* at Sec. 6.15. "If the Energy [Bureau], after the appropriate evaluation, believes such 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

² Puerto Rico Energy Transformation and RELIEF Act, Act no. 57 of May 27, 2014, 22 L.P.R.A. §§ 1051-1056.

document is submitted." *Id.* at Sec. 6.15(a). If the Energy Bureau determines that the information is confidential, "the information shall be duly safeguarded and delivered exclusively to the personnel of the Energy [Bureau] who needs to know such information under nondisclosure agreements." *Id.* at Sec. 6.15(b). "The Energy [Bureau] shall swiftly act on any privilege and confidentiality claim made by a person subject to its jurisdiction by means of a resolution to such purposes before any allegedly confidential information is disclosed." *Id.* at Sec. 6.15(c).

31. Under its vested powers, the Energy Bureau approved the *Regulation on Adjudicative*, *Notices of Compliance, Rate Review, and Investigations Proceedings* ("Regulation 8543").³ Regarding the safeguards that the Energy Bureau gives to confidential information, Regulation 8543 provides that:

[i]f in compliance with the provisions of [Regulation 8543] or any of the Energy Bureau's orders, a person has the duty to disclose to the Energy Bureau information 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 the material merits protection, proceed according to what is set forth in Article 6.15 of Act No. 57-2014, as amended.

Regulation 8543 at Sec. 1.15.

32. Federal and Puerto Rico laws protect the confidentiality of CEII, the public disclosure of which may pose a security threat in that the information could be useful to a person or group planning an attack on critical infrastructure. *See, e.g.,* 18 C.F.R. § 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*, § 1016, creating the *Critical Infrastructures Protection Act of 2001*, including 42 U.S.C. § 5195c(e) (defining Critical

³ Energy Bureau, *Regulation on Adjudicative, Notices of Compliance, Rate Review and Investigations Proceedings*, No. 8543 (December 16, 2015).

Infrastructure). FERC regulations subject such information to limitations on use and disclosure to "ensure that information deemed CEII stays out of the possession of terrorists." 18 C.F.R. § 388.113(d)(4). *Off. of People's Counsel v. Pub. Serv. Comm'n.*, 21 A.3d 985, 991, Util. L. Rep. P 27157, 2011 WL 2473405 (D.C. App. 2011).

33. Under the Critical Infrastructures Protection Act of 2001, the term "critical infrastructure" means "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 U.S.C. § 5195c(e). In 2006, FERC Order no. 683 amended the regulations for gaining access to CEII and simplified procedures for obtaining access to CEII without increasing the vulnerability of the energy infrastructure and ensuring that access to CEII does not facilitate acts of terrorism.

34. A utility is not required to obtain FERC or other federal government approval to designate information as CEII. For example, information required by FERC's Annual Transmission Planning and Evaluation Report, Form No. 715 ("FERC No. 715") is *de facto* considered CEII and is automatically afforded heightened protections. FERC No. 715 requires that any transmitting utility that operates integrated (non-radial) transmission facilities at or above 100 kV must annually submit information including but not limited to: Power Flow Base Cases, Transmitting Utility Maps and Diagrams, Transmission Planning Reliability Criteria, Transmission Planning Assessment Practices, and Evaluation of Transmission System Performance. Any utility that submits the required transmission information under FERC No. 715 does so with the knowledge that, as stated in the Form's Instructions, FERC "considers the information collected by this report to be CEII and will treat it as such." *See also* 18 C.F.R. § 141.300(d) relating to the Form and CEII.

35. Mainland regulators typically do not require a utility that designates material as CEII to follow any process before the federal government to make or support such a designation, and, further, that the regulator, in its informed discretion, can establish limits on how information that it considers CEII can be accessed.

36. Furthermore, regarding the foregoing argument, FERC has ruled on several occasions that GPS coordinates of any project feature "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 (ruling that FERC considered the global positioning system coordinates of any project features (precise surveyed or GPS coordinates at or above two decimal points of accuracy of equipment and structures) gas information to qualify as CEII because it provides more than just location).⁴

37. The request above for relief has been granted in other matters and dockets. PREPA has had to produce information that included CEII, specifically GPS, for requests made under the captioned case. For example, PREPA submitted January 13 Motion, which included several SOWs, which, in turn, included GPS information that PREPA redacted from the public filing and asserted that should remain under seal and declared confidential because, under federal and local law, it qualified as CEII. After evaluating PREPA's arguments, on January 21, 2022, the Energy Bureau granted confidential designation and treatment to the GPS information redacted from the public versions of the filing. January 21 Order at pp. 3-5, Sec. III.

38. It is respectfully submitted that the redacted GPS information qualifies as CEII and thus, should remain redacted. Furthermore, it is asserted that the redactions made are the manner that least affects the public interest, transparency, and the rights of the parties involved in this

⁴ Federal Register: March 3, 2003 (Volume 68, Number 41); Rules and Regulations, pp. 9857-9873.

administrative procedure. *See*, Act 57-2014 at Sec. 6.15(a). Accordingly, and pursuant to the above, it is respectfully requested that the Honorable Energy Bureau find that the information identified by PREPA as CEII is confidential and that the Secretary of the Energy Bureau be directed to keep the confidential CEII under seal.

VI. CONCLUSION

WHEREFORE, PREPA respectfully requests the Honorable Energy Bureau to note the approval of the Palo Seco, San Juan and Costa Sur and Aguirre Permanent Repairs and PWs 10606, 10608, 10702, and 10568 Project Reports; to determine that the GPS information redacted from PWs 10606, 10608, 10702, and 10568 Project Reports (Attachments A, B, C and D) is CEII and thus, confidential information; and to enter an order directing the Secretary of the Energy Bureau to maintain the unredacted version of Attachment A, B, C and D under seal.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 5th day of October 2022.

Katiuska Bolaños-Lugo kbolanos@diazvaz.law TSPR 18,888

/s Joannely Marrero Cruz Joannely Marrero Cruz jmarrero@diazvaz.law TSPR 20,014

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CERTIFICATE OF SERVICE

It is hereby certified that, on this same date, I have filed the above motion with the Office of the Clerk of the Energy Bureau using its Electronic Filing System at https://radicacion.energia.pr.gov/login, and a courtesy copy of the filling was sent to LUMA through its legal representatives at margarita.mercado@us.dlapiper.com and laura.rozas@us.dlapiper.com.

In San Juan, Puerto Rico, this 5th day of October 2022.

Attachment A

(Unredacted version submitted underseal)

General Info

Project #	662957 P/W# 10606	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-
Project Title	FAASt [Palo Seco Power Plant –001 Units 3 & 41 (Generation)	Event	4339DR-PR (4339DR)
Project Size	Large	Declaration Date	9/20/2017
Activity	9/20/2027	Incident Start Date	9/17/2017
Completion Date		Incident End Date	11/15/2017
Process Step	Pending DIU EMMIE Final Record Upload		

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

Damage #1226451; FAASt Upgrade to Mark VI, Palo Seco Power Plant – Units 3 & 4

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Upgrade to Mark VI, Palo Seco Power Plant Units 3 & 4
- Facility Description: Palo Seco Power Plant needs to upgrade its actual Distributed Control System (DCS) "Mark VI", installed in units 3 and 4, since it has more than ten (10) years. The system controls all the operations of the steam turbine and generator. The network switch upgrade will modernize the existing network utilizing current technology, improving network performance, enhancing cyber security features, and allowing a longer product life cycle.
- Approx. Year Built: 1980
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria.

Damage #1226454; FAASt [Boiler, Generator & Turbine Repairs, Palo Seco Steam Plant – unit 3]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Boiler, Generator & Turbine Repairs, Palo Seco Steam Plant unit 3
- Facility Description: Due to a major outage, Palo Seco Steam Plant needs to perform repairs and/or replacements to the boiler parts, generator and turbine of unit 3.



- Approx. Year Built: 1980
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria.

Damage #1238088; FAASt [Unit 4, Superheater Header Num. 5 Material and Installation – Palo Seco]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Unit 4, Superheater Header Num. 5 Material and Installation
- Facility Description: Vendor proposes to furnish PREPA the material outlined to provide the SH-5 Header replacement for Palo Seco Unit #4.
- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1238149; FAASt [Palo Seco Steam Plant - Procurement Turning Gear System, Units 3 and 4]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Procurement Turning Gear System, Units 3 and 4
- Facility Description: Procurement of the Turning Gear System, Units 3 and 4 (purchase) is necessary for the power plant to replace existing turning gear system of any of the units 3 and 4, in case of a malfunction. This system is essential to maintain the turbo-generator rotor in slow rotation motion to avoid possible structural deflections that may affect the return to service of the unit after a programmed forced outage repair is completed.
- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1238150; FAASt [Boiler's Refractory, Insulation, Scaffolding and Painting Palo Seco Steam Plant, U.4]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Boiler's Refractory, Insulation, Scaffolding and Painting Palo Seco Steam Plant, U.4
- Facility Description: Rehabilitation work is needed at Unit 4 Boiler of Palo Seco Steam Plant, due to environmental caused damages. Boiler rehabilitation includes refractory, insulation, scaffolding and painting.

- Approx. Year Built: 1980
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1238151; FAASt [Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant
- Facility Description: To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list. It is necessary to inspect, transport, maintain, and repair of the power turbine spare low-pressure rotor for the plant's unit 3
- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #661235; FAASt [Palo Seco Power Plant (Work Completed)]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Palo Seco Steam Plant
- Facility Description: The Palo Seco Steam Plant in Toa Baja sustained damages in the following areas, that were in need of immediate repair to bring the units back on-line as quickly as possible. All work has been completed and was included within the Fixed Cost Estimate (FCE) under the Generation inventory. Cooling Towers 3 & 4 (Damage 1): Cooling towers have to be replaced since they suffered significant damages, principally to its structural components in the mechanical equipment support area, meaning motors, transmissions, and fans among others. Boiler's cameras (Damage 2): Purchase of cameras to monitor opacity through boiler's chimneys. Cameras are an important tool in the boilers operation, to visually verify that the combustion controls are properly adjusted. Through the image, important decisions are made to make adjustments to the boiler's air and fuel parameters, that directly affect the gases emitted by the chimneys. In addition, help comply with Clean Air, and Air Pollution Regulations. Federal Alert System (Damage 3): Repairs to the Federal Alert System to maintain coverage in the determined areas and to fulfill the purpose of alerting the generation units personnel during emergencies. All Generation Units (Damage 6): Refractory work, paint, and insulation in all Generation Units and related structures, including scaffolding rent.
- Approx. Year Built: 1980
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1238152; FAASt [Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler
- Facility Description: The economizer in boiler 3 is original to the unit, which was put into commercial operation in 1970.
- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

FAASt Upgrade to Mark VI, Palo Seco Power Plant – Units 3 & 4I, Palo Seco

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Palo Seco Power Plant needs to upgrade its actual Distributed Control System (DCS) "Mark VI", installed in units 3 and 4, since it has more than ten (10) years. The system controls all the operations of the steam turbine and generator. The network switch upgrade will modernize the existing network utilizing current technology, improving network performance, enhancing cyber security features, and allowing a longer product life cycle.

Introduction

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Facilities

Name: Palo Seco Power Plant, units 3 and 4

GPS Location:

Project Scope of Work

The scope of work for the Upgrade to Mark VI of Palo Seco Power Plant units 3 and 4 will consist of the following:

1) Contractor shall supply and install new Human Machine Interphase (HMI), an upgrade to turbine/generator DCS control system that include software last edition.

2) Also, Upgrade shall include automatic synchronization of generator to grid.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies. Cost is based historical pricing.

Cost Type:

Engineering, Installation and Testing: \$500,000.00

Dl# 1226451 Work to be Completed (WTBC): \$500,000.00

Total Project Cost (All DI's): \$28,774,422.64

Project Notes:

- 1. This project is part of a FAAST project, please reference project 136271.
- 2. For Environmental & Historical Preservation (EHP) compliance, details, and supporting documentation please refer to pages 73-90 and 161-178 of the documents labeled respectively: FAAST SOW PALO SECO 001-Units 3 & 4 Projects.pdf and PALO SECO 001-Amendment Package.pdf
- 3. Please see below general information and a brief description of the SOW for each additional generation project in the same facility: Palo Seco Power Plant, as required by EHP:

Project#: [671481] FAASt [Palo Seco 002- Auxiliary Infrastructure Projects] (Generation)

DI#1226869 FAASt [Palo Seco Steam Plant Fuel Tanks Level Measurement System]

Supply, deliver, install and commission (turnkey) custody-transfer Rosemount Automatic Tank Gauging Equipment for seven (7) fuel storage tanks at the Palo Seco Steam Plant facility in Cataño, as follows:

- (4) Bunker C Reserve tanks (1 to be converted to Diesel)
- (3) Bunker C Service tanks
- (0) Diesel tanks (future phase)
- (7) tanks in total

A. ATG Equipment

- 1. Radar Level gauges (all tanks) 7 ea.
- 2. Still pipe 1 (Diesel tank)

- 3. Tank Hubs (all tanks) 7 ea.
- 4. Local displays 7 ea.
- 5. Temperature transmitters & multi-spot probe with water level sensor 7 ea
- 6. Smart Wireless THUM Adapter 7 ea.
- 7. Wireless Hart repeater with battery module 1 ea. (optional, if required)
- 8. Wireless Network Gateway 1 ea.
- 9. Taskmaster Software Package 20 tanks license
- 10. Workstation 1ea.
- 11. TankMaster.Net software Site License: 3-user license
- 12. Includes power wiring from control room UPS to ea. tank.

DI#1226874 FAASt [Rehabilitation and Repair of Water Retention Tank Num. 3- Palo Seco]

- The job includes providing engineering, design, labor, supervision, materials, equipment, inspection, and everything necessary to complete the rehabilitation and approval by AEE of the water tank #3. Rehabilitation will consist of welding and repairing the wall and the metallic floor of the tank with suitable means.
- Paint jobs should start with the interior of the tank once interior and exterior mechanical work is all completed.
- This includes primer application, painting / coating of walls and floor or sections of these, plumbing support, connections, and welding of affected tank due to repairs.
- Includes surface preparation and anticorrosive coating application to surface areas such as: covering, hallways, handrails, rails, platforms, hatchway, nozzle, wind girders, patches, scrapping, angular, supports, pipping support and all structural elements.

DI#1226875 FAASt [Palo Seco Steam Plant New Water Condensate 1-2 Tank

- The scope includes, but is not limited to, the demolition of the existing tank, design and build of a new tank.
- Top catwalk to access adjacent tank roof, level indication, level transmitter, grounding, tank identification, etc. Tank design shall be based on the latest revision of API-650 code. A complete internal and external coating system shall be applied. The internal system shall be based on a reinforced high build novellas epoxy lining. The external shall be based on a three-coat system consisting of: (1) a metallic zinc rich epoxy primer, (2) two component low VOC high build self-priming, surface tolerant, lamellar aluminum flakes reinforced, epoxy mastic and finished with (3) a two component, high solids, low VOC, abrasion resistance, high gloss epoxy siloxane.
- The work includes lead abatement procedures and disposition, installation of all the protection systems and replacement of any connection piping to tank.

DI#1226876 FAASt [Palo Seco Steam Plant - Upgrade OSI DCS]

-Contractor shall supply and install new Human Machine Interphase (HMI) for operation and upgrade the Gas Insulated Substation (GIS)/Switchgear DCS control system that will include software's last edition.

Project#: [334509] FAASt [Palo Seco Demin Water Tank 4] (Generation)

DI#661639 FAASt [Palo Seco Demin Water Tank 4]

a) Design and Build of a New Tank

b) Modification to the Demineralized (demi) Water Pipe Headers – a modification to the existing demi water pipe headers, equalization headers and the demi water pumps recirculation and Mega Gens Generators demi water return piping.

Project#: [180692] FAASt Mobile Generation Units Purchases (Transmission)

DI#454259 FAASt [Mobile Generation Units Purchases]

• As part of the work to permanently restore, required the use of mobile generating units to be used as temporary power sources to bypass the needs of certain transmission lines and/or generation power plants. This was required to maintain electrical service to customers while eligible work is performed on the transmission lines, generation plants, and other PREPA infrastructure.

Scope Notes:

1. For more information, please refer to pages 2-59 of the document labeled: FAAST SOW Palo Seco 001-Units 3 & 4 Projects.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1226454 FAASt Boiler, Generator & Turbine Repairs, Palo Seco Steam Plant – unit 3]

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Due to a major outage, Palo Seco Steam Plant needs to perform repairs and/or replacements to the boiler parts, generator and turbine of unit 3.

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Facility

Name: Palo Seco Steam Plant, unit 3

GPS Location:

Project Scope of Work

The scope of work for the Boiler, Generator & Turbine Repairs of Palo Seco Steam Plant unit 3 will consist of the following:

A. Boiler: Repairs of the Economizer elements and high pressure components such as water wall panel s and its necessary components.

B. Generator: Upgrade to the control system. Remove rotor from generator so that the stator coils can be inspected, and perform tests on both, the rotor and the stator. Inspection and repairs of the excitation system.

C. Turbine: Repairs of the internal elements of the high, intermediate and low pressure turbine, including its valves. This will be done by opening the turbine to inspect and repair the rotor, diaphragms, seals, bearings, and the throttle, governor, interceptor and reheat valves.

D. The unit's main output transformer (MPT) has several oil leaks. The job is to repair those leaks and replace any failed radiators that are contributing to those leaks.

Cost Estimate

Cost Type

Boiler repairs: \$3,000,000.00

Generator:\$3,000,000.00

Turbine repairs and MPT repairs: \$9,000,000.00

Total Cost: \$15,000,000.00

DI# 1226454 Work To Be Completed (WTBC): \$15,000,000.00

Scope Notes:

1. For more information, please refer to pages 60-72 of the document labeled: SOW Palo Seco 001-Units 3 & 4 Projects.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238088 FAASt [Unit 4, Superheater Header Num. 5 Material and Installation - Palo Seco]

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Vendor proposes to furnish PREPA the material outlined to provide the SH-5 Header replacement for Palo Seco Unit #4.

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Facility

Name: Palo Seco Steam Plant, Unit 4

GPS Location:

Project Scope of Work

The scope of work for Palo Seco Steam Plant Purchase and Installation of Superheater 5 Component of the Unit's 4 boiler will consist of the following:

- SH-5 Header:

One SH-5 Header made from grade 22 material. T22 terminal tubes will be safe ended with TP347H material to avoid the dissimilar metal weld in the field. The field weld will remove the existing field weld from the assembly replacement by 1" which would be 23" from the header centerline. The header lead will be provided loose to allow greater flexibility in field installation. Field weld for the header lead is designed at 55.5" from the header centerline.

- Installation:

1. Furnish labor as required to perform the equipment replacement.

- 2. Furnish supervision of the workforce
- 3. Furnish tools and equipment as needed to perform the work.
- 4. Furnish the equipment to perform the welds of components conform to ASME Section I.

Cost Estimate

Cost Type

Header Material Supply: \$728,000.00

Installation / Replacement: \$1,515,385.00

Total Cost: \$2,243,385.00

Dl# 1238088 Work To Be Completed (WTBC): \$2,243,385.00

Scope Notes:

1. For more information, please refer to pages 118-160 of the document labeled: PALO SECO 001-Amendment Package.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238149

FAASt [Palo Seco Steam Plant - Procurement Turning Gear Systems, Units 3 and 4] Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

This project, related to the Procurement of the Turning Gear System, Units 3 and 4 (purchase) is necessary for the power plant to replace existing turning gear system of any of the units 3 and 4, in case of a malfunction. This system is essential to maintain the turbo-generator rotor in slow rotation motion to avoid possible structural deflections that may affect the return to service of the unit after a programmed forced outage repair is completed.

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Facility

Name: Palo Seco Steam Plant

GPS Location:

Unit 3 - Turbine:

Unit 4 - Turbine:

Project Scope of Work

The scope of work for this project consists of the following:

-Purchase of a new rotor turning gear system for Units 3 or 4 of Palo Seco's Steam Plant that Siemens Energy Inc. will supply. Refer to details below:

Cost Estimate

Cost Type

Purchase of Turning Gear System

(Siemens Energy, Inc. - Style # PW680J296G03 -Mechanical Turning Gear Parts for Assembly): \$295,381.60

Total Cost: \$295,381.60

Scope Notes:

1. For more information, please refer to pages 86-117 of the document labeled: PALO SECO 001-Amendment Package.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238150

FAASt [Boiler's Refractory, Insulation, Scaffolding and Painting Palo Seco Steam Plant, U.4]

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Rehabilitation work is needed at Unit 4 Boiler of Palo Seco Steam Plant, due to environmental caused damages. Boiler rehabilitation includes refractory, insulation, scaffolding and painting.

