

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

NEPR

Received:

Jul 3, 2023

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IN RE:
LUMA'S RESPONSE TO HURRICANE
FIONA

CASE NO. NEPR-MI-2022-0003

**SUBJECT: Sixteenth Update on Stabilization Plan
and Request for Confidential Treatment of Portions
Thereof**

**MOTION SUBMITTING SIXTEENTH UPDATE ON STABILIZATION PLAN FOR
TEMPORARY EMERGENCY GENERATION CAPACITY AND REQUEST FOR
CONFIDENTIAL TREATMENT OF PORTIONS THEREOF**

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COME NOW LUMA Energy, LLC ("ManagementCo"), and **LUMA Energy ServCo, LLC** ("ServCo"), (jointly referred to as "LUMA"), and respectfully state the following:

**I. Submission of Sixteenth Update on Stabilization Plan for Temporary
Emergency Generation Capacity**

1. In a Resolution and Order of October 7, 2022 ("October 7th Order") with the subject "Baseload Generation Dispatch Status-Post Hurricane Fiona," this honorable Puerto Rico Energy Bureau ("Energy Bureau") convened a Technical Conference to discuss concerns raised by LUMA in a letter dated October 6, 2022, regarding Resource Adequacy and potential Generation resource deficiencies following Hurricane Fiona. Per the October 7th Order, the topics to be discussed at the Technical Conference were "(i) Dispatch Status of the available Baseload Generation post Hurricane Fiona and (ii) the identified temporary emergency mitigation measures thought to address the generation deficiencies arising from Hurricane Fiona."¹

¹ The Technical Conference was held as scheduled on October 11, 2022. During the Technical Conference, the Energy Bureau and consultants for the Energy Bureau posed questions to LUMA's representatives.

2. On October 12, 2022, the Energy Bureau entered a Resolution and Order whereby it ordered LUMA to develop a stabilization plan as a direct response to Hurricane Fiona, in coordination with the Federal Emergency Management Agency (“FEMA”) and the Puerto Rico Electric Power Authority (“PREPA”) “to address any baseload generation inadequacy or shortfall that affects the dispatch availability and has the potential to cause load shedding or a blackout event of the electric system (“Stabilization Plan”)” (“October 12th Order”).

3. Per the October 12th Order, LUMA was directed to submit the 1st and the 15th day of each month from the notice of the Order, an updated report addressing the efforts conducted by LUMA to assure the completion of the Stabilization Plan.

4. On October 31st, 2022, LUMA submitted the First Update on the Stabilization Plan.

5. On November 1, 2022, this Energy Bureau held a technical conference for November 1, 2022 (“October 27th Order”) in connection with the first update on the Stabilization Plan. LUMA representatives appeared to discuss the Stabilization Plan and answered questions by this Energy Bureau.

7. On November 15, 2022, LUMA submitted a Second Update on the Stabilization Plan (“Second Update”). In addition, LUMA submitted supplemental information to the Second Update arising from a joint press conference of November 15th, 2022, where the Governor of Puerto Rico, the Hon. Pedro Pierluisi and the Federal Coordinator for the Federal Emergency Management Agency (“FEMA”), Nancy Casper, announced that FEMA’s power stabilization initiative aims to install between 600 to 700 MW of temporary emergency generation capacity through the mobilization of power generation maritime barges and temporary land-based generators. *See Supplemental Submission to Second Update on Stabilization Plan to Inform of*

Announcement by the Puerto Rico Government and FEMA on Temporary Emergency Generation Capacity, filed on November 15, 2022.

8. On December 1st, 2022, LUMA submitted the Third Update on the Stabilization Plan.

9. The most recent updates to the Stabilization Plan were filed on December 1st, 2022 (Third Update), December 15, 2022 (Fourth Update), January 17, 2023 (Fifth Update); January 31, 2023 (Sixth Update); February 14, 2023 (Seventh Update); March 1, 2023 (Eight Update); March 15th (Ninth Update); April 3rd (Tenth Update); April 17th (Eleventh Update); May 1, 2023 (Twelfth Update); May 15, 2023 (Thirteenth Update); June 1st, 2023 (Fourteenth Update), and June 15, 2023 (Fifteenth Update).