This work will allow the unit to be reincorporated into service, and will provide greater reliability and stability to power generation in the northern area of the island.

Introduction

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Facility

Name: Palo Seco Steam Plant

GPS Location: Unit 4 -

Project Scope of Work

The scope of work for the Boiler's refractory, insulation, scaffolding and painting of unit 4 at the Palo Seco Steam Plant will consist of the following:

A. The Contractor shall inspect, install, rehabilitate and repair Refractory in:

· ducts, lobby, chimneys, and other boiler areas

- inspect chimney top rings and submit drawings with their measurements, if required
- · paint chimneys and related structures
- rehabilitate and repair air navigation lights on boilers
- B. The Contractor shall inspect, install, rehabilitate and repair Insulation in:
 - any required area

Cost Estimate

Cost Type

Inspection, Installation, Rehabilitation and Repair: \$700,000.00

Total Cost: \$700,000.00

Dl# 1238150 Work To Be Completed (WTBC): \$700,000.00

Scope Notes:

1. For more information, please refer to pages 47-85 of the document labeled: PALO SECO 001-Amendment Package.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238151 FAASt [Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant]

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

It is necessary to inspect, transport, maintain, and repair of the power turbine spare low-pressure rotor for the plant's unit 3.

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Facility

GPS Location: Unit 3 -

Project Scope of Work

The scope of work for the Low Pressure Turbine Rotor Refurbished of the Palo Seco Steam Plant's Unit 3 will consist of the following:

a) These specifications cover the work required under this Purchase Order for the refurbishment of Turbine Rotors, diaphragms and related components of the Palo Seco Steam Plant, Unit 3. Contractor is required to comply with several special conditions herewith detailed for the general and detailed work.

b) The Contractor shall supply the Technical Field Advisor Services, the site project management team and the craft labor necessary to performs disassembly and re-assembly of the turbine and the generator.

General Works (Inspection)

1) The following is the specified unit equipment:

HP-IP & LP Rotor Buckets, HP, IP, LP – Diaphragms, Nozzle Plate, Turbine Bearings, Oil Deflectors, Steam Packing Housing, Gland Cases and Dummy Rings, Top Hats, Inlet Sleeve and Steam inlet Bore.

- 2) The general works are the following:
 - a. Cleaning and sandblasting of the HP-IP and LP rotor blades and diaphragms, LP inlet flow guide, gland cases and dummy rings
 - 1. The rotors shall be blast cleaned using 220-mesh aluminum oxide and water blast to remove any residue of the blasting media.
 - 2. Surface cleaning with water shall be done using water dispersant or surfactant product approved by PREPA.
 - 3. Contractor shall protect "journals" while blasting.
 - b. Non-Destructive Test (NDT) to the specified unit equipment (as require) using magnetic particle, ultrasonic test, dye check or X-ray method, as necessary and approved by the Engineer.
 - c. Perform 100% equipment checks to determine corrections to be done to bring parts to factory tolerances.

1. The Contractor shall take a "runout" reading of all rotor stages and the seal area. Including the HP-IP rotor and the new LP rotor.

2. Dimensionally inspect HP-IP and LP journals, bearings, bearings bore, oil seal, inner cylinder and gland seal, Bore Bearings Turbine.

- 3. Measure coupling rabbet fit and face reading, bolts and coupling holes diameter.
- 4. Perform parallel check and measure thrust collar.
- 5. Open close correct HP-IP/LP coupling as required.
- 6. Clean and magnetic particle the thrust fit (collar and shaft). (If applicable).
- 7. Verify couplings rabbet, face readings, and correct where applicable as per OEM procedures.
- 8. Perform all necessary stage readings for the machining of the spill strips of the diaphragm.
- 9. Inspect Top Hats, Inlet sleeves and Bell seals.
- 10. Inspect Inlet Sleeve.
- 11. Inspect Steam inlet Bore.

- d. Measure and perform ultrasonic te?st to turbine and generator bearings.
- e. Submit a written report of conditions as found.

Detailed Scope of Work (Repair Scope)

1) Detailed Work for Unit

a. Diaphragms HP-IP and LP work to be performed per diaphragm shall follow the following repair classification. The inspection report and the final decision of the Engineer shall classify the diaphragm by their repair needs, minor, medium o mayor. Bidders will use the tables in Annex A to bid for the different classifications.

1. Minor Repair:

- Straighten trailing edges as necessary.
- Perform an area check and record.
- Remove high metal caused by FOD.
- Repair fabrication lines on horizontal joints.
- Polish each partition to improve surface finish.
- Replace spill strips.

2. Medium Repair:

- 1. Straighten trailing edges as necessary.
- 2. Perform an area check and record.
- 3. Remove high metal caused by FOD.
- 4. Repair impact damage by welding and blending to contour (From 0.500" to 0.625" of weld).
- 5. Polish each partition to improve surface finish.
- 6. Repair fabrication lines on horizontal joints.
- 7. Replace spill strips.

3. Major repair:

- 1. Perform an area check and record.
- 2. Make contour gage.
- 3. Cut back partitions to the desired amount.
- 4. Weld builds up the partitions and sidewalls. (From 0.625" to 0.750" of weld)
- 5. Grind and polish convex side to contour.
- 6. Grind the concave side.
- 7. Set area and record results.
- 8. Repair fabrication lines on horizontal joints.
- 9. Replace spill strips.
- 10. Repair bore and hook fit on packing holder.

b. Spill strips shall be supplied and installed by the Contractor.

c. HP-IP and LP Rotor Repairs

1. Remove and install bucket wheel including all necessary work.

2. Straighten and blend foreign object damage to bucket and vane sections. (To all wheels)

3. Replace all shroud bands of bucket wheels, hand prepare tenons. (By welding procedure or any other mean approved by the Engineer)

4. Replace all erosion shields stage (must be supplied by the Contractor).

5. Machine, if necessary, shaft journal to remove cracking, pitting, scoring etc. as required by the Engineer. (Up to 0.020 on diameter")

6. Machine packing land as necessary to remove cracking, erosion, scoring, etc. to restore land configuration as requested by the Engineer. (Up to 0.020" on diameter)

7. Clean and Polish each non new bucket wheel blade in order to improve surface finish.

8. Resealing of the HP-IP rotor cylinder. (If applicable)

9. Remove, install, and align the extension shaft.

10. Run Out check HP-IP and the new LP.

11. Reaming to size on both the Governor and Generator ends of the new LP rotor. Final dimensions shall be approved by the Engineer.

12. Low speed balance for HP-IP

d. Nozzle Plate Repair

1. Flatness checks of steam face.

2. Cut back all partitions, weld, hand finish and stress relieve.

- 3. Adjust austenitic ring blocks and align nozzle segment assembly.
- 4. Clean and Polish each partition in order to improve surface finish.
- 5. Machine to dimensions the new nozzle.
- 6. Machine the sealing face of the shell with the boring bar to obtain proper sealing contact area (if required).

e. Oil Deflector Repair

1. Clean and check all dimensions and clearance. Repair as necessary with the approval of the Engineer.

f. Clean and Repair Bearings

1. Repair Bore Bearings Turbine. (Weld repair and Machine to dimensions)

2. Perform TIG Weld or Spin Casting as required, and machine to dimension with the approval of the Engineer.

g. Gland Seal and Dummy Rings

1. Repair the centering pin, slot crush pin, and hook fit.

2. Repair or replace supporting blocks. Shall be machine to obtain required liner clearances. All materials shall be supplied by the Contractor.

h. Remove and Install Top Hat(S)

1. Quote by unitary pricing.

2. Perform all the required works and test to remove and install the Top Hats and their related components (Inlet Sleeve, Bell Seals). Including but not limited to X-ray and PWHT testing procedures.

i. Oil Flushing

The Oil Flushing contractor is required to furnish all labor, materials, tools, equipment, facilities, supervision, on site job administration and superintendence required, as requested by PREPA and shall perform all work expeditiously and to the entire satisfaction of the Contracting Officer. The Oil Flushing contractor shall comply with the following specification:

1. Ultra-high velocity flushing equipment capable of achieving 30 to 40 feet per second mass flow.

2. Use of 0.5-micron individual filtration at each individual pedestal.

3. Results are to be ISO Standard 13/10 or greater.

4. Flushing the Turbine Lubrication and Control System.

5. The oil flushing company shall have a minimum of five years of experience in the performance of oil flushing to steam turbine similar or equal to the reference unit.

6. The bidder shall provide with the proposal the name of the Oil Flushing Company including the certification of experience services and the certification that the company shall comply with the above requirements.

Cost Estimate

Cost Type

Repair Work + 20% Labor: \$3,500,000.00

Total Cost: \$3,500,000.00

DI# 1238151 Work To Be Completed (WTBC): \$3,500,000.00

Scope Notes:

- 1. For more information, please refer to pages 17-46 of the documents labeled: PALO SECO 001-Amendment Package.pdf
- 2. The cost estimate have been validated comparing historical costs provided by the applicant, please refer to the document labeled: 662957-DR4339PR-Cost Justification Amendment DI 1238151.pdf

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

661235

FAASt [Palo Seco Power Plant (Work Completed) Hurricane Maria Permanent Repairs

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BBA 2018 guidance documents. Additional details may be found in Sections 3 and 4, respectively.

Facility

Name: Palo Seco Steam Plant GPS Location:

Work Completed

The applicant utilized contracts for repairs to Palo Seco Power Plant to restore facilities back to pre-disaster design, capacity, and function within the existing footprint.

Contract - Cooling Towers 3 & 4 (Damage 1):

Demolition of existing Cooling Tower, and provide a New (4) Cell FRP Counterflow Cooling Tower to fit in the existing basin. The new
tower will cool 18,000 GPM of water from 100.0? F to 85.0? F, at an inlet wet bulb temperature of 80.0? F, using 60 HP motors. Works
included: demolition of existing tower, tower structure, fan deck, casing, fill system, drift eliminators, partition walls and end walls, wind
walls, plenum access, distribution system, mechanical equipment, louvers, and tower access. Cooling towers have to be replaced since
they suffered significant damages, principally to its structural components in the mechanical equipment support area, meaning motors,
transmissions, and fans among others.

Contract - Boiler's cameras (Damage 2):

• Procured, installed, and configured 2 each Ultra-High Image Resolution IP cameras with Monitoring Stations.

Contract - Federal Alert System Repairs (Damage 3):

• Removed and replaced the speaker stands, siren antenna, battery charger, batteries, power supply/base radio/activation console, and crane.

Contract - Repairs to All Generation Units (Damage 6):

• Provided labor, materials, scaffoldings, tools, equipment, and supervision to perform the required work to inspect, install and repair the refractory in ducts, lobby, chimneys, other boilers areas, inspect chimney top rings, paint chimneys and related structures, repair boiler's air traffic warning lights, and to repair the insulation of all needed areas in the Generation Units.

Work Completed Contracts:

- 1. Cooling Towers 3 & 4 (Damage 1) CT 79159 / International Cooling Tower USA, Inc. / \$1,432,953.75
- 2. Boiler's Cameras (Damage 2) CT 80665 / Protective Security Systems / \$25,142.29
- 3. Federal Alert System (Damage 3) CT 80154 / NSES Inc. / \$9,509.00
- 4. All Generation Units (Damage 6) CT 80457 / JR Industrial Contractors Inc. / \$1,039,999.80

Dl# 661235 Work Completed (WC): \$2,507,604.84

Scope Notes:

- 1. For more information, please refers to document labeled: 662957-DR4339PR-Palo Seco Steam Plant Permanent Repairs (Revised).pdf
- 2. For Environmental & Historical Preservation (EHP) compliance, details, and supporting documentation please refer to pages 73-90 of the document labeled: *FAAST SOW PALO SECO 001-Units 3 & 4 Projects.pdf*.

- 3. All costs associated with this project have been validated, see attachment labeled: 662957-DR4339PR FEMA Validation Summary Sheet.xlsx.
- 4. All procurement documents attached have been reviewed. See attachments labeled: Procurement Policy-GUAPRO~1.PDF.
- 5. No cost estimate was developed by FEMA for this project. Invoices and contract summary were submitted for the completed work.
- 6. For additional works and contracts details see attachment labeled: CONTRACT WORK SUMMARY RECORD Palo Seco v.2.xls.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238152 FAASt [Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler]

Work to be Completed

In order to improve the reliability of unit 3 of the Central Palo Seco, it is necessary to replace the boiler economizer elements. Since the unit returned to service in July 2021 after the last environmental repair, it has had several forced departures due to breaks in that component. The useful life of these elements varies between 20 to 30 years. However, the economizer in boiler 3 is original to the unit, which was put into commercial operation in 1970.

Maintaining the current economizer represents continuing with an unstable unit, in which the electrical system can be affected by load relays every time there is a break in the element tubes, most of which take the unit out of service in a sudden form. As a result, up to 216 MW can be lost.

Introduction

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

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. Additional details may be found in Sections 3 and 4, respectively.

Facility

Name: Palo Seco Steam Plant

GPS Location: Unit 3 -

Project Scope of Work

The scope of work for the Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler of the Palo Seco Steam Plant's Unit 3 will consist of the following:

(100) One Hundred Upper bank and (100) Lower bank, 'In-Kind' Economizer Assemblies.

Each upper bank assembly will be comprising (10) spiral fin tubes 2" OD x 0.200"mw SA210A1 Seamless material spaced on 5" centers. Spiral fins will be spaced at 2 fins per inch x $\frac{3}{4}$ " high x 0.06" thick x 15'-9" fin length.

Tubes will be supported at two locations by 1" thick Panto bars fabricated from SA387-11 Alloy material. Tubes will be attached to the Panto bars by 3/8" thick clips fabricated from SA387-11 Alloy material. The lower bend will also include a fabricated lug welded to the tube.

Each lower bank assembly will be comprising (10) spiral fin tubes 2" OD x 0.200"mw SA210A1 Seamless material spaced on 5" centers. Spiral fins will be spaced at 2 fins per inch x $\frac{3}{4}$ " high x 0.06" thick x 15'-9" fin length.

Tubes will be supported at two locations by 1" thick Panto bars fabricated from Carbon steel material. Tubes will be attached to the Panto bars by 3/8" thick clips fabricated from Carbon steel material. The lower bend will also include a fabricated lug welded to the tube.

Spacer bars for upper and lower assemblies will be fabricated from 3/8" thick, SA387-11 Alloy material and shipped loose along with fasteners.

Tube field weld ends will be cut and beveled to length.

Cost Estimate

Cost Type

Purchase of Equipment: \$1,785,074.00

Mobilization, demobilization, and crane costs: \$229,698.00

Installation: \$2,000,000.00

Labor: \$13,279.20

Total Cost: \$4,028,051.20

Dl# 1238152 Work To Be Completed (WTBC): \$4,028,051.20

Scope Notes:

1. For more information, please refer to the documents labeled: PALO SECO 001-Amendment Package.pdf (pages 2-16) and 662957-DR4339PR-Cost Justification Amendment DI 1238152.docx

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.
Cost

Code	Quantity	Unit	Total Cost	Section
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (9001 (Contract (FAASt Project 136271)))	1.00	Lump Sum	\$2,507,604.84	Completed
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (9001 (Contract (FAASt Project 136271)))	1.00	Lump Sum	\$500,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (9001 (Contract (FAASt Project 136271)))	1.00	Lump Sum	\$15,000,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9009 (Material (FAASt Project 136271))	1.00	Lump Sum	\$728,000.00	Uncompleted
9001 (Installation / Replacement (FAASt Project 136271))	1.00	Lump Sum	\$1,515,385.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$295,381.60	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$700,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$3,500,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$4,028,051.20	Uncompleted

CRC Gross Cost	\$28,774,422.64
Total 406 HMP Cost	\$0.00
Total Insurance Reductions	\$0.00
CRC Net Cost	\$28,774,422.64
CRC Net Cost Federal Share (90.00%)	\$28,774,422.64 \$25,896,980.38

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW- 10606(11929)	\$18,007,604.84	90 %	\$16,206,844.36	6/15/2022
1	Eligible	In Review		\$10,766,817.80	90 %	\$0.00	

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount		
No Records						

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

8/25/2022

GENERAL INFORMATION

Event: 4339DR-PR Project: SP 662957, *version 1* Category of Work: Cat F - Utilities Applicant: PR Electric Power Authority Event Type: Hurricane / Hurricane Maria Cause of Loss: Wind / Wind Driven Rain Incident Period: 9/17/2017 to 11/15/2017 Total Public Assistance Amount: CRC Gross Cost \$28,774,422.64

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: <u>Willis Towers Watson</u> (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18529F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

<u>Multinational Insurance Company</u> (88-CP-000307831-2, 88-CP-000318673-0, 88-CP-000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (8)

Damaged Inventory (DI) #661235:

FAASt [Palo Seco Power Plant (Work Completed)]

Location Description: The Palo Seco Steam Plant in Toa Baja sustained damages in the following areas, that were in need of immediate repair to bring the units back on-line as quickly as possible. All work has been completed and was included within the Fixed Cost Estimate (FCE) under the Generation inventory. Cooling Towers 3 & 4 (Damage 1): Cooling towers have to be replaced since they suffered significant damages, principally to its structural components in the mechanical equipment support area, meaning motors, transmissions, and fans among others. Boiler's cameras (Damage 2): Purchase of cameras to monitor opacity through boiler's chimneys. Cameras are an important tool in the boilers operation, to visually verify that the combustion controls are properly adjusted. Through the image, important decisions are made to make adjustments to the boiler's air and fuel parameters, that directly affect the gases emitted by the chimneys. In addition, help comply with Clean Air, and Air Pollution Regulations. Federal Alert System (Damage 3): Repairs to the Federal Alert System to maintain coverage in the determined areas and to fulfill the purpose of alerting the generation units personnel during emergencies. All Generation Units (Damage 6): Refractory work, paint, and insulation in all Generation Units and related structures, including scaffolding rent.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$2,507,604.84

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Palo Seco Power Plant (Work Completed)] in the amount of \$2,507,604.84.

Damaged Inventory (DI) #1226451:

FAASt Upgrade to Mark VI, Palo Seco Power Plant – Units 3 & 4

Location Description: Palo Seco Power Plant needs to upgrade its actual Distributed Control System (DCS) "Mark VI", installed in units 3 and 4, since it has more than ten (10) years. The system controls all the operations of the steam turbine and generator. The network switch upgrade will modernize the existing network utilizing current technology, improving network performance, enhancing cyber security features, and allowing a longer product life cycle.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$500,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the *FAASt Upgrade to Mark VI, Palo Seco Power Plant – Units 3 & 4* in the amount of \$500,000.00.

Damaged Inventory (DI) #1226454:

FAASt [Boiler, Generator & Turbine Repairs, Palo Seco Steam Plant - unit 3]

Location Description: Due to a major outage, Palo Seco Steam Plant needs to perform repairs and/or replacements to the boiler parts, generator and turbine of unit 3.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$15,000,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the

Damaged Inventory (DI) #1238088:

FAASt [Unit 4, Superheater Header Num. 5 Material and Installation - Palo Seco]

Location Description: Vendor proposes to furnish PREPA the material outlined to provide the SH-5 Header replacement for Palo Seco Unit #4.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$2,243,385.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Unit 4, Superheater Header Num. 5 Material and Installation – Palo Seco] in the amount of \$2,243,385.00.

Damaged Inventory (DI) #1238149:

FAASt [Palo Seco Steam Plant - Procurement Turning Gear System, Units 3 and 4]

Location Description: Procurement of the Turning Gear System, Units 3 and 4 (purchase) is necessary for the power plant to replace existing turning gear system of any of the units 3 and 4, in case of a malfunction. This system is essential to maintain the turbo-generator rotor in slow rotation motion to avoid possible structural deflections that may affect the return to service of the unit after a programmed forced outage repair is completed.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Palo Seco Steam Plant - Procurement Turning Gear System, Units 3 and 4] in the amount of \$295,381.60.

Damaged Inventory (DI) #1238150:

FAASt [Boiler's Refractory, Insulation, Scaffolding and Painting Palo Seco Steam Plant, U.4]

Location Description: Rehabilitation work is needed at Unit 4 Boiler of Palo Seco Steam Plant, due to environmental caused damages. Boiler rehabilitation includes refractory, insulation, scaffolding and painting.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$700,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the

Damaged Inventory (DI) #1238151:

FAASt [Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant]

Location Description: To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list. It is necessary to inspect, transport, maintain, and repair of the power turbine spare low-pressure rotor for the plant's unit 3

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: CRC Gross Cost \$3,500,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the *FAASt [Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant]* in the amount of \$3,500,000.00.

Damaged Inventory (DI) #1238152:

FAASt [Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler]

Location Description: The economizer in boiler 3 is original to the unit, which was put into commercial operation in 1970.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Palo Seco Steam Plant"

SOV/ Schedule Amount: \$1,047,000,000.00

Applicable Deductible Amount: \$25,000,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the *FAASt [Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler]* in the amount of \$4,028,051.20.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. **Duplication of Benefits**. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., "retained risk").

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed \$5,000.00. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

- 1. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or
- **2**. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Charlotte De Jesus Negron, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Upgrade to Mark VI, Palo Seco Power Plant – Units 3 & 4 in the amount of \$500,000.00.	\$500,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Boiler, Generator & Turbine Repairs, Palo Seco Steam Plant – unit 3] in the amount of \$15,000,000.00.	\$15,000,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Unit 4, Superheater Header Num. 5 Material and Installation – Palo Seco] in the amount of \$2,243,385.00.	\$2,243,385.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Palo Seco Steam Plant - Procurement Turning Gear System, Units 3 and 4] in the amount of \$295,381.60.	\$295,381.60
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Boiler's Refractory, Insulation, Scaffolding and Painting Palo Seco Steam Plant, U.4] in the amount of \$700,000.00.	\$700,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Low Pressure Turbine Rotor Refurbished Unit 3 Palo Seco Steam Plant] in the amount of \$3,500,000.00.	\$3,500,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Purchase of Water Wall Tubes and Economizer for Unit 3 Boiler] in the amount of \$4,028,051.20.	\$4,028,051.20
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Palo Seco Power Plant (Work Completed)] in the amount of \$2,507,604.84.	\$2,507,604.84

406 Mitigation

There is no additional mitigation information on FAASt [Palo Seco Power Plant –001 Units 3 & 4] (Generation).

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

Yes

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to

comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.

- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 Floodplains Applicant must obtain any required permits from the Planning Board prior to initiating work and comply with any conditions of the permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) 1. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

EHP Additional Info

There is no additional environmental historical preservation on FAASt [Palo Seco Power Plant –001 Units 3 & 4] (Generation).

Final Reviews

Final Review

Reviewed By MARTINEZ SANTIAGO, ISRAEL

Reviewed On 09/06/2022 2:49 PM AST

Review Comments

FEMA Final completed. Project ready for Recipient Review.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 09/06/2022 4:18 PM AST

Review Comments

Recipient Review Completed. Project is ready for Applicant Review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$28,774,422.64 for subaward number 10606 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also

understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Nieves, Ezequiel

Signed On 09/08/2022

Attachment B

(Unredacted version submitted underseal)

Department of Homeland Security Federal Emergency Management Agency

General Info

Project #	667744 P/W# 10608	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-
Project Title	FAASt [San Juan Power Plant - Auxiliary Infrastructure] (Generation)	Event	4339DR-PR (4339DR)
Project Size	Large	Declaration Date	9/20/2017
Activity	9/20/2027	Incident Start Date	9/17/2017
Completion Date		Incident End Date	11/15/2017
Process Step	Obligated		

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

Damage #921845; FAASt [Repairs to Nautilus Water Treatment System San Juan Power Plant]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Nautilus Water Treatment System
- Facility Description: The San Juan Power Plant needs to realize some repairs to its Nautilus Water Treatment System. Work consists of structural repairs to steel floor and walls, and application of interior and exterior anti-corrosive coating. This work is important for the reliability and continuity capacity of the process water treatment in the San Juan Power Plant generating units, in order to be able to keep them in service.
- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #921846; FAASt [New Raw Water Rank San Juan Power Plant, U. 7-10]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: New Raw Water Rank San Juan Power Plant, U. 7-10
- Facility Description: The San Juan Power Plant needs to acquire a new Raw Water Tank for units 7 to 10. Work consists of removal of the existing steel raw water storage tank, the design and build of a new 173,000 gallons steel raw water storage tank (including interior and exterior coating application), instrumentation system for reading water levels, and improvements to the existing tank's concrete base. This work is important since PREPA will have a brand-new tank whose average useful life will be 20 years, the Power Plant will increase its water reservoirs for energy production by 15 percent, the risk of accidents



due to structural failures in the existing tank will be eliminated, and the contamination by metal deposits around the water tanks will be reduced.

- Approx. Year Built: 1970
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #921353; FAASt [San Juan Auxiliary Infrastructure - Work Completed]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Building
- Building Type: Other Government Office
- Facility: San Juan Auxiliary Infrastructure
- Facility Description: The San Juan Power Plant sustained damages in the following areas, that were in need of immediate repair to bring the units back on-line as quickly as possible. (Damage 6): The alert system for mass notification in case of an emergency at the Plant was broken. "Diques" R1, R2, R3, R4 (Damage 8): Membrane liner system XR-5 was damaged. Boiler's dining room (Damage 9): Air conditioning was damaged. NPDES office (Damage 10): Air conditioning was damaged. General Mechanic Workshop North (Damage 12): Roof sealing treatment suffered serious damages, causing significant water leaks into the workshop, putting equipment and employees at risk. Power Plant Rehabilitation (Damage 18 two contracts): Contractor will provide all materials, equipment, tools, scaffolds, crane, insurance, labor and supervision to repair the hurricane affected structures in a safe way for the environment and the employees.
- Approx. Year Built: 1970
- GPS Latitude/Longitude:
- Number of Stories: 0

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1238153; FAASt [Structural Repairs Fuel Service Tank 10]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Structural Repairs Fuel Service Tank 10
- Facility Description: Fuel Oil #6 Service Tank S-10, since it has been empty after damages caused by Hurricane Maria. It has been exposed to the environment for a long time, which promotes deterioration due to corrosion. Rehabilitation includes structural steel repairs of floor, roof, shell, columns and beams elements, and application of new anti-corrosive coating on the interior and exterior of the tank Service = Bunker C Year Built = 2002 Nom. Height = 30-0" Designed Liquid Level = 29'-00" Nom. Diameter = 35'-0" Nom. Capacity = 5,000 Bbls
- Approx. Year Built: 2002
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

921845 FAASt [Repairs to Nautilus Water Treatment System San Juan Power Plant]

Note: SOW from previous version has been removed from current SOW. It can be found in the "Versioning and Amendments" tab in GM.

Version 1 created to capture DDD modifications for the inclusion of a new Damage Inventory (DI-1238153) to the FAASt Project San Juan Power Plant - Auxiliary Infrastructure (Generation). The new DI includes the work to be completed in order to rehabilitate and return to service the Fuel Oil #6 Service Tank S-10.

Work to be Completed

No work to be completed has been identified for this DI in Version 1.

Version 1 - DI# 921845 Work to be Completed (WTBC) = \$0

Version 1 Total (All DI's): Version 0 + Change Requested = \$1,721,247.00 + \$647,000.00 = \$2,368,247.00

Scope Note:

1. Version 1 did not affect the DI 921845 – Repairs to Nautilus Water Treatment System San Juan Power Plant. The DDD and SOW of this DI remains the same as in Version 0.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

921846 FAASt [New Raw Water Rank San Juan Power Plant, U. 7-10]

Work to be Completed

No work to be completed has been identified for this DI in Version 1.

Scope Note:

1. Version 1 did not affect the DI 921846 – New Raw Water Tank San Juan Power Plant, Units 7-10. The DDD and SOW of this DI remains the same as in Version 0.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

921353 FAASt [San Juan Auxiliary Infrastructure - Work Completed]

Work Completed

No work completed has been identified for this DI in Version 1.

Version 1 - DI# 921846 Work Completed (WC) = \$0

Scope Note:

1. Version 1 did not affect the DI 921353 – San Juan Auxiliary Infrastructure. The DDD and SOW of this DI remains the same as in Version 0.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request.

1238153 FAASt [Structural Repairs Fuel Service Tank 10]

Work to be Completed

San Juan Steam Plant needs to rehabilitate and return to service its Fuel Oil #6 Service TankS-10, since it has been emptied after damages caused by Hurricane Maria. It has been exposed to the environment for a long time, which promotes deterioration due to corrosion. Rehabilitation includes structural steel repairs of floor, roof, shell, columns and beams elements, and application of new anti-corrosive coating on the interior and exterior of the tank.

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4339-PR Public Assistance. The completed document will be reviewed by COR 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.

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. Additional details may be found in Sections 3 and 4, respectively.

Facilities Name: San Juan Power Plant

GPS Location Tank S-10:

Project Scope of Work

The scope of work for the Structural Repairs Fuel Services Tank 10 at the San Juan Power Plant will consist of the following:

A. New anchors design calculation shall be performed using API-650 latest edition and using a Seismic Use Group III (SUG III), Importance factor (I) of 1.5. Contractor shall include the installation of any additional anchor based on the calculation results.

- B. Repair undercut (0.250") at the internal manual level pipe support as per API-653 section 9.6.
- C. Repair bottom plate #4 with a 24" x 12" welded on plate as per API-653 section 9.3.
- D. Repair undercut (0.500") at nozzles N3 (4"ø) as per API-653 section 9.6.
- E. Replace ten (10) stairway steps identical to the existing ones.
- F. Replace twenty (20) stairway steps support bars identical to the existing ones.
- G. Replace the stairs top landing platform.

H. Replace the two roof nozzle flanges located adjacent to the top platform and their corresponding mate flanges. All gaskets, bolts, nuts, and washers shall be replaced.

I. Replace the existing illumination system including wiring, conduit, poles, and luminaires.

- J. Provide a new tank reconstruction nameplate in accordance with API-653 section 13.1.
- K. Install a new float and tape transmitter for tank level measuring.
- L. Install a new liquid level indicator (target and gauge board).
- M. Installation of 10 (12" x 12") insert plates for roof or shell repairs, total of 10 ft2 of repair plate area.
- N. Installation of 10 (12" x 12") lap patches for bottom repairs, total of 10 ft2 of repair plate area.

O. Include 20 linear feet of shell to bottom weld repair (or any butt weld) and 20 linear feet of bottom weld repair (or any fillet weld).

P. All flanges shall be refitted with new gaskets, bolts, nuts, and washers.

Q. After coating removal all bottom and shell to bottom welds shall be vacuum tested.

R. All telltale holes shall be cleaned and pneumatically tested.

S. All scaffolding shall be inspected, certify, and tagged with the corresponding labels.

T. Besides the coating work on the tank interior and exterior shell, the Contractor shall paint up to the next flange face and all welded support structure. Railings, gratings, and stairs shall also be included.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

-Tank S-10 Rehabilitation: \$647,000.00

Version 1 - DI# 1238153 Work to Be Completed (WTBC): \$647,000.00

Scope Notes:

- 1. For a detailed scope of work and cost estimate, please refer to document labeled: "San Juan Infrastructure- SJ 004 Amendment.pdf".
- 2. For detailed information regarding EHP Requirements, please refer to document labeled: "667744 EHP Project Details-San Juan Amendment.pdf".

406 HMP Scope

Project came back to HM queue due to an addition of another DI, nevertheless, there is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

Cost

Code	Quantity	Unit	Total Cost	Section
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAAST Project 136271))	1.00	Lump Sum	\$471,247.00	Completed
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAAST Project 136271))	1.00	Lump Sum	\$250,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAAST Project 136271))	1.00	Lump Sum	\$1,000,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (9001 (Contract (FAASt Project 136271)))	1.00	Lump Sum	\$647,000.00	Uncompleted

CRC Gross Cost	\$2,368,247.00
Total 406 HMP Cost	\$0.00
Total Insurance Reductions	\$0.00
CRC Net Cost	\$2,368,247.00
CRC Net Cost Federal Share (90.00%)	\$2,368,247.00 \$2,131,422.30

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW- 10608(11930)	\$1,721,247.00	90 %	\$1,549,122.30	6/15/2022
1	Eligible	Awarded	PA-02-PR-4339-PW- 10608(12472)	\$647,000.00	90 %	\$582,300.00	9/15/2022

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
	No R	ecords		

Obligation History

Version # Date Obligated Obligated Cost Cost Share IFMIS Status IFMIS Obl	jation #
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Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any
 entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient
 agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal
 agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same
 purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

8/16/2022

GENERAL INFORMATION

Event: DR4339-PR Project: SP 667744 Category of Work: Cat F - Utilities Applicant: PR Electric Power Authority Event Type: Hurricane / Hurricane Maria Cause of Loss: Wind / Wind Driven Rain Incident Period: 9/17/2017 to 11/15/2017 Total Public Assistance Amount: \$2,368,247.00

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: <u>Willis Towers Watson</u> (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

<u>Multinational Insurance Company</u> (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (4)

Damaged Inventory (DI) #921353:

FAASt [San Juan Auxiliary Infrastructure - Work Completed]

Location Description: San Juan Auxiliary Infrastructure

GPS Coordinates Cause of Loss: Wind / Wind Driven Rain SOV / Schedule #: "San Juan Steam Plant" SOV / Schedule Amount: \$647,000,000.00 Applicable Deductible Amount: \$25,000,000.00 Damage Inventory Amount: \$471,247.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

-

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [San Juan Auxiliary Infrastructure - Work Completed] in the amount of \$371,524.00 (\$471,247.00 – Uninsurable Items Amount \$99,723.00). Please see "SP667744-DR4339PR-FEMA Validation Summary" file.

Damaged Inventory (DI) #921845:

FAASt [Repairs to Nautilus Water Treatment System San Juan Power Plant]

Location Description: Nautilus Water Treatment System

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "San Juan Steam Plant"

SOV / Schedule Amount: \$647,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$250,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project #

136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Repairs to Nautilus Water Treatment System San Juan Power Plant] in the amount of \$250,000.00.

"The cost estimate provided by the Applicant in PDF format does not allow the Insurance Specialist to calculate uninsurable costs. Therefore, an O&M requirement is mandated for the total costs of the DI.".

Damaged Inventory (DI) #921846:

FAASt [New Raw Water Rank San Juan Power Plant, U. 7-10]

Location Description: New Raw Water Rank San Juan Power Plant, U. 7-10

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "San Juan Steam Plant"

SOV / Schedule Amount: \$647,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$1,000,000.00

-

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

-

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAASt [New Raw Water Rank San Juan Power Plant, U. 7-10] because facility does not meet the definition of building, equipment, contents, or vehicle.

Damaged Inventory (DI) #1238153:

FAASt [Structural Repairs Fuel Service Tank 10]

Location Description: Structural Repairs Fuel Service Tank 10

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "San Juan Steam Plant"

SOV / Schedule Amount: \$647,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$647,000.00

-

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

-

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAASt [Structural Repairs Fuel Service Tank 10] because facility does not meet the definition of building, equipment, contents, or vehicle.

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Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any

subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., "retained risk").

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed \$5,000.00. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

- 1. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or
- 2. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

O&M Requirements

Insured Peril	ltem Type	Description	Required Coverage Amount
Wind	Building	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Repairs to Nautilus Water Treatment System San Juan Power Plant] in the amount of \$250,000.00.	\$250,000.00
Wind	Building	An Obtain & Maintain Requirement is being required for Building, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [San Juan Auxiliary Infrastructure - Work Completed] in the amount of \$371,524.00.	\$371,524.00

406 Mitigation

There is no additional mitigation information on FAASt [San Juan Power Plant - Auxiliary Infrastructure] (Generation).

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

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EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) 1. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds. 2. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities.
- Executive Order 11988 Floodplains Applicant must obtain any required permits from the Planning Board prior to initiating work and comply with any conditions of the permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [San Juan Power Plant - Auxiliary Infrastructure] (Generation)**.

Final Reviews

Final Review

Reviewed By MARTINEZ SANTIAGO, ISRAEL

Reviewed On 08/22/2022 2:12 PM AST

Review Comments

FEMA Final Review completed. Project ready for Recipient Review.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 08/22/2022 2:51 PM AST

Review Comments

Recipient review completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$2,368,247.00 for subaward number 10608 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Nieves, Ezequiel

Signed On 08/22/2022

Attachment C

(Unredacted version submitted underseal)

Department of Homeland Security Federal Emergency Management Agency

General Info

Project #	672950 P/W# 10702	Project Type	Specialized	
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-	
Project Title	FAASt [Costa Sur Power Plant Permanent Repairs CS-001] (Generation)	Event	4339DR-PR (4339DR)	
Project Size	Large	Declaration Date	9/20/2017	
Activity	9/20/2027	Incident Start Date	9/17/2017	
Completion Date		Incident End Date	11/15/2017	
Process Step	Obligated			

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

Damage #1229667; FAASt [Procurement of Water Heater 5 (Deaerator) Pump]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Water Heater 5 (Deaerator) Spare Pump Costa Sur Power Plant
- Facility Description: In a Rankine Thermodynamic Cycle, the deaerator is the equipment where the dissolved oxygen of the feed water is removed to avoid corrosion into de boiler tubes. This open feed water heater is also the storage tank for the boiler water feed pump which pumps the water at 4000 psig to the boiler. The deaerator pump is the auxiliary equipment which pump the feed water to this open heat exchanger. It delivers water at 350 psig to keep a proper level in the deaerator for a continuous operation of the system. Each unit (5 & 6) of South Coast steam plant has two deaerator pumps and are both necessary for full load operation (410MW). Those pumps are inspected according to the preventive maintenance schedule. This equipment is the original one and has more than 50 years of use. Emphasizing in this issue, an overhaul was performed in one of the pumps in unit 6 and the casing of the pump was found in bad conditions so a mayor repair will be required. To avoid risks of unit limitations or forced outages a spare deaerator pump is required. With the pump available, a repair program can be initiated to refurbish all the pumps without any unit limitations or derating.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229668; FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:



- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6
- Facility Description: Each boiler of Costa Sur has a set of forced draft fans and induced draft fans. The forced draft fan controls the airflow entering the Boiler. This fan along with the forced draft fan maintain a negative pressure inside the boiler to control the combustion that generates the heat to produce steam. This guarantees the reliability of the operation of the Boilers to changes in the load of the Electric System. The four (4) forced draft fan motors installed in the Boilers have been in service for 42 years. When one of these motors breaks down, the Boiler is limited to half capacity while the damaged motor is repaired. The repair time of an engine can take more than a month of work in a repair shop in Puerto Rico.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229669; FAASt [Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Condensate Pump (CP) Motor, Costa Sur Power Plant units 5 & 6
- Facility Description: Costa Sur Power Plant needs to purchase a Condensate Pump (CP) Motor as spare part, in the event that one of the motors being used is damaged. As a key component of the Rankine thermodynamic process, the CP delivers water from the unit's condenser to the suction header of the Deaerator pumps. By doing this operation, an adequate water level is maintained in the condenser for a continuous operation of the cycle. Two pumps are required for full load. The loss of one of them will reduce the capacity by 100 MW and since there is not a spare motor for this pump, it is cost effective to purchase a spare motor considering the extensive downtime period to refurbish a damaged motor (over three months).
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229670; FAASt [AGC Replacement Project Costa Sur Unit 5 & 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: AGC Replacement Costa Sur Unit 5 & 6
- Facility Description: In the electrical grid, one of the most important issues is the frequency control. The generating units should be able to change loads to keep the frequency in a proper level (60HZ). Also, the generating units should be loaded in accord of an economic dispatch program. Thus, a controller located in Monacillos send a signal through SCADA to all the plants to position the units at the required load. The AGC of units 5 & 6 were installed in 1973 and their spare parts are no longer available. Currently, the AGC of unit 5 is not in service and the AGC of unit 6 works intermittently.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229671; FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Natural Gas Igniters for Costa Sur Units 5 and 6
- Facility Description: Two main components of a boiler's combustion system are burners and igniters. The existing igniters of boilers 5 and 6 are the originals of the units and are obsolete. They were not designed for the burning of natural gas. To ensure ignition reliability they must be compatible with burners that were designed and manufactured by the same company. In recent years there have been problems with its replacement parts, in ignition, and in 2018 several electronic cards of this system broke down when replacing the UPS (Uninterruptible Power System) of the units. To this end, it is intended to replace the existing system with a state-of-the-art system designed by John Zink (COEN) and integrate it into the existing Foxboro burner control system (BMS Foxboro), which was modified for conversion to natural gas. Given the unreliability of the existing ignition system, it is necessary to replace them with one that has the updated technology and that is compatible with the installed burners. In this case, to operate the units reliably, safety and efficiently the igniters must be designed and manufactured by the same company that did the engineering and studies to manufacture and supply the burners to natural gas, as part of the conversion of boilers 5 and 6.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229672; FAASt [Travelling Screens Replacement, Costa Sur Power Plant – Units 5 & 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Travelling Screens Replacement, Costa Sur Power Plant Units 5 & 6
- Facility Description: Costa Sur Power Plant needs to replace the five (5) travelling screens of units 5 & 6 by new ones, to add both reliability and efficiency, and to avoid unit limitations. The new travelling screens will be capable to operate continuously according to the latest environmental regulations. The travelling screen is the secondary filtering equipment of the Condenser Circulating Water Pump (CCWP). This pump delivers sea water to the condenser to cool down the steam from the turbine to be reused in the thermodynamic cycle. For a full load unit operation, two CCWPs are required. The loss of a pump will limit the unit from 50MW to 100 MW depending of the condenser's cleanness factor. The actual travelling screens are not in a good condition since their parts and the main frame exhibit wear due to operation beyond the useful years. From 5 travelling screens, only 4 are in use in a limited operation to avoid damages in their main components. Furthermore, the actual travelling screens do not are in compliance with the Section 316 (b) of the Clean Water Act.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