10. In compliance with the October 12th Order, LUMA hereby submits as *Exhibit I*, the Sixteenth Update on the Stabilization Plan (“Sixteenth Update”). The Sixteenth Update includes, among others, a summary of the status of the Stabilization Plan with reference to the tasks performed by LUMA in coordination with USACE, FEMA and PREPA; an update on the activities at the Palo Seco site, including the power produced by the FEMA gen sets at Palo Seco, as well as maintenance activities and planned outages; and the status of construction activities at the San Juan site. Finally, the Sixteenth Update includes LUMA’s “System Resource Adequacy Analysis of an Additional 750MW of Generation.”

11. LUMA redacted portions of *Exhibit I* and respectfully requests that those portions be kept confidential by this honorable Energy Bureau pursuant to the Energy Bureau’s Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, and partially amended on September 16, 2016 and in accordance with the confidential nature of the December 20th closed Technical Conference. In compliance with this policy, LUMA hereby

submits its Memorandum of Law in support of its request for confidentiality setting forth the legal basis for which LUMA is entitled to file portions of Sixteenth Report under the seal of confidentiality. As explained below, the Energy Bureau should protect several pictures included in *Exhibit 1* from public disclosure as they contain CEII as defined in federal regulations and the Energy Bureau's Policy on Management of Confidential Information. *See* 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674; Energy Bureau's Policy on Management of Confidential Information.

II. Memorandum of Law in Support of request for Confidentiality

A. Applicable Laws and Regulations to Submit Information Confidentially Before the Energy Bureau.

The bedrock provision on the management of confidential information filed before this Energy Bureau is Section 6.15 of Act 57-2014, known as the "Puerto Rico Energy Transformation and Relief Act." It provides, in pertinent part, that: "[i]f any person who is required to submit information to the Energy Commission believes that the information to be submitted has any confidentiality privilege, such person may request the Commission to treat such information as such" 22 LPRA § 1054n. If after appropriate evaluation the Energy Bureau determines that the information should be protected, "it shall grant such protection in a manner that least affects the public interest, transparency, and the rights of the parties involved in the administrative procedure in which the allegedly confidential document is submitted." *Id.* § 1054n(a).

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

the [Energy Bureau] shall direct that a non-confidential copy be furnished for public review.” *Id.* § 1054n(c).

Relatedly, in connection with the duties of electric power service companies, Section 1.10(i) of Act 17-2019 provides that electric power service companies shall provide the information requested by customers, except for confidential information under the Rules of Evidence of Puerto Rico.

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

The Energy Bureau policy on CEII is regulated by Section D of the Resolution issued on August 31, 2016, in Case No. CEPR-MI-2016-0009. Section D establishes that CEII is Validated Confidential Information and only authorized representatives may review such information:

2. Critical Energy Infrastructure Information (“CEII”)

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

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

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

Further on, Energy Bureau Regulation No. 8543, includes a provision for filing confidential information in proceedings before this Energy Bureau. To wit, Section 1.15 provides that:

[A] person has the duty to disclose information to the [Energy Bureau] considered to be privileged pursuant to the Rules of Evidence, said person shall identify the allegedly privileged information, request the [Energy Bureau] the protection of said information, and provide supportive arguments, in writing, for a claim of information of privileged nature. The [Energy Bureau] shall evaluate the petition and, if it understands [that] the material merits protection, proceed accordingly to . . . Article 6.15 of Act No. 57-2015, as amended.

Regulation No. 8543, *Regulation on Adjudicative, Notice of Noncompliance, Rate Review, and Investigation Proceedings* § 1.15; *see also* Energy Bureau Regulation No. 9137 on *Performance Incentive Mechanisms* § 1.13 (addressing disclosure before the Energy Bureau of Confidential Information and directing compliance with Resolution CEPR-MI-2016-0009).

B. Request for Confidentiality of the Pictures included in the Sixteenth Update

The Sixteenth Update contains pictures that identify or depict CEII that, under relevant federal law and regulations, is protected from public disclosure. LUMA stresses that the pictures which LUMA redacted from the public version of the Sixteenth Report warrant confidential treatment to protect the Puerto Rico Energy Transmission and Distribution System (“T&D System”) from threats that could undermine the system and negatively affect electric power services to the detriment of the interests of the public, customers, and citizens of Puerto Rico.

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

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

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

Id. at § 388.113(2).

Additionally, Section 388.113(3) defines critical electric infrastructure as a “system or asset of the bulk-power system, whether physical or virtual, the incapacity or destruction of which would negatively affect national security, economic security, public health or safety, or any combination of such matters.” *Id.* § 388.113(3). Finally, “[c]ritical infrastructure means existing and proposed systems and assets, whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters.” *Id.* § 388.113(4).