• Date Damaged: 9/20/2017

• Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229673; FAASt [Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6
- Facility Description: The Regulator Valves of Units 5 and 6 of the Central Costa Sur (Reguladora Grande de Alimentación) require periodic maintenance to maintain reliable generation. The operation of this valve is of utmost importance since it controls the level of the boiler so that it can produce steam and use that energy to move the turbine and generator. Because the current regulator is virtually obsolete, response parts have doubled in price in recent years, as has delivery time. Besides the parts or "Trim" are replaced monthly. As can be seen in fig. 1 answer piece prices hovered around \$67k as of 2014, currently it is \$98k. Since 2014 the "trim" has been requisitioned three times, and three times they have had to be repaired locally with TMG personnel because the warehouse did not have the parts at the time of repair. This is due to the time it takes from the new request, manufacturing and delivery. In addition to the inconveniences already mentioned, when the valve is repaired locally, the repair or replacement of parts leads to a day delay. Due to these inconveniences, the purchase of a new Fisher brand regulator is requested, which is modern, more resilient and economical.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229674; FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant – Unit 6]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant Unit 6
- Facility Description: Costa Sur Power Plant needs to replace the tubes of the feed water heater #3 of unit 6. The tube replacement is necessary because the heater already has more than 10% of the tubes plugged, and the recommendation of the Heat Exchanger Institute (HEI) is to replace them to avoid further damage of the equipment or the turbine. The heater #3 is directly below the turbine and by design, its extraction pipe does not have an isolating valve, so it cannot be isolated. This repair will ensure the proper operation of the unit without any potential risk of water induction to the turbine.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229675; FAASt [Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central Costa Sur]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:
- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Procurement and delivery of hot and cold section basket and other components of the Air Preheater of unit 5 Central Costa Sur
- Facility Description: Currently, unit 5 of the Central de Costa Sur has a limitation in the production of energy of 350 MW due to a high-pressure differential in the combustion air of the boiler. This is because the air preheaters are in poor condition from a long time of use. For this reason, we need to change the seals and the baskets. The Costa Sur unit 5 will have a scheduled departure for a major repair in October 2022. The repair of the air preheaters will improve thermal performance and increase the reliability of the unit. Additionally, this will significantly improve the efficiency, reliability of this unit and decrease emissions to the environment. Unit 5 of Costa Sur generates 410 MW with natural gas, which is a more economical fuel and regulates what gives the island's electrical system greater stability.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229677; FAASt [Purchase of motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur
- Facility Description: Units 5 and 6 of the Central Costa Sur use three engines to produce the steam necessary for the generation of electricity. These motors are extremely critical to guarantee the reliability of the operation of our generating units, which each contribute to the 410 MW electrical system. This represents a total of six BCWP engines in continuous service. Units 5 and 6 of the Central Costa Sur use five motors for the condenser water circulation pump for the electricity generation process. These engines are extremely critical to guarantee the reliability of the operation of our generating units, which each contribute 410 MW to the electrical system. This represents a total of Six BCWP engines are extremely critical to guarantee the reliability of the operation of our generating units, which each contribute 410 MW to the electrical system. This represents a total of five CCWP motors in continuous duty.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229678; FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Load Center 5 2 in Unit 5 Turbine
- Facility Description: Costa Sur Unit 5 load center is over 40 years old, obsolete, and the Allis Chalmers
 manufacturer does not manufacture replacement parts. The replacement of this equipment will significantly
 increase the reliability of unit 5 and reduce electrical failures in the auxiliary equipment of the turbines. In
 addition, for safety reasons for our employees, load center must be replaced with a modern one that
 minimizes the possibilities of electrical contact and that complies with ARC FLASH regulations.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229679; FAASt [Costa Sur Power Plant - Units 5 & 6 Excitation System Upgrade]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Units 5 & 6 Excitation System Upgrade
- Facility Description: Costa Sur units 5 and 6 are in need of an upgrade to their Static Excitation System, since after 23 years in the Plant they are completely obsolete. In case of an emergency, there are no new parts to be purchased and all the spare parts have been used, including units 3 and 4 Excitation System. In addition, one Excitation Power Transformer for both units is needed, since there is no spare one in the Plant. It is important to upgrade these Static Excitation Systems of the Steam Turbine Generators, since units 5 and 6 are the ones that regulate load and frequency in the electrical system of PR.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229680; FAASt [4160V Electric Cable, Costa Sur Power Plant – Unit 5]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: 4160V Electric Cable, Costa Sur Power Plant Unit 5
- Facility Description: Costa Sur Power Plant wants to acquire 6000 ft. of special construction electrical cable, to replace the cables of the Normal Service Station Transformers (NSST) 5A and 5B of unit 5. The NSST provide electrical power to all the auxiliary equipment of the generating unit. These step-down transformers supply 4160v to the switchgears by using three (3) underground cables for a total of nine (9) cables (1500Kcmil Insulation XLPE 5kv). The cables haven't been change since their original installation in the 1970ths so the expected useful life is overdue. In addition, the cables are full of residual oil from the transformers, which deteriorates the insulation of the cables. An electrical failure could cause a catastrophic fire, so the replacement will bring reliability to the unit for a long term period. In 2017 the cables of NSST 6B were changed after a failure of two of them, and in 2020 the ones of the NSST 6A were replaced too. In both NSSTs, the cable's insulation was in bad condition.
- Approx. Year Built: 1967
- Start GPS Latitude/Longitude:
- End GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229681; FAASt [Costa Sur Power Plant Unit 5 - HP IP LP Turbine Rotor Replacement]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

Facility Type: Power deneration transmission and distribution facilities

- I admity Type. I ower generation, transmission, and distribution admites
- Facility: Unit 5 HP IP LP Turbine Rotor Replacement
- Facility Description: A steam path audit is a physical inspection of the turbine steampath, conducted while the rotor is on the half-shell. The purpose is to identify and quantify performance problems due to the deterioration of steampath components. Engineers and maintenance personnel use the results of audits to identify the most cost-effective repairs and to justify repair recommendations. PREPA received a proposal #211569R2 from vendor Mechanical Dynamics & Analysis LLC as part of the procurement for inspection planned during outage of October 2022 on Unit 5 of the Costa Sur Power Plant. This project is necessary and relevant because during the steampath audit or inspection the return to service performance of the machine can be predicted, also following repairs. Data taken during a steampath audit can also help to: Measure the efficiency effects of deposits Assess recoverable leakage losses following repairs Determine losses due to surface roughness changes Provide quantifiable data for the review repair recommendations Evaluate the effects of solid particle erosion Calculate losses associated with foreign object damage Integrate decisions with alignment recommendations Provide historical records for future outages
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229682; FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs
- Facility Description: Currently, unit 5 of the Central de Costa Sur has a limitation in the production of energy of 350 MW due to a high-pressure differential in the combustion air of the boiler. This is because the air preheaters are in poor condition from a long time of use. For this reason, we need to change the seals and the baskets. The Costa Sur unit 5 will have a scheduled departure for a major repair in October 2022. The replacement and repairs to the unit boiler sections will significantly improve the efficiency, reliability of this unit. Unit 5 of Costa Sur generates 410 MW with natural gas, which is a more economical fuel and regulates what gives the island's electrical system greater stability.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229683; FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant – Unit 5]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Water Heater 6 Replacement Work, Costa Sur Power Plant Unit 5
- Facility Description: Costa Sur Power Plant needs to replace the feedwater heater #6 of unit 5. The replacement is necessary because the heater already has more than 10% of the tubes plugged, and the recommendation of the Heat Exchanger Institute (HEI) is to replace them to avoid further damage of the equipment or the turbine. In a thermodynamic process, the feedwater heat exchanger improves the efficiency of the unit. The heat exchanger uses steam extracted from the turbine to increase the feedwater temperature. This reduces the heat input required in the boiler to generate steam at proper conditions.

- Approx. Year Built: 1967
- GPS Latitude/Longitude:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229684; FAASt [Costa Sur Power Plant Unit 6 – HP/IP/LP Repairs (Failure)]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Unit 6 HP/IP/LP Repairs (Failure) 11/29/
- Facility Description: The power plant economic performance is not only driven by it's thermal efficiency, but also by its assets availability and reliability. Major programmed outages are scheduled following the guidelines provided by the original equipment manufacturer in order to fully evaluate such assets. The main objective of this project is to perform a detailed inspection of the Unit 6 HP/IP/LP turbines, which were removed after an outage on October 2020. Such project is important in order to prevent a catastrophic failure and service interruptions.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 5/19/2022
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229685; FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle
- Facility Description: At the moment there's no Boiler Feed Water Pump package for Costa Sur Power Plant, which presents an operational availability and reliability problem, because this type of equipment takes more than a year to be designed, manufactured and delivered. Since this is an essential equipment needed for an efficient operation of the generation units, an order to the sole manufacturer Siemens Power Generation Service is very important.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1229686; FAASt [Costa Sur Power Plant Permanent Repairs]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: DDD for this facility codified in the 136271 MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.
- Facility Description: After a forced shut down of Costa Sur Power Plant Unit 6 due to high vibrations

reflected on bearings 4 and 5 during an electrical disturbance on transmission line 38900, a visual inspection of the turbine detected broken diaphragms, shroud bands, and buckets of stages L- 1 and L-2 of low pressure rotor B (LPB) turbine and generator end.

- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

1229667 FAASt [Procurement of Water Heater 5 (Deaerator) Pump]

Procurement of Water Heater 5 (Deaerator) Pump

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list. In a Rankine Thermodynamic Cycle, the deaerator is the equipment where the dissolved oxygen of the feed water is removed to avoid corrosion into de boiler tubes. This open feed water heater is also the storage tank for the boiler water feed pump which pumps the water at 4000 psig to the boiler. The deaerator pump is the auxiliary equipment which pump the feed water to this open heat exchanger. It delivers water at 350 psig to keep a proper level in the deaerator for a continuous operation of the system.

Each unit (5 & 6) of South Coast steam plant has two deaerator pumps and are both necessary for full load operation (410MW). Those pumps are inspected according to the preventive maintenance schedule. This equipment is the original one and has more than 50 years of use.

Emphasizing in this issue, an overhaul was performed in one of the pumps in unit 6 and the casing of the pump was found in bad conditions so a mayor repair will be required. To avoid risks of unit limitations or forced outages a spare deaerator pump is required. With the pump available, a repair program can be initiated to refurbish all the pumps without any unit limitations or derating.

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the Procurement of Water Heater 5 (Deaerator)] Pump is to purchase and install one deaerator pump for both units 5 & 6.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-Equipment: \$400,000.00

Dl# 1229667 Work to Be Completed (WTBC): \$400,000.00

Total Project Cost (All DI's): \$42,299,738.54

(For additional SOW information details please refer to document labeled: 672950-DR4339PR-FAAST PREPA SOW COSTA SUR 001 v.2.pdf.)

Project Notes:

- 1. For Environmental & Historical Preservation (EHP) requirements, details, and supporting documentation please refer to document labeled: 672950-DR4339PR-FAAST PREPA SOW COSTA SUR 001 v.2.pdf. pages 681-698.
- 2. For FEMA cost review references please refer to document labeled : SP 672950 DR4339 FEMA Cost Review.xlsx.
- 3. Please see below general information and a brief description of the SOW for each additional generation project in the same facility: Costa Sur Power Plant, as required by EHP:

Dl#1229667 FAASt [Procurement of Water Heater 5 (Deaerator) Pump]

The scope of work consists of:

- Purchase and install one deaerator pump for both units 5 & 6.

D#1229668 FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6]

The scope of work consists of:

- Purchase two motors: one for the IDF (4500hp) and one for the FDF (1750hp)

D#1229669 FAASt [Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6]

The scope of work consists of:

- Acquisition of one (1) Condensate Pump Motor (500hp) to be storage as spare part to avoid units forced outages and/or load limitations.

Dl#1229670 FAASt [AGC Replacement Project Costa Sur Unit 5 & 6]

The scope of work consists of:

- Purchase and install two AGC's for a proper load regulation of units 5 & 6. The systems will be installed by August 2022

Dl#1229671 FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6]

The scope of work consists of:

- 40* local gas trains for igniters, each including manual isolation valve, pneumatically actuated automatic double-block safety vent valve, assembled as piping spool with factory-wired junction box.

- 40* sidewall horn igniters, natural gas, 12mmBtu/hr each, including stationary high energy spark system with replaceable spark tip, spark cable and spark exciter.

- 40* flexible metal hoses for gas igniters.
- 40* UV/IR flame scanners with cable and power supply.
- 1 BMS narrative operating sequence. Does not include BMS logic diagrams.
- Engineering evaluation of igniter and scanner air fans for capacity.

- On-site technical field advisory services, including guidance during construction, start-up, combustion tuning, and commissioning, are offered on per diem basis.

*(24 each Unit 5 and 16 each Unit 6)

Dl#1229672 FAASt [Travelling Screens Replacement, Costa Sur Power Plant - Units 5 & 6]

The scope of work consists of:

- Removal and replacement of five (5) galvanized steel Travelling Screens, with its auxiliary equipment of the Power Plant's sea water intake for the cooling of units 5 and 6 condensers.

- The work shall include an infrastructure to protect the fish and other marine life, in compliance with Section 316 (b) of the Clean Water Act.

D#1229673 FAASt [Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6]

The scope of work consists of:

- Replace the regulators in units 5 & 6 by new ones built with the latest valves technology and material selection.

D#1229674 FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant - Unit 6]

The scope of work consists of:

- Replace the tubes of the feed water heater #3 of unit 6, including design, manufacture, delivery and installation.

D#1229675 FAASt [Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central Costa Sur]

The scope of work consists of:

- Purchase of Basket sets , Air Preheater Hot end
- Purchase of Baskets sets, Air Preheater- Cold end
- Purchase of Axial, Radial, By pass seals and Rotor seals. Purchase of bolts and nuts required for the replacement procedure.
- Removal of old baskets and seals to be replaced
- Installation of new baskets, seals and hardware needed for the completion of the work.
- Crane rental services will be required for the removal and installation process of the baskets and all its components.
- Handling and disposal for the removed equipment, hardware and debris generated during the replacement works.

Dl#1229676 FAASt [Replacement of Air Preheater's Baskets Unit 5]

The scope of work consists of:

- Removal of the damaged baskets of the air preheater of unit 5 of South Coast and install the baskets described in the project 50. The installation includes the repair of the drum casing, replacement of the seals (circumferential, radial, and axial seals), adjustment of the sector plates. The contractor shall provide all the necessary equipment (cranes, welding machines, pulleys, scaffolds, etc.), manpower including supervision and labor and consumable materials (welding rods, bolts, etc.) to make the replacement. PREPA shall provide the dumpsters and transportation to dispose the baskets to be removed in the industrial landfill.

D#1229677 FAASt [Purchase of motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur]

The scope of work consists of:

- Purchase and delivery of a 700 Horsepower vertical motor for the Boiler Circulating Water pumps.
- Purchase and delivery of a 1000 horsepower vertical motor for the Condenser Circulating Water pumps.
- Removal and replacement of existing motor with new motor for BCWP
- Removal and replacement of existing motor with new motor for CCWP

DI#1229678 FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine]

The scope of work consists of:

- Purchase and delivery of Auxiliary Systems Load center for turbine
- Purchase and delivery of breakers for turbine
- Replace and install new equipment
- Handling and disposal of removed equipment and components.

Dl#1229679 FAASt [Costa Sur Power Plant - Units 5 & 6 Excitation System Upgrade]

The scope of work consists of:

- Design, manufacturing, supply, erection, testing and commissioning of Automatic Excitation Systems for units 5 and 6 in Costa Sur Power Plant.

- Model Cutler-Hammer WDR2000 will be upgraded to Model DECS-2100 in both Costa Sur units 5 and 6.
- Manufacture and delivery of one (1) Full Forcing Rectifier Duty Rated Excitation Power Transformer.

- Basler will be in charge of the Excitation Control equipment and installation, and Engineering Services International Inc. will supply and install bus taps, bus runs, power cables and control wires, to and from the Excitation Control equipment.

Dl#1229680 FAASt [4160V Electric Cable, Costa Sur Power Plant - Unit 5]

The scope of work consists of:

- Acquisition, delivery and installation of 6000 ft. of special construction electrical cable (1500Kcmil Insulation XLPE 5kv).
- The delivery time is about 4 months for the cables, and the installation time is 6 weeks.

DI#1229681 FAASt [Costa Sur Power Plant Unit 5 - HP IP LP Turbine Rotor Replacement]

The scope of work consists of:

- Inspect and refurbish the spare turbine rotors and their stationary parts (diaphragms), previously removed from unit 6 in 2020 after 10 years of use, in order to install them in the turbine of unit 5 during the programmed outage on October 2022. The project will cover HP/IP rotor, LPA rotor and the LPB rotor that was damaged on August 22, 2021. The rotor's inspections will be performed in the United States and a recommendation report will be submitted for PREPA's staff evaluation. After the evaluation of the recommendations and the proper procurement procedure, a refurbish process of about 4 months will be initiated. The refurbishing process will include a high-speed balance of the three rotors. The rotors and diaphragms will be shipped to the plant and properly stored at the facility.

D#1229682 FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs]

The scope of work consists of:

- Services and materials purchase for the following tasks:
 - o Hydrostatic testing
 - o Internal chemical cleaning
 - o External Boiler Wash
 - Soot blower
 - $_{\odot}$ Burners Repair Works
 - $_{\odot}$ Repair of control valves
 - \circ Nondestructive testing of high energy piping
 - $\,\circ\,$ Hanger's inspections
 - $\,\circ\,$ Fuel lines repairs
 - o Boiler assessment
 - $\circ\,$ Forced Air Draft fans repairs
 - $_{\odot}$ Induced Draft fan repairs
 - $\circ\,$ Boiler Circulating Water Pumps repairs
 - $_{\odot}$ Ducts repair
 - $\,\circ\,$ Insulation works to be performed
 - Scaffolds installation for repairs
 - $_{\odot}$ Repair of motorized and manual line valves
 - o Miscellaneous equipment repair

DI#1229683 FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant - Unit 5]

The scope of work consists of:

- Design, manufacture, delivery and unload one (1) new High Pressure Feedwater Heater 6.

Dl#1229684 FAASt [Costa Sur Power Plant Unit 6 – HP/IP/LP Repairs (Failure)]

The scope of work consists of:

- Repair the turbine LPB rotor (Lower Pressure Turbine Rotor Segment B) and their stationary parts (diaphragms) that were removed from unit 6 on the outage of October 2020. The repairs will include nondestructive tests. The rotor and diaphragms will be shipped from the plant to a shop in EUA for . Thrust bearing inspection, oil flushing, boroscopic inspection and bump check procedure will be performed on these rotors to ensure proper operation.

Dl#1229685 FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle]

The scope of work consists of:

- Contractor shall design, drafting, manufacture and delivery one (1) Inner Barrel Assembly for the 9BB pump of unit 5 or 6 at Costa Sur Power Plant.

- Manufacture includes: shaft, impellers, rings, bushings, inlet guide, diffusers, diaphragms, and miscellaneous barrel assembly hardware.

Dl#1229686 FAASt [Costa Sur Power Plant Permanent Repairs]

The scope of work consists of:

- Reassembly of Thrust bearing, Generator H2 seals, installation of LPA Hood, spare LPB and crossovers.
- Line Boring.