The Critical Infrastructure Information Act of 2002, 6 U.S.C. §§ 671-674, part of the Homeland Security Act of 2002, protects critical infrastructure information (“CII”).² CII is defined

² Regarding the protection of voluntary disclosures of critical infrastructure information, 6 U.S.C. § 673, provides in pertinent part that CII:

- (A) shall be exempt from disclosure under the Freedom of Information Act;
- (B) shall not be subject to any agency rules or judicial doctrine regarding ex parte communications with a decision making official;
- (C) shall not, without the written consent of the person or entity submitting such information, be used directly by such agency, any other Federal, State, or local authority, or any third party, in any civil action arising under Federal or State law if such information is submitted in good faith;

as “information not customarily in the public domain and related to the security of critical infrastructure or protected systems” 6 U.S.C. § 671(3).³

As mentioned above, the Energy Bureau’s Policy on Confidential Information provides for the management of CEII. In several proceedings, this Energy Bureau has considered and granted requests to submit CEII under seal of confidentiality.⁴ For example, in at least two proceedings on

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- (D) shall not, without the written consent of the person or entity submitting such information, be used or disclosed by any officer or employee of the United States for purposes other than the purposes of this part, except—
 - (i) in furtherance of an investigation or the prosecution of a criminal act; or
 - (ii) when disclosure of the information would be--
 - (I) to either House of Congress, or to the extent of matter within its jurisdiction, any committee or subcommittee thereof, any joint committee thereof or subcommittee of any such joint committee; or
 - (II) to the Comptroller General, or any authorized representative of the Comptroller General, in the course of the performance of the duties of the Government Accountability Office
 - (E) shall not, be provided to a State or local government or government agency; of information or records;
 - (i) be made available pursuant to any State or local law requiring disclosure of information or records;
 - (ii) otherwise be disclosed or distributed to any party by said State or local government or government agency without the written consent of the person or entity submitting such information; or
 - (iii) be used other than for the purpose of protecting critical Infrastructure or protected systems, or in furtherance of an investigation or the prosecution of a criminal act.
 - (F) does not constitute a waiver of any applicable privilege or protection provided under law, such as trade secret protection.

³ CII includes the following types of information:

- (A) actual, potential, or threatened interference with, attack on, compromise of, or incapacitation of critical infrastructure or protected systems by either physical or computer-based attack or other similar conduct (including the misuse of or unauthorized access to all types of communications and data transmission systems) that violates Federal, State, or local law, harms interstate commerce of the United States, or threatens public health or safety;
- (B) the ability of any critical infrastructure or protected system to resist such interference, compromise, or incapacitation, including any planned or past assessment, projection, or estimate of the vulnerability of critical infrastructure or a protected system, including security testing, risk evaluation thereto, risk management planning, or risk audit; or
- (C) any planned or past operational problem or solution regarding critical infrastructure or protected systems, including repair, recovery, construction, insurance, or continuity, to the extent it is related to such interference, compromise, or incapacitation.

⁴ See e.g., *In re Review of LUMA’s System Operation Principles*, NEPR-MI-2021-0001 (Resolution and Order of May 3, 2021); *In re Review of the Puerto Rico Power Authority’s System Remediation Plan*, NEPR-MI-2020-0019 (order of April 23, 2021); *In re Review of LUMA’s Initial Budgets*, NEPR-MI-2021-0004 (order of April 21, 2021); *In re Implementation of Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, NEPR MI 2020-0012 (Resolution of January 7, 2021, granting partial confidential designation of information submitted by PREPA as CEII); *In re Optimization Proceeding of Minigridd Transmission and Distribution Investments*,

Data Security,⁵ and Physical Security,⁶ this Energy Bureau, *sua sponte*, conducted proceedings confidentially, recognizing the need to protect CEII from public disclosure.

Additionally, this Energy Bureau has granted requests by LUMA to protect CEII in connection with LUMA's System Operation Principles. *See* Resolution and Order of May 3, 2021, table 2 on page 4, Case No. NEPR-MI-2021-0001 (granting protection to CEII included in LUMA's Responses to Requests for Information). Similarly, this Energy Bureau granted confidential designation to several portions of LUMA's Initial Budgets and Responses to Requests for Information in the proceedings on LUMA's proposed Initial Budgets and System Remediation Plan.⁷

On June 30, 2023, this Energy Bureau issued a Resolution and Order granting LUMA's requests for confidential treatment of confidential portions of the LUMA's Updates to the Stabilization Plan. The Energy Bureau should apply that ruling to this filing and protect the pictures in the Sixteenth Update. The pictures depict the exact location, specifications and characteristics of the gensets and other large capacity equipment assembled and installed at Palo Seco, as well as pictures of the San Juan site. Thus, the pictures could be useful to a person planning an attack on the transmission and distribution facilities, as they enable a person to identify their location and

NEPR-MI 2020-0016 (where PREPA filed documents under the seal of confidentiality invoking, among others, that a filing included confidential information and CEII); *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, CEPR-AP-2018-0001 (Resolution and Order of July 3, 2019, granting confidential designation and PREPA's request that included trade secrets and CEII); *but see* Resolution and Order of February 12, 2021 (reversing in part, grant of confidential designation).

⁵ *In re Review of the Puerto Rico Electric Power Authority Data Security Plan*, NEPR-MI-2020-0017.

⁶ *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan*, NEPR-MI-2020-0018.

⁷ *See* Resolution and Order of April 22, 2021, on Initial Budgets, table 2 on pages 3-4 and Resolution and Order of April 22, 2021, on Responses to Requests for Information, table 2 at pages 8-10, Case No. NEPR-MI-2021-0004; Resolution and Order of April 23, 2021, on Confidential Designation of Portions of LUMA's System Remediation Plan, table 2 on page 5, and Resolution and Order of May 6, 2021, on Confidential Designation of Portions of LUMA's Responses to Requests for Information on System Remediation Plan, table 2 at pages 7-9, Case No. NEPR-MI-2020-0019.

provide clear depictions of the equipment which could compromise the electric power services in Puerto Rico.

LUMA respectfully submits that the pictures in the Sixteenth Update should be designated CEII. This designation is a reasonable and necessary measure to protect critical infrastructure and enable LUMA to leverage the information and assessment of critical infrastructures without external threats. Given the importance of ensuring the safe and efficient operation of the generation assets and the T&D System, LUMA respectfully submits that the pictures be maintained confidential to safeguard the facility's integrity and protect it from external threats.

C. Identification of Confidential Information.

In compliance with the Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, below is a table summarizing the hallmarks of this request for confidential treatment.

| | Document or file | Pages in which Confidential Information is Found, if applicable | Summary of Legal Basis for Confidentiality Protection, if applicable | Date Filed |
|---|--|--|--|-------------------|
| 1 | Generation Stabilization Plan dated July 3, 2023 | Pictures on pages 7, 9, and 10 of Exhibit 1. | Critical Energy Infrastructure Information 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674. | July 3, 2023 |

WHEREFORE, LUMA respectfully requests that this Energy Bureau **take notice** of the aforementioned, **accept** the Sixteenth Update submitted as *Exhibit 1* to this Motion, **deem** that LUMA complied with that portion of the October 12th Order that requires submission of bi-monthly updated reports on the Stabilization Plan, and **grant** the request for confidential treatment that is included in this Motion.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 3rd day of July 2023

I hereby certify that this motion was filed using the electronic filing system of this Energy Bureau. I also certify that copy of this motion will be notified to the Puerto Rico Electric Power Authority, through its attorney of record: jmarrero@diazvaz.law.



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Exhibit 1
Sixteenth Update on Stabilization Report



Generation Stabilization Plan Discussion

July 3, 2023

Agenda

- I. Executive Summary
- II. PR Grid System Performance, Including Palo Seco FEMA Generation
- III. Current Operations / Resource Adequacy
- IV. Construction Progress Brief
- V. Construction Picture Archive
- VI. System Resource Adequacy Analysis of an Additional 750 MW of Generation

Executive Summary

Threat of Tropical Storms and Hurricanes interrupted progress and required GSP schedule adjustments:

- Construction focus turned to storm readiness and adjusting work plans to avoid the risks from possible storms

Palo Seco Site (150 MW):

- The threat of storms required a work-around plan to replace the Palo Seco previously-planned 10-day outage
 - The original outage planned for 6/20 - 6/30, was modified to avoid potential storm hazards and rescheduled for 6/24 - 7/5
 - The new outage plan requires constant coordination with the LUMA BPS Control Center while performing sequenced tasks to keep as many of the gensets as possible in-service while the work is being done; expecting to have all gensets on-line 7/5.
 - The cumulative production by the FEMA genset array: 61,000 MWh and averaged 149 Mw during the period of 6/7 - 6/25