- Bearings and Seals Inspections.
- Spare LPB Rotor and Diaphragm Repairs.
- Supply and installation of Conventional Packing Rings, Strips and its hardware.
- Vortex Shredder Tip Seals, as an option.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229668

FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6]

Procurement of Induced Draft Fan (IFD) and Forced Draft Fan (FDF) Motors for Units 5 and 6

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Each boiler of Costa Sur has a set of forced draft fans and induced draft fans. The forced draft fan controls the airflow entering the Boiler. This fan along with the forced draft fan maintain a negative pressure inside the boiler to control the combustion that generates the heat to produce steam. This guarantees the reliability of the operation of the Boilers to changes in the load of the Electric System.

Introduction

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Facilities

GPS Location:

Project Scope of Work

In a boiler, the Force Draft Fan (FDF) is the auxiliary equipment that delivers air to the furnace for the combustion process. In the other hand, the Induced Draft Fan (IDF) retrieves the flue gases from the furnace, keeping the furnace at a negative pressure to avoid flue gas leakage through the enclosure and ports. Two FDFs and two IDFs are required for a full load operation. The loss of any of them redounds in a unit limitation of 50% of the load. Since there is not a suitable spare motor for those Fans and considering the extensive downtime period to refurbish a damaged motor (over three months) it is cost effective to purchase a new motor for each fan. Thus, the scope of this project is to purchase two motors: one for the IDF (4500hp) and one for the FDF (1750hp).

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-Manufacture and Delivery: \$715,000.00

4500 HP HORIZONTAL MOTOR FOR INDUCED

DRAFT FANS (IDF) UNITS 5 AND 6 OF COSTA

SUR (CR 252640)

-Manufacture and Delivery: \$445,000.00

1750 HP HORIZONTAL MOTOR FOR FORCED

DRAFT FANS (FDF) UNITS 5 AND 6 OF COSTA

SUR (CR 252642)

Dl# 1229668 Work to Be Completed (WTBC): \$1,160,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229669 FAASt [Condensate Pump (CP) Motor for Units 5 and 6]

Condensate Pump (CP) Motor for Units 5 and 6

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto

Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Costa Sur Power Plant needs to purchase a Condensate Pump (CP) Motor as spare part, in the event that one of the motors being used is damaged. As a key component of the Rankine thermodynamic process, the CP delivers water from the unit's condenser to the suction header of the Deaerator pumps. By doing this operation, an adequate water level is maintained in the condenser for a continuous operation of the cycle. Two pumps are required for full load. The loss of one of them will reduce the capacity by 100 MW and since there is not a spare motor for this pump, it is cost effective to purchase a spare motor considering the extensive downtime period to refurbish a damaged motor (over three months).

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the Condensate Pump Motor for Costa Sur Power Plant units 5 and 6

will consist of the following:

• Acquisition of one (1) Condensate Pump Motor (500hp) to be storage as spare

part to avoid units forced outages and/or load limitations.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

DI# 1229669 Work to Be Completed (WTBC): \$870,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229670 FAASt [AGC Replacement Project Costa Sur Units 5 and 6]

AGC Replacement Project Costa Sur Units 5 and 6

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

In the electrical grid, one of the most important issues is the frequency control. The generating units should be able to change loads to keep the frequency in a proper level (60HZ). Also, the generating units should be loaded in accord of an economic dispatch program. Thus, a controller located in Monacillos send a signal through SCADA to all the plants to position the units at the required load. The AGC of units 5 & 6 were installed in 1973 and their spare parts are no longer available. Currently, the AGC of unit 5 is not in service and the AGC of unit 6 works intermittently.

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for Costa Sur 5 & 6 units AGC Replacement Project Costa Sur will

consist of the following:

-The scope of this project is to purchase and install two AGC's for a proper load regulation of units 5 & 6. The systems will be installed by August 2022.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-Material: \$320,000.00

-Labor: \$80,000.00

DI# 1229670 Work to Be Completed (WTBC): \$400,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229671 FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6]

Natural Gas Igniters for Costa Sur Units 5 and 6

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Two main components of a boiler's combustion system are burners and igniters. The existing igniters of boilers 5 and 6 are the originals of the units and are obsolete. They were not designed for the burning of natural gas. To ensure ignition reliability they must be compatible with burners that were designed and manufactured by the same company.

In recent years there have been problems with its replacement parts, in ignition, and in 2018 several electronic cards of this system broke down when replacing the UPS (Uninterruptible Power System) of the units. To this end, it is intended to replace the existing system with a stateof-the-art system designed by John Zink (COEN) and integrate it into the existing Foxboro burner control system (BMS Foxboro), which was modified for conversion to natural gas.

Given the unreliability of the existing ignition system, it is necessary to replace them with one that has the updated technology and that is compatible with the installed burners. In this case, to operate the units reliably, safety and efficiently the igniters must be designed and manufactured by the same company that did the engineering and studies to manufacture and supply the burners to natural gas, as part of the conversion of boilers 5 and 6.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The following is the proposed scope of work for the Natural Gas Igniters for Costa Sur Units 5 and 6 (total quantities for two boilers):

- 40* local gas trains for igniters, each including manual isolation valve, pneumatically

actuated automatic double-block safety vent valve, assembled as piping spool with

factory-wired junction box.

- 40* sidewall horn igniters, natural gas, 12mmBtu/hr each, including stationary highenergy

spark system with replaceable spark tip, spark cable and spark exciter.

- 40* flexible metal hoses for gas igniters.
- 40* UV/IR flame scanners with cable and power supply.
- 1 BMS narrative operating sequence. Does not include BMS logic diagrams.
- Engineering evaluation of igniter and scanner air fans for capacity.
- On-site technical field advisory services, including guidance during construction,

start-up, combustion tuning, and commissioning, are offered on per diem basis.

*(24 each Unit 5 and 16 each Unit 6)

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

-Materials: \$1,970,000.00

-Labor: \$394,000.00

Dl# 1229671 Work to Be Completed (WTBC): \$2,364,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229672 FAASt [Travelling Screens Replacement, Costa Sur Power Plant - Units 5 and 6]

Travelling Screens Replacement

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The travelling screen is the secondary filtering equipment of the Condenser Circulating Water Pump (CCWP). This pump delivers sea water to the condenser to cool down the steam from the turbine to be reused in the thermodynamic cycle. For a full load unit operation, two CCWPs are required. The loss of a pump will limit the unit from 50MW to 100 MW depending of the condenser's cleanness factor. The actual travelling screens are not in a good condition since their parts and the main frame exhibit wear due to operation beyond the useful years.

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Facilities

Name: Costa Sur Power Plant

Project Scope of Work

The scope of work for the Travelling Screens Replacement of Costa Sur Power Plant units 5 and 6 will consist of the following:

• Removal and replacement of five (5) galvanized steel Travelling Screens, with its

auxiliary equipment of the Power Plant's sea water intake for the cooling of units 5

and 6 condensers.

. The work shall include an infrastructure to protect the fish and other marine life, in

compliance with Section 316 (b) of the Clean Water Act.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-Purchase and Delivery (5 x \$800K/ea): \$4,000,000.00

-Installation and Labor (5 x \$200K/ea) : \$1,000,000.00

Dl# 1229672 Work to Be Completed (WTBC): \$5,000,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229673

FAASt [Procurement and Replacement of Regular Valves for Boiler Feed Water Units 5 and 6]

Travelling Screens Replacement

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto

Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The Regulator Valves of Units 5 and 6 of the Central Costa Sur (Reguladora Grande de Alimentación) require periodic maintenance to maintain reliable generation. The operation of this valve is of utmost importance since it controls the level of the boiler so that it can produce steam and use that energy to move the turbine and generator. Because the current regulator is virtually obsolete, response parts have doubled in price in recent years, as has delivery time.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The boiler is one of the main components in a Rankine Cycle. This equipment is where the steam is generated to drive the turbine and the electrical generator. Its steam storage capacity allows the generator to respond to load changes of the electrical grid. Thus, the boiler generates up to 2,600,000 k#/hr. of steam at 2400 psig and 1000°F to provide 410MW to the system. The water to feed the boiler is controlled by a butt weld regulator that reduces the pressure from 3900 psig to 2500 psig allowing a smooth operation at the different loads. This regulator is often inspected and their major components are replaced since the main body presents wear due to exceedance of use beyond its useful life (installed in 1973). The price of a typical repair is about \$130,000 taking in account both

material and labor.

The scope of this project is to replace the regulators in units 5 & 6 by new ones built with

the latest valves technology and material selection. This will improve the reliability and

availability of the unit to control load and reduce operational cost since a forced outage to

repair it can be avoided.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

2 NEW Fisher OEM Equipment – "Reguladora Grande de Alimentación U5 & U6 Central Costa Sur" (\$150,832 per unit)

1. Fisher Type HPT, CL2500, NPS 8" Control Valve Assembly, WC9, Class V Shut Off, EQ%, BW ends, SCH XXS, Stellite Trim

2. Fisher Type 685 Double Acting actuator, Fail Last, Type 377 Trip Valve for Lock-in-Last, with Side Mounted Handwheel,

3. Fisher FIELDVUE DVC6200 Smart Positioner with PD-Performance Diagnostics, Valve Signature Testing, HART Protocol, Input 4-20 mA, FM Explosion Proof, Linkage-less travel feedback, 4- 20 mA Position Feedback

4. Fisher Signature Testing Level 3 Report

- 5. ASCO 120VAC 4-way solenoid
- 6. Topworx DXP limit switches
- 7. Type 67DFR air filter regulator
- 8. Processing Level 3 testing and certs:
 - a. Hydrostatic test
 - b. Drawings
 - c. C of C Manufacturer Data Report per ASME Sec VIII
 - d. C of C & Trim Material Spec
 - e. Certified Material Test Report (CMRT): Pressure Boundary Parts
- 9. Includes 3-year Performance Diagnostic testing for valve health monitoring and certified report.

10. To replace existing Fisher Type HSV control valves in Costa Sur Units 5 & 6 that have been in operation since 6/1970 and are currently obsolete.

Dl# 1229673 Work to Be Completed (WTBC): \$301,664.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229674 FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant - Unit 6

Low Pressure Water Heater 3 Repair Work

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and

retrofitting works projects is at the top priority list.

Costa Sur Power Plant needs to replace the tubes of the feed water heater #3 of unit 6. The tube replacement is necessary because the heater already has more than 10% of the tubes plugged, and the recommendation of the Heat Exchanger Institute (HEI) is to replace them to avoid further damage of the equipment or the turbine. The heater #3 is directly below the turbine and by design, its extraction pipe does not have an isolating valve, so it cannot be isolated. This repair will ensure the proper operation of the unit without any potential risk of water induction to the turbine.

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the Low Pressure Water Heater 3 of Costa Sur Power Plant unit 6 will consist of the following:

• Replace the tubes of the feed water heater #3 of unit 6, including design, manufacture, delivery and installation.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-Design, Manufacture and Delivery: \$320,000.00

-Installation and Labor: \$80,000.00

DI# 1229674 Work to Be Completed (WTBC): \$400,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229675 FAASt [Procurement of Air-Preheaters Baskets, Unit 5]

Procurement and Delivery of hot and cold section basket and other components of the Air-Preheater of Unit 5 Central Costa Sur

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The Costa Sur unit 5 will have a scheduled departure for a major repair in October 2022. The repair of the air preheaters will improve thermal performance and increase the reliability of the unit. Additionally, this will significantly improve the efficiency, reliability of this unit and decrease emissions to the environment. Unit 5 of Costa Sur generates 410 MW with natural gas, which is a more economical fuel and regulates what gives the island's electrical system greater stability.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the Costa Sur unit 5 hot and cold section basket and other components of the Air Pre-heater:

- Purchase of Basket sets , Air Preheater Hot end
- Purchase of Baskets sets, Air Preheater- Cold end
- Purchase of Axial, Radial, By pass seals and Rotor seals. Purchase of bolts and nuts required for the replacement procedure.
- Removal of old baskets and seals to be replaced
- Installation of new baskets, seals and hardware needed for the completion of the work.
- Crane rental services will be required for the removal and installation process of the baskets and all its components.

- Handling and disposal for the removed equipment, hardware and debris generated during the replacement works.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- -,Purchase and Delivery: \$1,121,459.00
- -,Seals and Bolts Purchase: \$144,624.04
- Labor and Crane rental: \$650,000.00
- Handling and disposal of debris: \$50,000.00

Dl# 1229675 Work to Be Completed (WTBC): \$1,966,083.04

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229677

FAASt [Purchase of Motor for BCWP and CCWP of Units 5 and 6 of Central Costa Sur]

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Units 5 and 6 of the Central Costa Sur use three engines to produce the steam necessary for the generation of electricity. These motors are extremely critical to guarantee the reliability of the operation of our generating units, which each contribute to the 410 MW electrical system. This represents a total of six BCWP engines in continuous service.

Units 5 and 6 of the Central Costa Sur use five motors for the condenser water circulation pump for the electricity generation process. These engines are extremely critical to guarantee the reliability of the operation of our generating units, which each contribute 410 MW to the electrical system. This represents a total of five CCWP motors in continuous duty.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the rehabilitation of Costa Sur Unit 5 & 6

- Purchase and delivery of a 700 Horsepower vertical motor for the Boiler Circulating Water pumps.
- Purchase and delivery of a 1000 horsepower vertical motor for the Condenser Circulating Water pumps.
- Removal and replacement of existing motor with new motor for BCWP
- Removal and replacement of existing motor with new motor for CCWP

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- -, Purchase of Equipment 700 HP Vertical Motor BCWP: \$198,000.00
- -,Installation: \$25,000.00
- Purchase of Equipment 1,000 HP Vertical Motor CCWP: \$612,670.00
- Installation: \$30,000.00

Dl# 1229677 Work to Be Completed (WTBC): \$865,670.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229678 FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine]

Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Costa Sur Unit 5 load center is over 40 years old, obsolete, and the Allis Chalmers manufacturer does not manufacture replacement parts. The replacement of this equipment will significantly increase the reliability of unit 5 and reduce electrical failures in the auxiliary equipment of the turbines.

In addition, for safety reasons for our employees, load center must be replaced with a modern one that minimizes the possibilities of electrical contact and that complies with ARC FLASH regulations.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the rehabilitation of Costa Sur Unit 5 Load center:

- Purchase and delivery of Auxiliary Systems Load center for turbine
- Purchase and delivery of breakers for turbine
- Replace and install new equipment
- Handling and disposal of removed equipment and components.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

-,Purchase of Equipment: \$280,000.00

-,Disposal of Existing Equipment: \$5,000.00

DI# 1229678 Work to Be Completed (WTBC): \$285,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229679 FAASt [Costa Sur Power Plant - Units 5 and 6 Excitation System Upgrade]

Excitation System Upgrade

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Costa Sur units 5 and 6 are in need of an upgrade to their Static Excitation System, since after 23 years in the Plant they are completely obsolete. In case of an emergency, there are no new parts to be purchased and all the spare parts have been used, including units 3 and 4 Excitation System. In addition, one Excitation Power Transformer for both units is needed, since there is no spare one in the Plant. It is important to upgrade these Static Excitation Systems of the Steam Turbine Generators, since units 5 and 6 are the ones that regulate load and frequency in the electrical system of PR.

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Facilities

Name: Costa Sur Power Plant

Project Scope of Work

The scope of work for the units 5 & 6 Static Excitation System upgrade in Costa Sur Power Plant will consist of the following:

A. Design, manufacturing, supply, erection, testing and commissioning of Automatic Excitation Systems for units 5 and 6 in Costa Sur Power Plant.

B. Model Cutler-Hammer WDR2000 will be upgraded to Model DECS-2100 in both Costa Sur units 5 and 6.

C. Manufacture and delivery of one (1) Full Forcing Rectifier Duty Rated Excitation Power Transformer.

D. Basler will be in charge of the Excitation Control equipment and installation, and Engineering Services International Inc. will supply and install bus taps, bus runs, power cables and control wires, to and from the Excitation Control equipment.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Unit 5 - full scope of Static Excitation System upgrade, including and Excitation Power Transformer: \$1,564,397.00

- Unit 6 - full scope of Static Excitation System: \$1,196,537.00

DI# 1229679 Work to Be Completed (WTBC): \$2,760,934.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229680 FAASt [4160V Electric Cable, Costa Sur Power Plant - Unit 5]

4160V Electric Cable, Costa Sur Power Plant - Unit 5

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Costa Sur Power Plant wants to acquire 6000 ft. of special construction electrical cable, toreplace the cables of the Normal Service Station Transformers (NSST) 5A and 5B of unit 5. The NSST provide electrical power to all the auxiliary equipment of the generating unit. These step-down transformers supply 4160v to the switchgears by using three (3) underground cables for a total of

nine (9) cables (1500Kcmil Insulation XLPE 5kv). The cables haven'been change since their original installation in the 1970ths so the expected useful life is overdue. In addition, the cables are full of residual oil from the transformers, which deteriorates the insulation of the cables. An electrical failure could cause a catastrophic fire, so the replacement will bring reliability to the unit for a long term period. In 2017 the cables of NSST 6B were changed after a failure of two of them, and in 2020 the ones of the NSST6A were replaced too. In both NSSTs, the cable's insulation was in bad condition.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the 4160V Electrical Cable for Costa Sur Power Plant unit 5 will consist of the following:

- Acquisition, delivery and installation of 6000 ft. of special construction electrical cable (1500Kcmil Insulation XLPE 5kv).
- The delivery time is about 4 months for the cables, and the installation time is 6 weeks.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Acquisition and delivery: \$275,000.00
- Installation (Labor): \$100,00.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229681 FAASt [Costa Sur Power Plant Unit 5 HP IP LP Turbine Rotor Replacement]

HP IP LP Turbine Rotor Replacement

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

A steam path audit is a physical inspection of the turbine steampath, conducted while the rotor is on the half-shell. The purpose is to identify and quantify performance problems due to the deterioration of steampath components. Engineers and maintenance personnel use the results of audits to identify the most cost-effective repairs and to justify repair recommendations.

This project is necessary and relevant because during the steampath audit or inspection the return to service performance of the machine can be predicted, also following repairs. Data taken during a steampath audit can also help to:

- Measure the efficiency effects of deposits
- Assess recoverable leakage losses following repairs
- · Determine losses due to surface roughness changes
- Provide quantifiable data for the review repair recommendations
- Evaluate the effects of solid particle erosion
- · Calculate losses associated with foreign object damage
- · Integrate decisions with alignment recommendations
- Provide historical records for future outages

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

The scope of this project is mainly to inspect and refurbish the spare turbine rotors and their stationary parts (diaphragms), previously removed from unit 6 in 2020 after 10 years of use, in order to install them in the turbine of unit 5 during the programmed outage on October 2022.

The project will cover HP/IP rotor, LPA rotor and the LPB rotor that was damaged on August 22, 2021. The rotor's inspections will be performed in the United States and a recommendation report will be submitted for PREPA's staff evaluation. After the evaluation of the recommendations and the proper procurement procedure, a refurbish process of about 4 months will be initiated. The refurbishing process will include a high-speed balance of the three rotors. The rotors and diaphragms will be shipped to the plant and properly stored at the facility.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- MD&A Parts: \$773,150.00
- Return Shipping Estimate: \$213,525.00
- Buckets and Hardware (18 stages): \$2,069,851.00
- HPIP Repairs Rotor & Diaphragm (based on Inspection & Recomm.): \$1,530,196.00
- LPA Repairs Rotor & Diaphragm (based on Inspection & Recomm.): \$573,985.00
- LPB Repairs Rotor & Diaphragm (based on Inspection & Recomm.): \$741,515

-Installation and Commissioning: \$3,486,266.00

DI# 1229681 Work to Be Completed (WTBC): \$9,388,488.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229682

FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs]

Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Currently, unit 5 of the Central de Costa Sur has a limitation in the production of energy of 350 MW due to a high-pressure differential in the combustion air of the boiler. This is because the air preheaters are in poor condition from a long time of use. For this reason, we need to change the seals and the baskets. Unit 5 of Costa Sur generates 410 MW with natural gas, which is a more economical fuel and regulates what gives the island's electrical system greater stability.