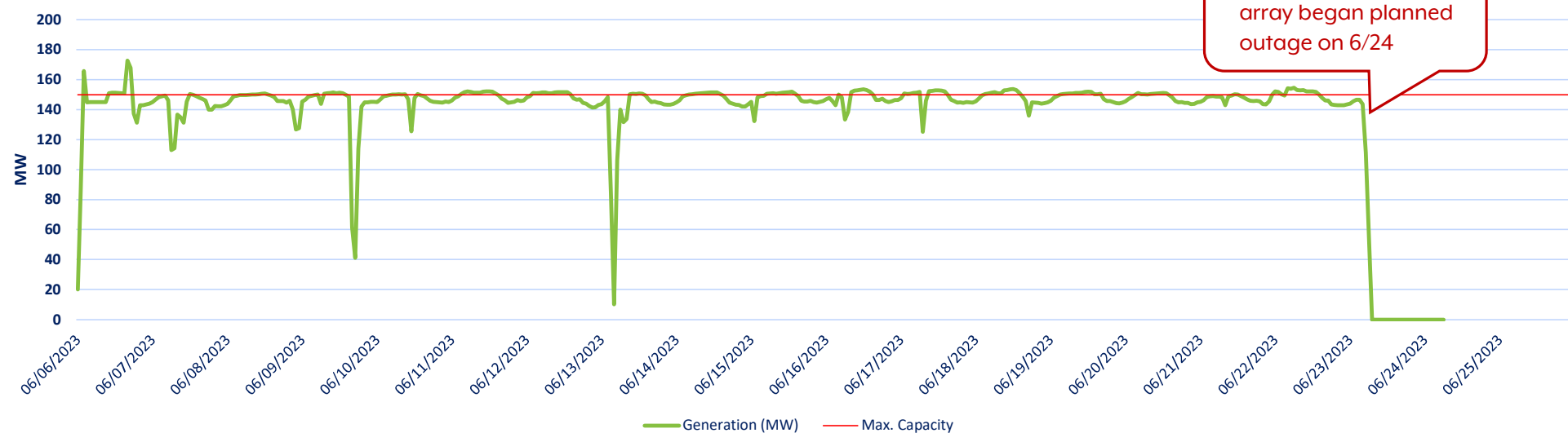
San Juan Site (200 MW):

- The focus is on completing pre-commissioning of the gensets and constructing the new infrastructure on site
 - The final genset (spare) arrived 6/28, placed on site and made ready for assembly, inspection and testing
 - The 300 MVA transformer was prepared for transport by LUMA staff and will be moved to its newly completed foundation when the Transportation Plan is finalized; targeted for the week of 7/2
 - A new 115Kv Transmission line from the 300 MVA transformer to the San Juan switch yard is a design & build challenge with three design approaches being evaluated; design and risk analysis in process.

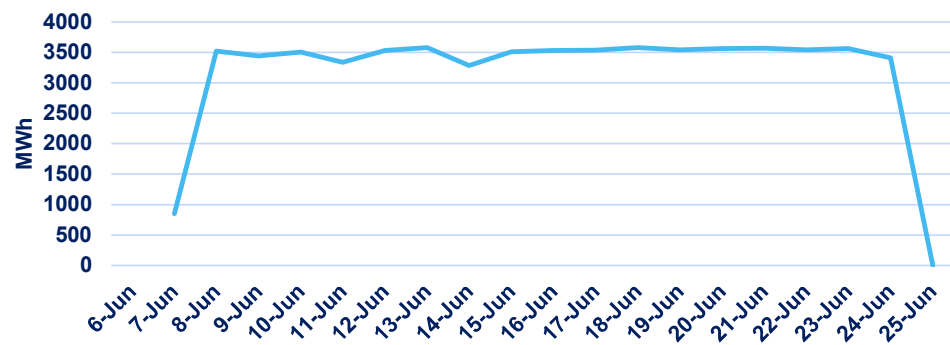
Genera PR: Transition completes 7/1; Genera has participated in Generation meetings, no issues expected

Palo Seco FEMA Genset Array Performance, 6/6/23 – 6/25/23

FEMA PS Hourly Generation (MW)



FEMA PS Daily Generation (MWh)



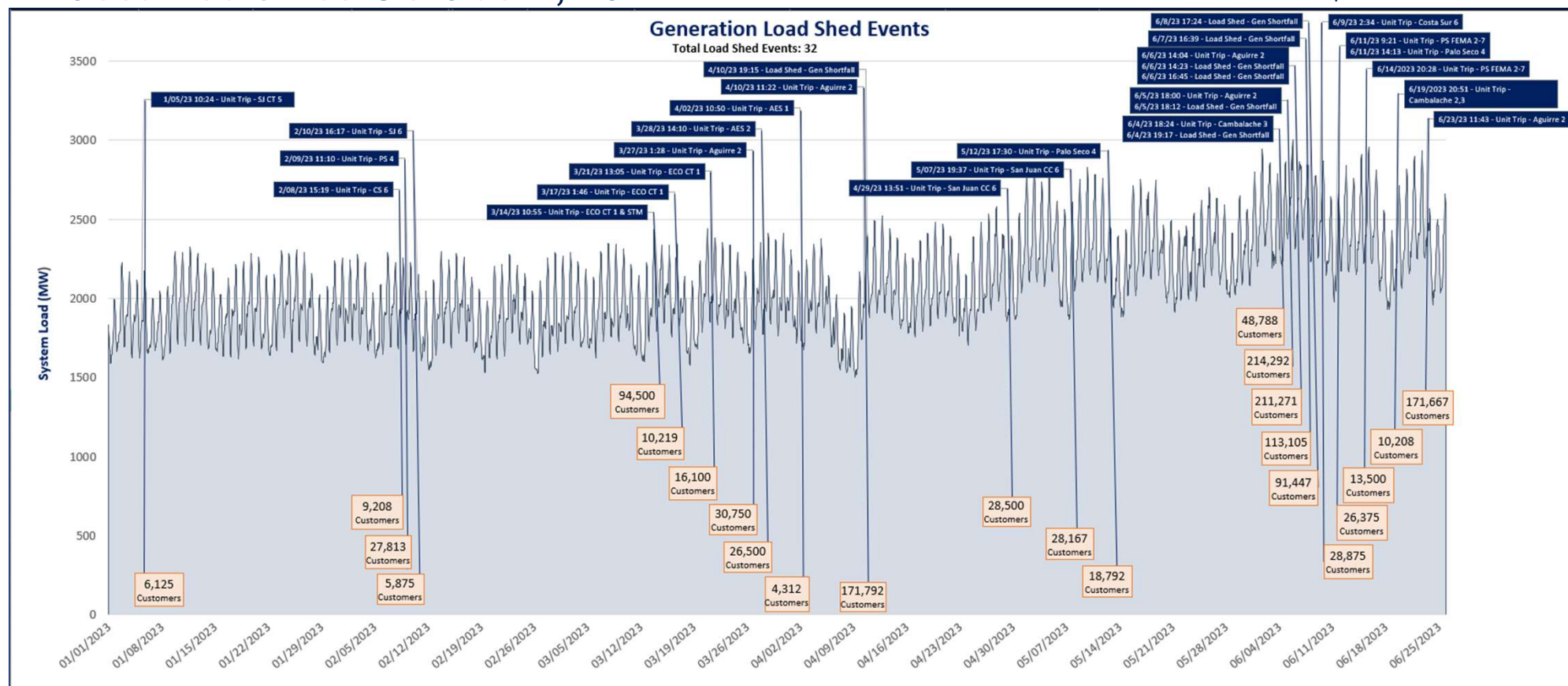
* Red line in above graph is the targeted baseload of 150 MW

- 61,000 MWh of energy produced during the period of 6/7 - 6/25



Current Generation Load Shed Events: 48 load shed events have occurred since October 1, 2022