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the replacement and repairs of Unit 5 boiler sections consist on the

following:

During the programmed outage of unit 5 (October 2022), the boiler's main components and the

associated auxiliary equipment will be inspected and repaired. The scope of work includes

the procurement of services and materials purchase for the following tasks:

- o Hydrostatic testing
- o Internal chemical cleaning
- o External Boiler Wash
- o Soot blower
- o Burners Repair Works

- o Repair of control valves
- o Nondestructive testing of high energy piping
- o Hanger's inspections
- o Fuel lines repairs
- o Boiler assessment
- o Forced Air Draft fans repairs
- o Induced Draft fan repairs
- o Boiler Circulating Water Pumps repairs
- o Ducts repair
- o Insulation works to be performed
- o Scaffolds installation for repairs
- o Repair of motorized and manual line valves
- o Miscellaneous equipment repair

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Hydrostatic testing: \$300,000.00
- Internal chemical washing: \$450,000.00
- External Boiler wash: \$750,000.00
- Soot Blower: \$600,000.00
- Burners repair works: \$750,000.00
- Repair of control valves: \$600,000.00
- Nondestructive testing of high energy piping: \$500,000.00
- Hangers repairs: \$300,000.00
- Fuel Lines repairs: \$350,000.00
- Boiler assessments: \$500,000.00
- Forced Air Draft fans repairs: \$250,000.00
- Induced Draft Fan repairs: \$250,000.00
- Boiler Circulating Water Pumps: \$300,000.00

- Ducts repairs: \$750,000.00
- Insulation works: \$750,000.00
- Scaffolds: \$800,000.00
- Repairs of motorized and manual line valves: \$300,000.00
- Miscellaneous equipment repair: \$600,000.00

Dl# 1229682 Work to Be Completed (WTBC): \$9,000,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229683 FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant - Unit 5]

Water Heater 6 Replacement Work, Costa Sur Power Plant - Unit 5

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

Costa Sur Power Plant needs to replace the feedwater heater #6 of unit 5. The replacement is necessary because the heater already has more than 10% of the tubes plugged, and the recommendation of the Heat Exchanger Institute (HEI) is to replace them to avoid further damage of the equipment or the turbine. In a thermodynamic process, the feedwater heat exchanger improves the efficiency of the unit. The heat exchanger uses steam extracted from the turbine to increase the feedwater temperature. This reduces the heat input required in the boiler to generate steam at proper conditions.

Introduction

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the Water Heater 6 Replacement Work in Costa Sur Power Plant unit

5 will consist of the following:

• Design, manufacture, delivery and unload one (1) new High Pressure Feedwater

Heater 6.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Design, manufactor, delivery and unload: \$2,000,000.00

Dl# 1229683 Work to Be Completed (WTBC): \$2,000,000.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229684 FAASt [Costa Sur Power Plant Unit 6 - HP/IP/LP Repairs (Failure)]

Costa Sur Power Plant Unit 6 - HP/IP/LP Repairs (Failure)

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The power plant economic performance is not only driven by it's thermal efficiency, but also by its assets availability and reliability. Major programmed outages are scheduled following the guidelines provided by the original equipment manufacturer in order to fully evaluate such assets. The main objective of this project is to perform a detailed inspection of the Unit 6 - HP/IP/LP turbines, which were removed after an outage on October 2020. Such project is important in order to prevent a catastrophic failure and service interruptions.

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Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of this project is to fully repair the turbine LPB rotor (Lower Pressure Turbine Rotor Segment B) and their stationary parts (diaphragms) that were removed from unit 6 on the outage of October 2020. The repairs will include nondestructive tests. The rotor and diaphragms will be shipped from the plant to a shop in EUA. After the inspection, a report with the repair recommendations will be generated to be evaluated by PREPA. Neither the repair nor installation costs are part of the scope of this project. Regarding the HP/IP and LPA rotors, they will be inspected on site by PREPA personnel since no damage was experienced on them. Thrust bearing inspection, oil flushing, boroscopic inspection and bump check procedure will be performed on these rotors to ensure proper operation.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

I. G2 components (HPIP Spare, LPA Spare, LPB Damage in Service)

- Rotor & Diaphragm Inspection: \$391,960.50
- Perform PAUT of HPIP, LP and LPB rotor (3 rotors): \$28,710.00
- Transportation: \$375,280.00

II. Spare LPB rotor and diaphragms Inspection (4th set)

- Rotor and Diaphragm Inspection: \$124,050.00
- Perform PAUT LPB rotor (1 rotor): \$9,570.00
- Transportation: Roundtrip shipping of LPB rotor on Prepa shipping skid: \$74,800.00
- Transportation: Roundtrip shipping of LPB diaphragms (up to 2 truckload each way): \$56,160.00

Dl# 1229684 Work to Be Completed (WTBC): \$1,060,530.50

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229685 FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle]

Repairs Inner Barrel Bundle

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

At the moment there's no Boiler Feed Water Pump package for Costa Sur Power Plant, which presents an operational availability and reliability problem, because this type of equipment takes more than a year to be designed, manufactured and delivered. Since this is an essential equipment needed for an efficient operation of the generation units, an order to the sole manufacturer Siemens Power Generation Service is very important.

Introduction

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

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. Additional details may be found in Sections 3 and 4, respectively.

Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the acquisition of one (1) Boiler Feed Water Pump Inner Assembly

Barrel for Costa Sur Power Plant will consist of the following:

- Contractor shall design, drafting, manufacture and delivery one (1) Inner Barrel Assembly for the 9BB pump of unit 5 or 6 at Costa Sur Power Plant.

- Manufacture includes: shaft, impellers, rings, bushings, inlet guide, diffusers, diaphragms, and miscellaneous barrel assembly hardware.

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Manufacture and Delivery: \$1,625,954.00

Dl# 1229685 Work to Be Completed (WTBC): \$1,625,954.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

1229686 FAASt [Costa Sur Power Plant Permanent Repairs]

Costa Sur Power Plant Repairs

Work to be Completed

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

After a forced shut down of Costa Sur Power Plant Unit 6 due to high vibrations reflected on bearings 4 and 5 during an electrical disturbance on transmission line 38900, a visual inspection of the turbine detected broken diaphragms, shroud bands, and buckets of stages L- 1 and L-2 of low pressure rotor B (LPB) turbine and generator end.

Introduction

The purpose of this document is to present and update a Project Scope of Work (SOW) with Cost Estimates to be submitted to COR3 and FEMA for projects under DR-4339-PR Public Assistance. The completed document will be reviewed by COR3 and FEMA to create and version a specific project worksheet and post fixed-cost estimates to repair, restore, or replace eligible facilities including Section 406 hazard mitigation
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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. Additional details may be found in Sections 3 and 4, respectively.

Facilities

Name: Costa Sur Power Plant

GPS Location:

Project Scope of Work

The scope of work for the spare LPB turbine rotor B repairs and reassembly of Costa Sur unit 6 will consist of the following:

- Reassembly of Thrust bearing, Generator H2 seals, installation of LPA Hood, spare LPB and crossovers.
- Line Boring.
- Bearings and Seals Inspections.
- Spare LPB Rotor and Diaphragm Repairs.
- Supply and installation of Conventional Packing Rings, Strips and its hardware.
- Vortex Shredder Tip Seals, as an option

Cost Estimate

The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

Cost Type:

- Repairs and Reassembly: \$2,076,415.00

DI# 1229686 Work to Be Completed (WTBC): \$2,076,415.00

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. This Project is part of PREPA Immediate Works request for Generation Units.

Cost

Code	Quantity	Unit	Total Cost	Section
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$400,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$445,000.00	Uncompleted
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$715,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt Project 136271))	1.00	Lump Sum	\$870,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9007 (Labor (FAASt project 136271))	1.00	Lump Sum	\$80,000.00	Uncompleted
9009 (Material (FAASt project 136271))	1.00	Lump Sum	\$320,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9007 (Labor (FAASt project 136271))	1.00	Lump Sum	\$394,000.00	Uncompleted
9009 (Material (FAASt project 136271))	1.00	Lump Sum	\$1,970,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$5,000,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$301,664.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$400,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$1,966,083.04	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$865,670.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$285,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$2,760,934.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$375,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$9,388,488.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$9,000,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$2,000,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$1,060,530.50	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed

9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$1,625,954.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$2,076,415.00	Uncompleted

CRC Gross Cost	\$42,299,738.54
Total 406 HMP Cost	\$0.00
Total Insurance Reductions	\$0.00
CRC Net Cost	\$42,299,738.54
Federal Share (90.00%)	\$38,069,764.69

Non-Federal Share (10.00%) \$4,229,973.85

Award Information

Version Information

Version	Eligibility	Current	Bundle Number	Project	Cost	Federal Share	Date
#	Status	Location		Amount	Share	Obligated	Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW- 10702(12316)	\$42,299,738.54	90 %	\$38,069,764.69	8/23/2022

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount		
No Records						

Obligation History

Version # Date Obligated Obligated Cost Cost Share IFMIS Status IFMIS Obligation #	ation #	IFMIS Obliga	IFMIS Status	Cost Share	Obligated Cost	Date Obligated	Version #
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Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

5/27/2022

GENERAL INFORMATION

Event: DR4339-PR Project: SP 672950 Category of Work: Cat F - Utilities Applicant: PR Electric Power Authority Event Type: Hurricane / Hurricane Maria Cause of Loss: Wind / Wind Driven Rain Incident Period: 9/17/2017 to 11/15/2017 Total Public Assistance Amount: Repairs Amount \$42,299,738.54

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: <u>Willis Towers Watson</u> (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

<u>Multinational Insurance Company</u> (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (19)

Damaged Inventory (DI) #1229667:

FAASt [Procurement of Water Heater 5 (Deaerator) Pump]

Location Description: Water Heater 5 (Deaerator) Spare Pump Costa Sur Power Plant

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$400,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility._

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement of Water Heater 5 (Deaerator) Pump] in the amount of \$400,000.00.

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Damaged Inventory (DI) #1229668:

FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6]

Location Description: Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6

GPS Coordinates: Start

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$1,160,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project #

136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "*PREPA Allocation Plan – All Disasters*" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6] in the amount of \$1,160,000.00. _

Damaged Inventory (DI) #1229669:

FAASt [Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6]

Location Description: Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6

GPS Coordinates: Start

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$870,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file._

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6] in the amount of \$870,000.00.

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Damaged Inventory (DI) #1229670:

FAASt [AGC Replacement Project Costa Sur Unit 5 & 6]

Location Description: AGC Replacement Costa Sur Unit 5 & 6

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$400,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [AGC Replacement Project Costa Sur Unit 5 & 6] in the amount of \$400,000.00. _

Damaged Inventory (DI) #1229671:

FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6]

Location Description: Natural Gas Igniters for Costa Sur Units 5 and 6

GPS Coordinates: Start

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$2,364,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6] in the amount of \$2,364,000.00.

Damaged Inventory (DI) #1229672:

FAASt [Travelling Screens Replacement, Costa Sur Power Plant – Units 5 & 6]

Location Description: Travelling Screens Replacement, Costa Sur Power Plant - Units 5 & 6

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$5,000,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Travelling Screens Replacement, Costa Sur Power Plant – Units 5 & 6] in the amount of \$5,000,000.00._

Damaged Inventory (DI) #1229673:

FAASt [Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6]

Location Description: Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$301,664.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6] in the amount of \$301,664.00.

Damaged Inventory (DI) #1229674:

FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant – Unit 6]

Location Description: Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant - Unit 6

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$400,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant – Unit 6] in the amount of \$400,000.00.

Damaged Inventory (DI) #1229675:

FAASt [Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central Costa Sur]

Location Description: Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central

Costa Sur

GPS Coordinates: Cause of Loss: Wind / Wind Driven Rain SOV / Schedule #: "Costa Sur Steam Plant" SOV / Schedule Amount: \$1,350,000,000.00 Applicable Deductible Amount: \$25,000,000.00 Damage Inventory Amount: Repairs Amount \$1,966,083.04

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central Costa Sur] in the amount of \$1,966,083.04.

Damaged Inventory (DI) #1229677:

FAASt [Purchase of motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur]

Location Description: motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur

GPS Coordinates: Start

end

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$865,670.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Purchase of motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur] in the amount of \$865,670.00.

Damaged Inventory (DI) #1229678:

FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine]

Location Description: Load Center 5 - 2 in Unit 5 Turbine

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$285,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine] in the amount of \$285,000.00.

Damaged Inventory (DI) #1229679:

FAASt [Costa Sur Power Plant - Units 5 & 6 Excitation System Upgrade]

Location Description: Units 5 & 6 Excitation System Upgrade

GPS Coordinates: Start

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule # "Costa Sur Steam Plant"

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SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$2,760,934.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant - Units 5 & 6 Excitation System Upgrade] in the amount of \$2,760,934.00.

Damaged Inventory (DI) #1229680:

FAASt [4160V Electric Cable, Costa Sur Power Plant – Unit 5]

Location Description: 4160V Electric Cable, Costa Sur Power Plant - Unit 5

GPS Coordinates: Start

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$375,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAASt [4160V Flectric Cable. Costa Sur Power Plant – Unit 5] because facility

does not meet the definition of building, equipment, contents, or vehicle.

Damaged Inventory (DI) #1229681:

FAASt [Costa Sur Power Plant Unit 5 - HP IP LP Turbine Rotor Replacement]

Location Description: Unit 5 - HP IP LP Turbine Rotor Replacement

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$9,388,488.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Unit 5 - HP IP LP Turbine Rotor Replacement] in the amount of \$9,388,488.00.

Damaged Inventory (DI) #1229682:

FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs]

Location Description: Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$9,000,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

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No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs] in the amount of \$9,000,000.00.

Damaged Inventory (DI) #1229683:

FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant – Unit 5]

Location Description: Water Heater 6 Replacement Work, Costa Sur Power Plant - Unit 5

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$2,000,000.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant – Unit 5] in the amount of \$2,000,000.00.

Damaged Inventory (DI) #1229684:

FAASt [Costa Sur Power Plant Unit 6 – HP/IP/LP Repairs (Failure)]

Location Description: Unit 6 – HP/IP/LP Repairs (Failure) 11/29/

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$1,060,530.50

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Unit 6 – HP/IP/LP Repairs (Failure)] in the amount of \$1,060,530.50.

Damaged Inventory (DI) #1229685:

FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle]

Location Description: Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$1,625,954.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

Date Downloaded: 9/26/22 2:39pm AST

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters" file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle] in the amount of \$1,625,954.00._

Damaged Inventory (DI) #1229686:

FAASt [Costa Sur Power Plant Permanent Repairs]

Location Description: DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Costa Sur Steam Plant"

SOV / Schedule Amount: \$1,350,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: Repairs Amount \$2,076,415.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility._

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Permanent Repairs] in the amount of \$2,076,415.00.

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Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., "retained risk").

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed \$5,000.00. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains

the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

- 1. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or
- 2. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement of Water Heater 5 (Deaerator) Pump] in the amount of \$400,000.00.	\$400,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement of Induced Draft Fan (IDF) and Forced Draft Fan (FDF) Motors for Units 5 and 6] in the amount of \$1,160,000.00.	\$1,160,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Condensate Pump (CP) Motor, Costa Sur Power Plant - units 5 & 6] in the amount of \$870,000.00.	\$870,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [AGC Replacement Project Costa Sur Unit 5 & 6] in the amount of \$400,000.00.	\$400,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Natural Gas Igniters for Costa Sur Units 5 and 6] in the amount of \$2,364,000.00.	\$2,364,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Travelling Screens Replacement, Costa Sur Power Plant – Units 5 & 6] in the amount of \$5,000,000.00.	\$5,000,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement and Replacement of Regulator Valves for Boiler Feed Water Units 5 & 6] in the amount of \$301,664.00.	\$301,664.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Low Pressure Water Heater 3 Repair Work, Costa Sur Power Plant – Unit 6] in the amount of \$400,000.00.	\$400,000.00

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Procurement and delivery of hot and cold section basket and other components of the Air Pre-heater of unit 5 Central Costa Sur] in the amount of \$1,966,083.04.	\$1,966,083.04
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Purchase of motor for BCWP and CCWP of units 5 and 6 of Central Costa Sur] in the amount of \$865,670.00.	\$865,670.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Purchase and installation of Load Center 5 - 2 in Unit 5 Turbine] in the amount of \$285,000.00.	\$285,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant - Units 5 & 6 Excitation System Upgrade] in the amount of \$2,760,934.00.	\$2,760,934.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Unit 5 - HP IP LP Turbine Rotor Replacement] in the amount of \$9,388,488.00.	\$9,388,488.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Unit 5 Boiler Sections Replacement, Repairs & Auxiliary Equipment Repairs] in the amount of \$9,000,000.00.	\$9,000,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Water Heater 6 Replacement Work, Costa Sur Power Plant – Unit 5] in the amount of \$2,000,000.00.	\$2,000,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Unit 6 – HP/IP/LP Repairs (Failure)] in the amount of \$1,060,530.50.	\$1,060,530.50
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Costa Sur Power Plant Permanent Repairs Inner Barrel Bundle] in the amount of \$1,625,954.00.	\$1,625,954.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [Costa Sur Power Plant Permanent Repairs] in the amount of \$2,076,415.00.	\$2,076,415.00

406 Mitigation

There is no additional mitigation information on FAASt [Costa Sur Power Plant Permanent Repairs CS-001] (Generation).

Environmental Historical Preservation



EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 Floodplains Applicant must obtain any required permits from the Planning Board prior to initiating work and comply with any conditions of the permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Clean Water Act (CWA) The Applicant is responsible for coordinating with and obtaining any required Section 404
 permit(s) from the United States Army Corps of Engineers (USACE) and 401 permit(s) from the appropriate state agency
 prior to initiating work. The Applicant shall comply with all conditions and pre- construction notification requirements of the
 required permit(s). Any coordination (emails, letters, documented calls) pertaining to these compliance activities must be
 documented and maintained in the Applicant's permanent files.
- Endangered Species Act (ESA) The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- Endangered Species Act (ESA) USFWS Required Conservation Measures for Trichechus manatus: 1. The contractor shall instruct all personnel associated with construction of the presence of manatees and the need to avoid collisions with manatees for in-water projects (including dredging). All construction personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972. Applicants and contractors shall refer to the following for procedural manatee guidance for implementing this measure: [http://myfwc.com/wildlifehabitats/managed/manatee/watch-program/]; [https://www.youtube.com/watch?v=Xs7zLRtZVOQ] 2. The project work area shall be visually inspected for the presence of manatees at least one hour before any construction starts and prior to the installation of any silt fencing. If manatees are found before any in-water project activity starts, the contractor shall wait for the manatee(s) to leave the area without provocation and be at least 100 feet from the project in-water area. Manatees must not be herded or harassed into leaving the area. If manatees are seen within100 yards (300 feet) of the in-water work area, all equipment must be operated in such a manner that moving it does not come any closer than 100 feet of any manatee. Applicants and contractors shall refer to the following for procedural manatee guidance for implementing this measure:

[http://myfwc.com/wildlifehabitats/managed/manatee/watch-prog] 3. Siltation barriers will be made of material in which manatee cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat. In-water barriers must comply with USACE permit conditions when required. Applicants and contractors shall refer to the following for procedural manatee guidance for implementing this measure: [http://myfwc.com/wildlifehabitats/managed/manatee/watch-program/];

[https://www.youtube.com/watch?v=Xs7zLRtZVOQ] 4. All vessels associated with the project construction will operate at "no-wake/idle" speed at all times while in water within manatee areas and vessels will follow routes of deep water whenever possible. 5. The contractor shall keep a log detailing sightings, collisions, or injury to manatees which have occurred during the contract period. Following project completion, a report summarizing the above incidents and sightings will be submitted to Marelisa Rivera, Deputy Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622. Any collision with and/or injury to a manatee shall be reported immediately to the Puerto Rico DNER and the USFWS Caribbean Ecological Services Field Office (787-851-7297;

marelisa_rivera@fws.gov). 6. The permit holder and/or contractor shall install and maintain temporary and permanent manatee signs as recommended by USFWS. Signs must be placed in a prominent location for maximum visibility. Areas that are recommended include: dock walkways, dock master offices, near restrooms or other high patron foot traffic areas. Signs must be replaced when faded, damaged or outdated. If the facility is large or has multiple docks with separate walkways that are a considerable distance apart, multiple signs should be installed. These signs must not face the water, must never be attached to pilings or navigational markers in the water. Some exceptions to signs facing the water exist for temporary signs during in-water work. 7. For durability, all signs should be fiberglass, PVC, or metal with rounded corners (hand sanded to remove all sharp edges and burrs), constructed of 0.08 Gauge 5052-H38 Aluminum with an Alodine 1200 conversion coating and Engineer Grade Type I reflective sheeting. Signs constructed to other specifications may not provide durability acceptable to the consumer. Permit holder may create their own signs, but should be approved by USFWS. For a copy of ready-to-print signs go to:https://www.fws.gov/caribbean/es/documents/ManateeSigns_Letreros.pdf. Applicants and contractors shall refer to the following for procedural manatee guidance for implementing this measure:

[http://myfwc.com/wildlifehabitats/managed/manatee/watch-program/]; [https://www.youtube.com/watch?v=Xs7zLRtZVOQ]

- Magnuson-Stevens Fishery Conservation and Management Act (MSA) Conservation Measures and Best Management Practices proposed by the Applicant: 1. Contractor's equipment must be in good working conditions. Equipment with broken or defective parts or oil leaks will not be allowed on site. 2. Documentation of materials brought on site by the contractor. Contractor must identify materials and amounts in their bid documents. Also, contractor must remove all unused material from the site at the completion of the project. 3. All works activities require a permit from the area supervisor. 4. All non-soil solids liquids will be contained in an impermeable container. Under no circumstances will non storm water liquids be discharged directly to soil. This includes drainage of process lines prior to repair. 5. Substances used for cleaning will be collected and disposed of properly. To the extent possible, cleaning will be done in the site maintenance shops or at offsite facilities. 6. Adequate containment will be provided for solid and liquid materials that have the potential to be release on the ground. Unless being transported, non-empty drums and containers must be stored within existing containment or in temporary containment provided by the contractor. 7. Exposure of maintenance materials (oils, paints, detergents, etc.) must be minimized to the extent practical during the maintenance activity. At the end of a working day, exposure of accumulated materials must be minimized and covered appropriately. 8. If a work activity is interrupted prior to completion for a period greater than 24 hours, the area must be cleaned, and exposure of materials must be eliminated within 24 hours of the interruption. 9. At completion of the task, the area where works were performed will be inspected by the Contractor Crew Supervisor to ensure that the area has been adequately cleaned within 24 hours of the completion of the work (a longer time is allowed for larger, project, upon approval of the NPDES Environmental Compliance Supervisor). Evidence of spilled materials will be reported to the PREPA's Supervisor Engineers & Environmental Compliance Personnel. 10. The Contractor Crew Supervisor has the responsibility to ensure the integrity of storage containers and containment structures for solids and liquids that are generated during the work activities. He also must ensure that materials are being stored in containers of appropriate materials of construction. 11. For new construction, erosion from excavations must be minimized with proper grading, use of silt fences or hay bales, and other such means (If apply). At the end of construction, all construction materials and debris must be removed from the site. If construction is interrupted for an extended period, then the area must be cleaned, and exposure of materials eliminated within 24 hours of the interruption. 12. To prevent oils and lubricants spills gain access to water stream, all machinery will be subject to inspection daily. These will be temporarily stored in the designated areas for proper final disposal or for recycling purpose. 13. For the travelling screens chamber or vault works timber stoplogs will be installed to isolate each screen bay for dewatering and to perform associated repairs. 14. To delay the process of oxidation and wear of the equipment's, a passive cathodic protection system will be installed for the proposed traveling screen system, 15. It is proposed to use the hydraulic suction method to remove the accumulated sediments inside the chamber or vault. The sediment will pass through a flexible pipe tube with a pumping system towards a geotextile tube that will be in a metal container within the Power Plant's premises. The hardened water will drain into the same vault where the material removal activity will take place. The resulting sediment will be disposed of in a landfill authorized by the Environmental Quality Board. Prior to sediment disposal, a Full RCRA chemical analysis will be performed.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) 1. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

EHP Additional Info

There is no additional environmental historical preservation on FAASt [Costa Sur Power Plant Permanent Repairs CS-001] (Generation).

Final Reviews

Final Review

Reviewed By MARTINEZ SANTIAGO, ISRAEL

Reviewed On 08/12/2022 12:44 PM AST

Review Comments

FEMA Final Review completed. Project ready for Recipient Final review.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 08/12/2022 1:14 PM AST

Review Comments

Recipient review completed. Project is ready for applicant review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$42,299,738.54 for subaward number 10702 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Nieves, Ezequiel

Signed On 08/18/2022

Attachment D

(Unredacted version submitted underseal)

Department of Homeland Security Federal Emergency Management Agency

General Info

669233 P/W # 10568	Project Type	Specialized	
F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-	
FAASt Aguirre Power Plant 002 Units 1 &		00)	
2 Projects (Generation)	Event	4339DR-PR (4339DR)	
Large	Declaration Date	9/20/2017	
9/20/2027	Incident Start Date	9/17/2017	
	Incident End Date	11/15/2017	
Pending DIU EMMIE Final Record Upload			
	669233 P/W # 10568 F - Utilities FAASt Aguirre Power Plant 002 Units 1 & 2 Projects (Generation) Large 9/20/2027 Pending DIU EMMIE Final Record Upload	669233P/W # 10568Project TypeF - UtilitiesApplicantFAASt Aguirre Power Plant 002 Units 1 & 2 Projects (Generation)EventLargeDeclaration Date9/20/2027Incident Start DatePending DIU EMMIE Final Record UploadIncident End Date	

Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

Damage #1222391; FAASt Aguirre Power Plant Condenser Circulationg Water Pump Motor

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Aguirre Power Plant Condenser Circulating Water Pump Motor
- Facility Description: While on service, the circulating water pump motor 1-1 suffered a breakdown in the stator. To ensure reliability of the unit and the availability of maximum electric charge, at least for four water pumps must be on service. Currently, Aguirre does not have a protection motor and the circulating water pump being used is 1-3 / 2-3 in Unit 1. The circulating water pumps supply cooling water flow for condensers in generator units. Water travels through the condenser's pipeline that keep direct connection with the turbogenerator's low stages. The interaction of the steam and the cooling water creates a vacuum effect. The greater the vacuum effect, better efficiency in the condenser water cycle and the heat transfer improves.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1222392; FAASt Aguirre Unit 2 Excitation System Breakers

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

•

General Facility Information:

• Facility Type: Power generation, transmission, and distribution facilities



- Facility: Aguirre Power Plant Unit 2 Excitation System Replacement
- Facility Description: The AGESR Project (Aguirre Excitation System Replacement) has been approved to plan, coordinate and execute the replacement of the excitation system ABB Unitrol D to ABB Unitrol 6000 of the Aguirre unit 2 generator. Mayor repairs are realized by planned inspections. Unexpected downtime of a 450 MW not available for generation, the procurement can cost is 3 times expedite parts procurement because the actual excitation system spare parts and support is not available, and replaced generation with higher fuel cost having a difference of replaced cost @\$60/MWh higher than actual unit generation. By authorizing the AGESR Project, PRE PA seeks to have a reliable generator without limitation on real and reactive power. This project also provides proactive management oversight to help in identifying and mitigating risks before they adversely impact the unit's and electric system operation.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1222396; FAASt Aguirre Steam Power Plant Unit 1 Turbine and Generator Inspection - Rehabilitation and Installation

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

•

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Rehabilitation and Installation of Aguirre Steam Plant Unit 1 Turbine and Generator Inspection
- Facility Description: The power plant economic performance is not only driven by it's thermal efficiency, but also by it's assets availability and reliability. Major programmed outages are scheduled following the guidelines provided by the original equipment manufacturer in order to fully evaluate such assets. The main objective is to perform a detailed inspection, repairs, blades and rotor replacement in order to identify expected wear effects on turbine elements and any possible major deficiency in order to prevent a catastrophic failure and service interruptions, as it happened to Aguirre Unit 2 on November 2015. Caribe GE is the original equipment manufacturer for the Aguirre Steam Power Plant turbo generators. Contracting this company provides PREPA with major assurances of work quality and guarantees given the extent of the works requested. The rehabilitation works is a Turn Key project and onsite where Caribe GE open and closes the steam turbine.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Damage #1222398; FAASt Aguirre Power Station Inner Barrel Bundle

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Inner Barrel Bundle, Aguirre Power Station
- Facility Description: In Aguirre Power Station there's a need of a boiler feed water pump (BFP here after) inner barrel assembly spare. The BFP is an essential equipment required to reliably and efficiently operate both units in Aguirre (1 & 2). Each unit has its own BFP which supplies demineralized water to the boiler's economizer from the deaerator tank. This has the purpose of producing the flow rate and the pressure

increase necessary to maintain proper production of superheated steam to move the turbine, and therefore, to produce power in the generator. At this moment there is no spare BFP's available of any kind. This poses a threat to the availability of the units and, therefore, to the reliability of the electrical power grid system. This type of equipment takes about one year to be designed, fabricated, and delivered. These BFP's are an original design of Siemens Energy and are used by the boiler's manufacturer with specific technical requisites such as: operating temperature, nominal flow, rotational speed, power required, discharge pressure and NPSHR (Net positive suction head required). And above all, the pump's dimensions are compatible with the space available.

- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria
- •

Damage #1229676; FAASt [South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works]

DDD for this facility codified in the 136271 - MEPA078 Puerto Rico Electrical Power Authority Island Wide FAASt Project.

General Facility Information:

- Facility Type: Power generation, transmission, and distribution facilities
- Facility: Aguirre Unit 1 Boiler, Pre heater and condenser
- Facility Description: A technical assessment performed by GE on the Aguirre Plant Unit 1 reported that the boiler of unit 1 has experienced several breaks in the past, specifically in the front wall of the furnace tubes at the burner level, causing forced exits as a consequence or outages. In addition, studies carried out for the useful life section have confirmed that the thicknesses of the front wall tubes have reached the minimum thickness allowed by MWT codes. The GE service report addressed the following concerns in the Aguirre Unit 1 facility: 1. Multiple tube failures in the furnace front waterwall ? From Burner Corner B to the centerline of the furnace and from approximately EL 96' to 53' 2. Multiple tube failures and sagging tubes in the platen superheater assemblies 3. Excessive O2 in the air heater gas outlet ducts 4. Sagging economizer assemblies 5. Deterioration of the gas recirculation fan discharge duct 6. Deterioration of seal boxes for sootblowers, thermoprobes, and observation doors at EL 139'-10? 7. Deterioration of the boiler access door at EL 143'-3? 8. Deterioration of the roof of the left burner connecting duct. 9. Link failure of the constant load support hanger levers for the right burner connecting duct The Unit 1 South Wall Boiler Tubing Replacement and Repairs Project & Unit Air and Gas Duct Pre-Heaters Repair Works are necessary to assure the operation and conditions of the Unit 1 boiler system. The boiler has suffered tube breaks which has caused forced outages of the unit. Air ducts have also suffered damages that has caused air infiltrations, which affects the unit's power efficiency.
- Approx. Year Built: 1967
- GPS Latitude/Longitude:

General Damage Information:

- Date Damaged: 9/20/2017
- Cause of Damage: High winds & wind driven rain, caused by Cat 4 Hurricane Maria

Final Scope

FAASt Aguirre Power Plant Condenser Circulating Water Pump Motor

FAASt Aguirre Power Plant Condenser Circulating Water Pump Motor

Facilities Description

On September 20, 2017 the entire island of Puerto Rico was ravaged by Hurricane Maria, making landfall as high-end category 4 hurricane. As a result of severe winds, wind-driven debris, salt spray, storm surge, mudslides, flooding, and rain, all essential electrical delivery services including power generation were damaged or destroyed, resulting in a complete loss of power and the longest blackout in U.S. history.

Furthermore, PREPA needs to perform constantly works of conservation, repairs, and retrofitting of its generation units and their auxiliary equipment, including, without limitation, boilers, turbines, rotors, generators, motors, pumps, breakers, and control systems. These works are of the utmost importance as it has become more evident by the recent forced outages.

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

While on service, the circulating water pump motor 1-1 suffered a breakdown in the stator. To ensure reliability of the unit and the availability of maximum electric charge, at least f or four water pumps must be on service. Currently, Aguirre does not have a protection motor and the circulating water pump being used is 1-3 / 2-3 in Unit 1.

The circulating water pumps supply cooling water flow far condensers in generator units. Water travels through the condenser's pipeline that keep direct connection with the turbogenerator's low stages. The interaction of the steam and the cooling water creates a vacuum effect. The greater the vacuum effect, better efficiency in the condenser water cycle and the heat transfer improves.

Scope of Work

Scope of Work Description

The scope of work for Aguirre's Power Plant Emergency Purchase Order f or Condenser Circulating Water Pump Motor consist of:

- Purchase and deliver the motor to Aguirre's Power Plant.

Cost estimate

Equipment: \$630,000.00

Work to be Completed Total: \$ 630,000.00

406 Hazard Mitigation Proposal

No feasible Hazard mitigation Proposal (HMP) has been identified for this damage inventory (DI).

Project Notes

1. For SOW and Cost details please refer to document title 669233 DR4339PR PREPA SOW Aguirre 002 Unit 1 & 2 .pdfand document title Aguirre 002 - Amendment.pdf for DI1229676

2. The cost estimate for the work to be completed includes materials, construction labor and equipment, engineering, permitting, management, and contingencies. Cost is based in PREPA historical pricing.

3. For Environmental & Historical Preservation (EHP) requirements, details, and supporting documentation please refer to pages 229 to 246 of the document labeled: **669233 DR4339PR PREPA SOW Aguirre 002 Unit 1 & 2**.pdf and other related EHP documents in GM/GP.

4. Please see below general information and a brief description of the SOW for each additional generation (related) project in the same facility, Aguirre Power Plant, as required by EHP. Including information in DI1222392, DI1222396, DI1222398, and DI1229676 within this project.:

EHP Related Projects

a. Project#-[669498] FAASt [Aguirre Power Plant 001 Infrastructure Projects] (Generation)

D#1222657 FAASt [Rehabilitation of Liner Dams Fuel Reserve Tanks Aguirre Generatrix Complex]

The scope of work consists of:

- 1. Removal and disposal of the HDPE-Liner type coating.
- 2. Surface preparation by filling with select soil material.
- 3. Installation of covering material type HDPE Liner.
- 4. Application of intrusion welding.
- 5. Tests of the installed material.

<u>D# 1222658 FAASt [Aguirre Steam Plant – Procurement and Delivery of Two Re-Build (Remanufactured) Discharge Condenser</u> Water Pump Motor]

The scope of work will consist of:

Manufacture, test, and delivery of two 400 Hp-395 RPM, 4,0000 Volts-3 Phase, 60 Cycle Re-build Motors for the water discharge condenser pumps for the sea water canal discharge system to the Aguirre Steam Plant.

D#1222660-FAASt [Aguirre Steam Plant - Two New Condenser Discharge Water Pump Motors]

The scope of work consists of:

Delivery and Installation of two motors associated to the discharge water pumps for Aguirre's Steam Plant. Motors will include space heaters and winding temperature detectors (2) per phase, bearing temperature detectors will be included and the ant rotation lock device must be included.

-Dielectric testing of windings with AWAIV Advanced Winding Analysis System.

-IEEE 112 Test Run.

-Thermographic analysis on magnetic cores for integrity verification.

D#1222661-FAASt [Aguirre Steam Plant Permanent Repairs]

The scope of work consists of:

- Supply the replacement breakers for the Allis Chalmers LA type breakers on 480v Normal Bus.

- Each breaker includes the following:
- (1) A new door and cassette is included
- (2) 520 LSI trip unit or the 520MC LSI (ARMS Capable) and are Mechanically

Operated(M/O)

- Complete turnkey installation services or supervisory services.

b. Project# [669815] FAASt [Aguirre Power Plant 003 Combined Cycle] (Generation)

D# 1222950 FAASt [Stage 2 & 3 Gas Turbine Rotor Bucket Set, Aguirre Combined Cycle Plant]

The scope of work consists of:

-Supply one (1) MS7001 EA stage 2 gas turbine rotor bucket set (refurbished).

-Supply one (1) MS7001 EA stage 3 gas turbine rotor bucket set (refurbished).

D# 1222952 FAASt [New Water Condensate Tank for the Aguirre Combined Cycle]

The general scope of this project will consist of the following:

-Removal of existing steel water condensate storage tank.

-Design and Build of a new 287,000 gallons steel water condensate storage tank, including interior and exterior coating application.

-Instrumentation system for reading water levels and improvements to the existing tank's concrete base.

D# 1222953 FAASt [Aguirre Combined Cycle Major inspection and Repairs Unit 1-3]

The scope of work consists of:

-Repair Turbine Rotor & Buckets

-Supply New Turbine Casing Shrouds

-Repair Turbine Nozzles Stages 1, 2 & 3

-Repair Transition Pieces Set

-New Fuel Oil Pump (Replacement)

D# 1222954 FAASt - [Aguirre Combined Cycle Hot Gas Path Inspection and repairs Work Units 2-4 and stand by transformer]

-Gas Turbine Nozzle stage 1, unit to gas 1-4: inspection of frame 7EA 1st stage nozzle, heavy repair of frame? EA 1st stage nozzle, and supply & install 36 trailing edge coupons on frame 7EA.

-Combustion Liners and Crossfire tubes, units 1 to 3: inspect and repair 3 sets of 10 combustion liner, apply a thermal barrier coating to the body and cowl cap of each liner, replace liner spring seal, weld and machine fuel nozzle bore, and aft end section replacement.

-Gas Turbine Transition Piece Set, unit to gas 2-4: inspect and repair 10 transition pieces, supply transition piece installation hardware kit, install new aft end picture frame inner lip made of Nimonic 263, L605 sleeves on side and floating seals groove, and restore inner body corrosion damage.

-HGP Inspection, unit to gas 2-4: supply supervision and craft labor during twelve

(12) weeks for the assembly job of unit to gas 2-4.

-Transformer Replacement, unit to gas 2-3: design, manufacture and deliver a new Power Transformer GT MCC 500kva, 13.8kv/480v for the Aguirre Combined Cycle distribution system.

D# 1222957-FAASt [Hot Gas Path Inspection Work Units 1-1 and 1-2]

The scope of work consists of:

-Rehabilitation of Stage 1 Turbine Nozzle, Hot Water Inspection (HGP) Gas Unit 1-4, Combined Cycle Power Plant

-Repair of combustion baskets, Combined Cycle Power Plant

- Modification of Transition Parts Set, Hot Gas Passage Inspection

(HGPI) Gas Unit, Aguirre Combined Cycle Power Plant

c. Project# [670036] FAASt [Design Fire Pump for Aguirre Power Complex] (Generation)

D#1222664 FAASt [Design Fire Pump for Aguirre Power Complex]

The scope of work for the Design Fire Pump for Aguirre Power Complex will consist of the following:

Retrofit of the existing Aguirre Power Plant fire protection system main distribution loop and partial segments along its distribution. This solution involves the installation of the main distribution pie above ground. These pipes layout will be install parallel to the exiting underground pipe. Where possible, exiting concrete pipe supports along the route will be reuse for the new installation. The above ground pipe layout will have some segments below grade level, at street crossing and some specific areas of traffic. The pipes in these below grade level areas will be installed inside open trenches with appropriate covers for their specific traffic conditions.

-Current Scope of Work was submitted for the creation of the project in Grants Manager. The specifications of the repairs/replacements will be provided in the Detailed Scope of Work after the A&E processes.

406 HMP Scope

There is no feasible Hazard Mitigation Opportunity for this project. project is part of the Immediate Works requested by PREPA.

1222392 FAASt Aguirre Unit 2 Ex2citation System

Facilities Description

On September 20, 2017 the entire island of Puerto Rico was ravaged by Hurricane Maria, making landfall as high-end category 4 hurricane. As a result of severe winds, wind-driven debris, salt spray, storm surge, mudslides, flooding, and rain, all essential electrical delivery services including power generation were damaged or destroyed, resulting in a complete loss of power and the longest blackout in U.S. history.

Furthermore, PREPA needs to perform constantly works of conservation, repairs, and retrofitting of its generation units and their auxiliary equipment, including, without limitation, boilers, turbines, rotors, generators, motors, pumps, breakers, and control systems. These works are of the utmost importance as it has become more evident by the recent forced outages.

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The AGESR Project (Aguirre Excitation System Replacement) has been approved to plan, coordinate and execute the replacement of the excitation system ABB Unitrol D to ABB Unitrol 6000 of the Aguirre unit 2 generator. Mayor repairs are realized by planned inspections.

Unexpected downtime of a 450 MW not available for generation, the procurement can cost is 3 times expedite parts procurement because the actual excitation system spare parts and support is not available, and replaced generation with higher fuel cost having a difference of replaced cost @\$60/MWh higher than actual unit generation.