Updated until 6/25/2023

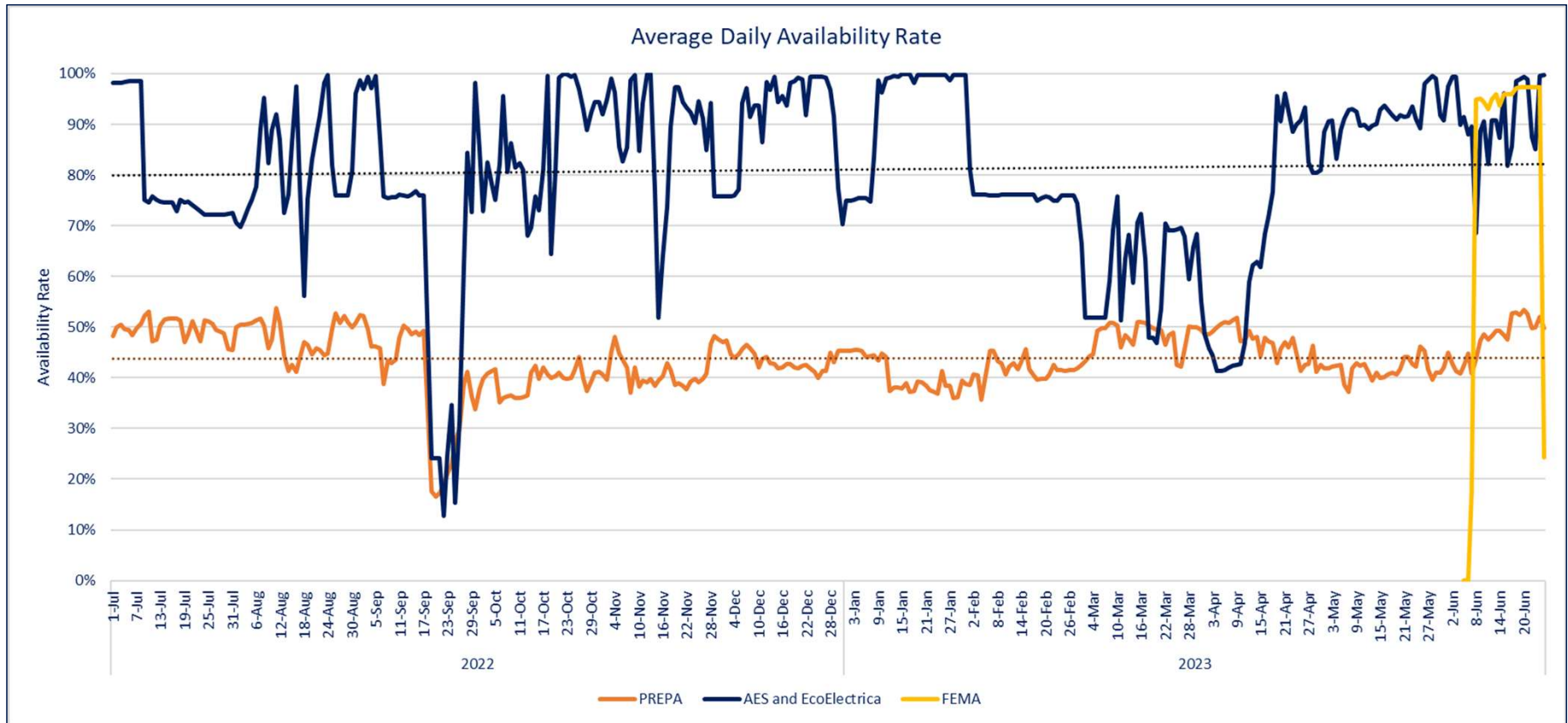


- There have been 17 generation load sheds in June as of 6/29/23
 - 2 load sheds occurred on June 29, 2023, due to unit trips (Aguirre 2 and Palo Seco 3)
- 10/1/22 - 12/31/22: 16 load shed events
- 1/1/23 - 6/29/23: 32 load shed events



Average Daily Availability

Updated 6/25/2023



Note: The linear trendline smooths-out fluctuations in data to show a pattern or trend more clearly. It uses the average value as a single point in the trendline.

- FEMA Units synchronized to the system on 6/7/23 and taken offline on 6/24/23 for planned construction outage

Construction Progress Brief

Palo Seco – Finalizing construction and performing maintenance during a 10-day Planned Outage

- **Demineralized water system** for NOx control is operational. Schedule for end of commissioning is now 7/5, based on the storm-adjusted outage beginning 6/25.
- **LNG system is operating** to support delivery of natural gas to gensets, and LNG truck deliveries are ongoing to support operations
- **Increasing the FEMA genset array capacity ~4-8 Mw** by swapping the larger “spare” genset with a smaller, installed base-load genset

San Juan – Construction effort is increasing

- **Demineralized water system** equipment estimated to arrive mid-July + 3-4 weeks to install, commission and test; completing mid-to-late August
- **115Kv T-line** from 300 MVA transformer to 115Kv switch yard (critical path item)
 - Significant challenges with design, constructability and safety; currently evaluating three approaches: 1) Underground insulated cable; 2) Above grade level cable tray; and 3) Aerial Line Poles with special foundation design

- **300 MVA transformer concrete foundation and pad is complete; Transportation Plan was approved, and transport date is planned for 7/8**

Hyundai 300 MVA Transformer
Length: 21 feet **Width:** 12 feet
Height: 17 feet **Weight:** 350k lbs.