By authorizing the AGESR Project, PREPA seeks to have a reliable generator without limitationon real and reactive power. This project also provides proactive management oversight to help in identifying and mitigating risks before they adversely impact the unit's and electric system operation.

Scope of Work Description

The scope of work for the Unit 2 Excitation System Replacement on Aguirre Power Complex will consist of the following:

A. General Requirement - The removal of ABB Unitrol D and installation services of the ABB Unitrol 6000 X-Power for the Unit #2 Excitation System, all parts and components, attachments, Covers and appurtenances. Includes but is not limited to receiving and inspecting, grounding and anchoring, re-terminating existing cables, removing switches, lights and components, miscellaneous conduits and fittings, etc.). All in accordance with the technical specifications.

B. Special Requirements - The high level requirements (engineering & technical) have been identified for the AGESR Project according to ABB Proposal No.8116.3112.

C. Transport: The load and unload operations of the parts, tools and material in Aguirre Steam Plant will be with the available cranes and provided by PREPA personnel.

D. Consumables: The contractor shall provide tools, material, supervision, and necessary equipment to complete the project. All manufacturing consumables shall be provided by the contractor.

E. Site Engineering: gather information required to design, draw, install and integrate the new excitation system to the plant.

F. Removal and installation: provide the services according to ABB Proposal No.8116.3112.

G. Installation site Supervision: Provide Field Service Engineer for on-site, supervision to oversee installation of the AVA system.

H. Commisioning: Provide a Field Service Engineer for on-site commissioning.

I. Operation and Maintenance Training: Provide an Operation & Maintenance training for the new Unitrol 6000. (See note 3)

J. Meetings shall be held at the work site with the PREPA's Project Manager, the Inspector and Plant Personnel, to discuss workscope progress in harmony with project schedule. Attendance to the abovementioned meeting is compulsory for the Contractor's: General Manager, Site Manager and Supervisors.

Cost Estimate

Project Estimated Cost \$1,516,675.00

O&M Training Cost: \$15,000.00 (to be removed from project SOW: See note 3)

Total project Estimated Cost: \$1,501,675.00

Work to be Completed Total: \$ 1,501,675.00

406 Hazard Mitigation Proposal

No feasible Hazard Mitigation Proposal (HMP) has been identified for this damage inventory (DI).

Scope Notes:

1. The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies. Cost is based historical pricing.

2. Excitation System Replacement by ABB – Includes full scope of the excitation system replacement of Aguirre unit 2 along with supervision, labor, tools, manufacturing consumables, and commissioning. Refer to *ABB Proposal No.8116.3112.*

3. For additional clarifications and information refer to document title: 669233 DR4339PR Email dated 04.25.22 RFI response (CRC & PDMG inquiries).pdf.

4. For additional notes refer to project notes in DI1222391

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. Project is part of the Immediate Woks requested by PREPA.

1222396 FAASt Aguirre Steam Power Plant Unit 1 Turbine and Generator-Rehabilitation

Facilities Description

On September 20, 2017 the entire island of Puerto Rico was ravaged by Hurricane Maria, making landfall as high-end category 4 hurricane. As a result of severe winds, wind-driven debris, salt spray, storm surge, mudslides, flooding, and rain, all essential electrical delivery services including power generation were damaged or destroyed, resulting in a complete loss of power and the longest blackout in U.S. history.

Furthermore, PREPA needs to perform constantly works of conservation, repairs, and retrofitting of its generation units and their auxiliary equipment, including, without limitation, boilers, turbines, rotors, generators, motors, pumps, breakers, and control systems. These works are of the utmost importance as it has become more evident by the recent forced outages. To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

The power plant economic performance is not only driven by it's thermal efficiency, but also by it's assets availability and reliability. Major programmed outages are scheduled following the guidelines provided by the original equipment manufacturer in order to fully evaluate such assets. The main objective is to perform a detailed inspection, repairs, blades and rotor replacement in order to identify expected wear effects on turbine elements and any possible major deficiency in order to prevent a catastrophic failure and service interruptions, as it happened to Aguirre Unit 2 on November 2015.

Caribe GE is the original equipment manufacturer for the Aguirre Steam Power Plant turbogenerators. Contracting this company provides PREPA with major assurances of work quality and guarantees given the extent of the works requested. The rehabilitation works is a Turn Key project and onsite where Caribe GE open and closes the steam turbine.

Scope of Work Description

The scope of work for Rehabilitation and Installation of Aguirre Steam Power Unit 1 Turbine

and Generator Inspection:

- General scope compromises of project supervision, technical direction, workforce,

parts, and service for the major inspection and repairs the main steam turbine

components.

- Installation of refurbished HP and IP turbine rotos; LP1 and LP2 blades replacements

and rotors installation.

- Refurbished gland casings.
- Inspections, repairs and installation of control valves, stop valves, interceptor valves

including the actuators.

- Lube and oil control system maintenance.
- S90 Trip Unit replacement.
- Emergency auxiliary and main oil pump.
- Turning gear; alignment.
- Cold and hot turbine recommissioning.
- Generator stator standard DC tests and generator rotor standard tests.
- Other unforeseen repairs deemed necessary identified after detailed inspection is completed

Cost Estimate

Replacement of Unit 1 turbogenerator: \$5,040,954.00

Replacement Parts for Major Inspection of Unit 1 turbogenerator: \$4,667,235.00

Contingencies: \$1,456,228.00

Total Project Estimated Cost: \$11,164,417.00

Work to be Completed Total: \$ 11,164,417.00

406 Hazard Mitigation Proposal

No feasible Hazard Mitigation Proposal (HMP) has been identified for this damage inventory (DI).

Scope Notes:
1. The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

2. For additional clarifications and information refer to document title: 669233 DR4339PR Email dated 04.25.22 RFI response (CRC & PDMG inquiries).pdf

3. For general notes refer to project notes in DI1222391.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. Project is part of the Immediate Woks requested by PREPA.

1222398 FAASt Aguirre Power Station Inner Barrel Bundle

Facilities Description

On September 20, 2017 the entire island of Puerto Rico was ravaged by Hurricane Maria, making landfall as high-end category 4 hurricane. As a result of severe winds, wind-driven debris, salt spray, storm surge, mudslides, flooding, and rain, all essential electrical delivery services including power generation were damaged or destroyed, resulting in a complete loss of power and the longest blackout in U.S. history.

Furthermore, PREPA needs to perform constantly works of conservation, repairs, and retrofitting of its generation units and their auxiliary equipment, including, without limitation, boilers, turbines, rotors, generators, motors, pumps, breakers, and control systems. These works are of the utmost importance as it has become more evident by the recent forced outages.

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

In Aguirre Power Station there's a need of a boiler feed water pump (BFP here after) inner barrel assembly. The BFP is an essential equipment required to reliably and efficiently operate both units in Aguirre (1 & 2). Each unit has its own BFP which supplies demineralized water to the boiler's economizer from the deaerator tank. This has the purpose of producing the flow rate and the pressure increase necessary to maintain proper production of superheated steam to move the turbine, and therefore, to produce power in the generator.

This type of equipment takes about one year to be designed, fabricated, and delivered. These BFP's are an original design of Siemens Energy and are used by the boiler's manufacturer with specific technical requisites such as: operating temperature, nominal flow, rotational speed, power required, discharge pressure and NPSHR (Net positive suction head required). And above all, the pump's dimensions are compatible with the space available.

Scope of Work Description

The scope of work for the BFP inner barrel assembly spare for units 1 and 2 in the Aguirre Power Station will consist of the following:

The Contractor shall design, drafting, manufacture and delivery of one (1) Inner Barrel Assembly for the 9BB Motor Driven Boiler Feed Pump for use at the Aguirre Power Complex.

Cost Estimate

Design, construction and delivery: \$1,625,954.00

Total Project Estimated Cost \$1,625,954.00

406 Hazard Mitigation Proposal

No feasible Hazard Mitigation Proposal (HMP) has been identified for this damage inventory (DI).

Scope Notes:

1. The estimate includes materials, construction labor and equipment, engineering, permitting, management, and contingencies.

2. For additional clarifications and information refer to document title: 669233 DR4339PR Email dated 04.25.22 RFI response (CRC & PDMG inquiries).pdf

3. For general notes refer to project notes in DI1222391.

406 HMP Scope

There is no feasible Hazard Mitigation opportunity identified for this Project. Project is part of the Immediate Woks requested by PREPA.

1229676 FAASt Aguirre Power Plant South Wall Boiler Tubing Replacement

FAASt Aguirre Power Plant South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works

Facilities Description

On September 20, 2017 the entire island of Puerto Rico was ravaged by Hurricane Maria, making landfall as high-end category 4 hurricane. As a result of severe winds, wind-driven debris, salt spray, storm surge, mudslides, flooding, and rain, all essential electrical delivery services including power generation were damaged or destroyed, resulting in a complete loss of power and the longest blackout in U.S. history.

Furthermore, PREPA needs to perform constantly works of conservation, repairs, and retrofitting of its generation units and their auxiliary equipment, including, without limitation, boilers, turbines, rotors, generators, motors, pumps, breakers, and control systems. These works are of the utmost importance as it has become more evident by the recent forced outages.

To improve the generation asset's reliability, increasing their availability, and provide continuous generation service to the People of Puerto Rico, it is crucial to keep these assets operational and in the best possible condition. Therefore, the prioritization of conservation, repairs, and retrofitting works projects is at the top priority list.

A technical assessment performed by GE on the Aguirre Plant Unit 1 reported that the boiler of unit 1 has experienced several breaks in the past, specifically in the front wall of the furnace tubes at the burner level, causing forced exits as a consequence or outages. In addition, studies carried out for the useful life section have confirmed that the thickness of the front wall tubes have reached the minimum thickness allowed by MWT codes.

The GE service report addressed the following concerns in the Aguirre Unit 1 facility:

- 1. Multiple tube failures in the furnace front waterwall
 - From Burner Corner B to the centerline of the furnace and from approximately EL 96' to 53'.
- 2. Multiple tube failures and sagging tubes in the platen superheater assemblies.
- 3. Excessive O2 in the air heater gas outlet ducts.

- 4. Sagging economizer assemblies.
- 5. Deterioration of the gas recirculation fan discharge duct.
- 6. Deterioration of seal boxes for sootblowers, thermoprobes, and observation doors at EL 139'-10".
- 7. Deterioration of the boiler access door at EL 143'-3".
- 8. Deterioration of the roof of the left burnner connecting duct.
- 9. Link failure of the constant load support hanger levers for the right burner connecting duct.

The unit 1 South Wall Boiler Tubing Replacement and Repairs Project & Unit Air and Gas Duct Pre-Heaters Repair Works are necessary to assure the operation and conditions of the Unit 1 boiler system. The boiler has suffered tube breaks which has caused forced outages of the unit. Air ducts have also suffered damages that has caused air infiltrations, which affects the unit's power efficiency.

Scope of Work

Scope of Work Description

- I. The scope of work for the Rehabilitation of the South Waterwall Boiler Unit 1 Aguirre Power Plant will consist of the following:
- Purchase and delivery of boiler tube waterfall panels: 30 tubes wide x 43' 1/2 long, set of 6 panels.
- Rehabilitation of the Furnace Front Waterwall Tubes:
 - Removal and installation of the outer casing Approximately area of 50'x50' elev 48'8 3/4" to elev 90' 10'.
 - Removal and installation of insulation Approximate area of 50'x50'. Calcium silicate 2"x12"x36".
 - Removal and installation of panels, approximately 43' long with 30 tubes of 2". Total of six (6) panels. elev 48'8 3/4" 90' 10'.
 - Manufacture and installation of additional panel of 13 tubes to complete raised front wall; elev 48'8 3/4" to 90' 10'.
 - Removal of trunks (9EA) observation ports, cutting and installation of sight tubes and filling of refractory.
 - Fix membranes and weld wall to buckstay.
 - Wall cutout for boiler access.
- II. The scope of work for the air and gas duct pre-heaters repair will consist of the following:
- Inspections looking for leakages and repairs on ducts will be addressed including insulation repair.
- Ducto de GRF (Gas Recirculation Fan Discharge Duct):

- Existing duct demolition, duct fabrication and installation including damper area. Duct measurements: 38'x12'x4' in two sections of dampers.

- Insulation and refractory removal
- Duct will be manufactured according to existing plans and current field measurements
- Repair of air heater Unit 1, Aguirre:
 - Axial plate replacement / Axial plate installation include the following parts:
 - Axial plate adjusters
 - Static seals / axial plate
 - Axial plate calibration

- Scope of work for this replacement includes the following:
- axial access plate removal
- remove inner casing area axial plate
- remove static stamps
- remove rack pin section
- Replacement section plate hot/cold -includes the following parts:
 - Adjusters and axial reinforcement plate
 - Axial plate static seals
 - Hot/cold plate sector calibration
 - Scope of work for this replacement includes the following:
 - Removal access to remove and install sector plate
 - Removal of static seals for plate sector removal / installation
 - Removal / installation of adjusters
 - Calibration
- Replacement of Rotor Seal Support and T-bar. Removal and installation of these parts, also the calibration.
- Inspection and Repairs of the following:
 - End Plate
 - Stay plate -sol area
 - Front/rear diaphragm-sol area
 - Inspection repair torch / steam
 - Inspection repair washing/ device
 - Inspection repair support / pin rack
 - Inspection guide / support bearing / rotor drive
- Removal / Installation Hot/ Cold
 - Stamps
 - Radials
 - Bypass
 - Axials

Cost estimate

- Purchase of Front Wall (materials) to EGI, Inc. (178,500.00)
- Pipe Wall Installation (1,030,000.00)
- Reconstruction of GRF Duct (Air / Gas Duct) (639,000.00)

- Air Heaters -Labor, tools and equipment:
 - Axial Plates Replacement (180,000.00)

Replacement of section plates (180,000.00)

Replacement of seals (180,000.00)

Materials for work on air heaters (250,000.00)

- Insulation Replacement of Insulation (1,044,000.00)
- Chemical Washing Application (EDTA) (315,000.00)
- High Pressure Washing and Boiler cleaning (150,000.00)
- Scaffolding Rental (100,000.00)
- Technical Advisor Assistant (150,000.00)
- Allowance for different site conditions (250,000.00)
- Mobilization and demobilization (100,000.00)
- Overhead & Profit (929,300.00)
- Insurances (278,790.00)
- Patents & Taxes (29,272.95)

Work to be Completed Total: \$ 5,983,862.95

406 Hazard Mitigation Proposal

No feasible Hazard Mitigation Proposal (HMP) has been identified for this damage inventory (DI).

Scope Notes:

1. For a complete SOW and Cost details please refer to document : Aguirre 002 - Amendment.pdf

2. For Environmental & Historical Preservation (EHP) requirements, details, and supporting documentation please refer to pages 229 to 246 of the document labeled: 669233 DR4339PR PREPA SOW Aguirre 002 Unit 1 & 2.pdf.

3. Please refer to DI1222391 for a complete list for additional general information and a brief description of the SOW for each additional generation project within the Aguirre Power Plant, as required by EHP.

4. For additional clarifications and information refer to document title: 669233 DR4339PR Email dated 04.25.22 RFI response (CRC & PDMG inquiries).pdf

5. For general notes refer to project notes in DI1222391.

406 HMP Scope

There is no feasible Hazard Mitigation Opportunity for this project. project is part of the Immediate Works requested by PREPA.

Cost

Code	Quantity	Unit	Total Cost	Section
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9008 (Equipment (Parent Project 136271))	1.00	Lump Sum	\$630,000.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$1,501,675.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$11,164,417.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (Contract (FAASt project 136271))	1.00	Lump Sum	\$1,625,954.00	Uncompleted
9201 (PAAP Fixed Estimate (No Value - Tracking Purposes Only))	1.00	Lump Sum	\$0.00	Completed
9001 (General Condition Costs (FAASt Parent 136271))	1.00	Lump Sum	\$1,337,362.95	Uncompleted
9001 (Construction Costs (FAASt Parent 136271))	1.00	Lump Sum	\$4,646,500.00	Uncompleted

CRC Gross Cost	\$20,905,908.95
Total 406 HMP Cost	\$0.00
Total Insurance Reductions	\$0.00
CRC Net Cost	\$20,905,908.95
CRC Net Cost Federal Share (90.00%)	\$20,905,908.95 \$18,815,318.06

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW- 10568(11801)	\$14,922,046.00	90 %	\$13,429,841.40	5/25/2022
1	Pending	In Review		\$5,983,862.95	90 %	\$0.00	

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

9/2/2022

No adjustments to be made to the previous insurance coverage determination, no revisions to narrative needed, updated applicant tracker if needed, providing administrative function and forwarding project for completion.

Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, San Juan, PR

8/18/2022

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 669233

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

Total Public Assistance Amount: \$20,905,908.95

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: <u>Willis Towers Watson</u> (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (5)

Damaged Inventory (DI) #1222391:

FAASt Aguirre Power Plant Condenser Circulating Water Pump Motor

Location Description: Aguirre Power Plant - Condenser Circulating Water Pump Motor

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Aguirre Steam Plant"

SOV / Schedule Amount: \$1,118,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$630,000.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Power Plant Condenser Circulating Water Pump Motor in the amount of \$630,000.00.

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Damaged Inventory (DI) #1222392:

FAASt Aguirre Unit 2 Excitation System Breakers

Location Description: Aguirre Power Plant - Unit 2 Excitation System Replacement

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Aguirre Steam Plant"

SOV / Schedule Amount: \$1,118,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$1,501,675.00

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Unit 2 Excitation System Breakers in the amount of \$1,501,675.00.

Damaged Inventory (DI) #1222396:

FAASt Aguirre Steam Power Plant Unit 1 Turbine and Generator Inspection - Rehabilitation and Installation

Location Description: Rehabilitation and Installation of Aguirre Steam Plant Unit 1 Turbine and Generator Inspection

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Aguirre Steam Plant"

SOV / Schedule Amount: \$1,118,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$11,164,417.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Steam Power Plant Unit 1 Turbine and Generator Inspection - Rehabilitation and Installation in the amount of \$11,164,417.00.

Damaged Inventory (DI) #1222398:

FAASt Aguirre Power Station Inner Barrel Bundle

Location Description: Inner Barrel Bundle, Aguirre Power Station

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Aguirre Steam Plant"

SOV / Schedule Amount: \$1,118,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$1,625,954.00

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Power Station Inner Barrel Bundle in the amount of \$1,625,954.00.

Damaged Inventory (DI) #1229676:

FAASt [South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works]

Location Description: Aguirre Unit 1 - Boiler, Preheater and condenser

GPS Coordinates:

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Aguirre Steam Plant"

SOV / Schedule Amount: \$1,118,000,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$5,983,862.95

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Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

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Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: *"PREPA Allocation Plan – All Disasters"* file.

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Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works] in the amount of \$5,983,862.95.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.

2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:

a. The amount of any deductible or self-insured retention the applicant assumed (i.e., "retained risk").

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed \$5,000.00. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

- 1. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or
- 2. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Power Plant Condenser Circulating Water Pump Motor in the amount of \$630,000.00.	\$630,000.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Unit 2 Excitation System Breakers in the amount of \$1,501,675.00.	\$1,501,675.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Steam Power Plant Unit 1 Turbine and Generator Inspection - Rehabilitation and Installation in the amount of \$11,164,417.00.	\$11,164,417.00

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt Aguirre Power Station Inner Barrel Bundle in the amount of \$1,625,954.00.	\$1,625,954.00
Wind	Equipment	An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAASt [South Wall Boiler Tubing Replacement - Boiler Repairs / Air and Gas Duct Pre-Heaters Repair Works] in the amount of \$5,983,862.95.	\$5,983,862.95

406 Mitigation

There is no additional mitigation information on FAASt Aguirre Power Plant 002 Units 1 & 2 Projects (Generation).

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

Yes

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Executive Order 11988 Floodplains Applicant must obtain any required permits from the Planning Board prior to initiating work and comply with any conditions of the permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA) 1. The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

EHP Additional Info

There is no additional environmental historical preservation on FAASt Aguirre Power Plant 002 Units 1 & 2 Projects (Generation).

Final Reviews

Final Review

Reviewed By Soto Toro, Hildelix L.

Reviewed On 09/08/2022 3:45 PM AST

Review Comments

Project is ready for Recipient Review and Approval.

Recipient Review

Reviewed By Salgado, Gabriel

Reviewed On 09/08/2022 4:02 PM AST

Review Comments

Recipient review completed. Project is ready for Applicant Review.

Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$20,905,908.95 for subaward number 10568 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

Project Signatures

Signed By Nieves, Ezequiel

Signed On 09/09/2022