^ Aerial view of San Juan site (wharf): Short ½ mile route (blue line) the transformer will travel for placement

Construction Progress Brief

Objectives of the Palo Seco Gensets Planned Outage

- Complete installation and commissioning of the demineralized water system used for pollution control in all gensets
- Commission the last genset and swap genset-1 with genset-3 to increase genset array capacity by 4-8 MW
- Change power feed for the LNG system to improve reliability of power source
- Various other planned maintenance tasks

(update 6/28/23)

San Juan Genset assembly and commissioning progress

| Unit | Set/Level Trailers | Unit Stacking | Fine Align | Cable Interconnections | Instrumentation Testing | Electrical Testing | Black Start Diesel Power | Grounding to Grid | IWP/PWP |
|------|--------------------|---------------|------------|------------------------|-------------------------|--------------------|--------------------------|-------------------|---------|
| GT10 | 100% | 100% | 100% | 95% | 95% | 60% | | | 67% |
| GT09 | 100% | 100% | 100% | 95% | 97% | 60% | | | 67% |
| GT08 | 100% | 100% | 100% | 95% | 97% | 75% | | | 70% |
| GT07 | 100% | 100% | 100% | 95% | 91% | 70% | | | 68% |
| GT06 | 100% | 100% | 100% | 95% | 85% | 50% | | | 63% |
| GT05 | 30% | | | | | | | | 4% |
| GT04 | 100% | 100% | 100% | 95% | | 20% | | | 47% |
| GT03 | 100% | 100% | 100% | 95% | 35% | 30% | | | 53% |
| GT02 | 100% | 100% | 100% | 95% | | 20% | | | 47% |
| GT01 | 100% | 100% | 100% | 95% | | 5% | | | 44% |

(update 6/28/23)

| Palo Seco Planned Outage: 6/24 - 7/5 (Major Tasks) | Target Completion Date | Completed |
|--|------------------------|-----------|
| LUMA shutdown LNG Re-Gas Power feed | 24-Jun | X |
| Connect Cabling to Block 2, switch GT 3 to Unit 1 Switchgear | 24-Jun | X |
| LUMA open breaker and ground Block 2, Block 3, and Unit 1 | 25-Jun | X |
| Connect Power for GT-1, GT-3 and new LNG Power Feed | 25-Jun | X |
| Complete Power Feed to Demineralized Water system/15kV switch | 26-Jun | X |
| Full Speed, No load GT-1 to perform Initial Test (Diesel) | 27-Jun | X |
| Remove Jumpers and close Block, 2, 3, and Unit 1 | 27-Jun | X |
| Restart LNG system on New Power Feed | 27-Jun | X |
| Commission GT-3 to Grid (Diesel) | 28-Jun | |
| Re-Start GT-2, GT-4, GT-5, GT-6, and GT-7 (132MW) - (Nat Gas) | 28-Jun | |
| Commission GT-1 to Grid (Nat Gas) | 29-Jun | |
| Commission demineralize water system by introducing water to each Genset | 5-Jul | |

- Target date for completing commissioning of San Juan gensets remains mid-to-late August
- GT05 arrived on site 6/26 and has begun assembly and early-commissioning



Picture Archive Palo Seco site

LNG system including
Buffer Tank, Re-Gas Skids
and ISO container truck
LNG unloading area

< Piping installation
within the
demineralized water
system area - 6/20/23

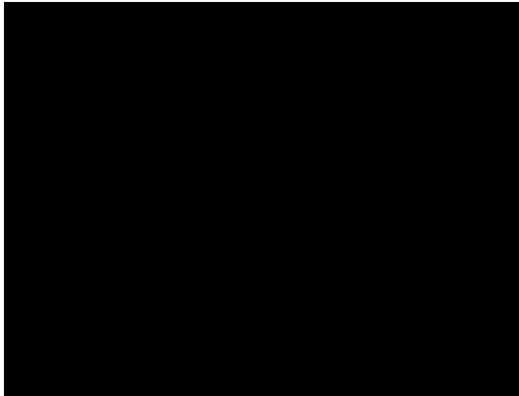
^ Palo Seco site drone picture showing current
site arrangement – 6/5/23

Line-up of FEMA
gensets

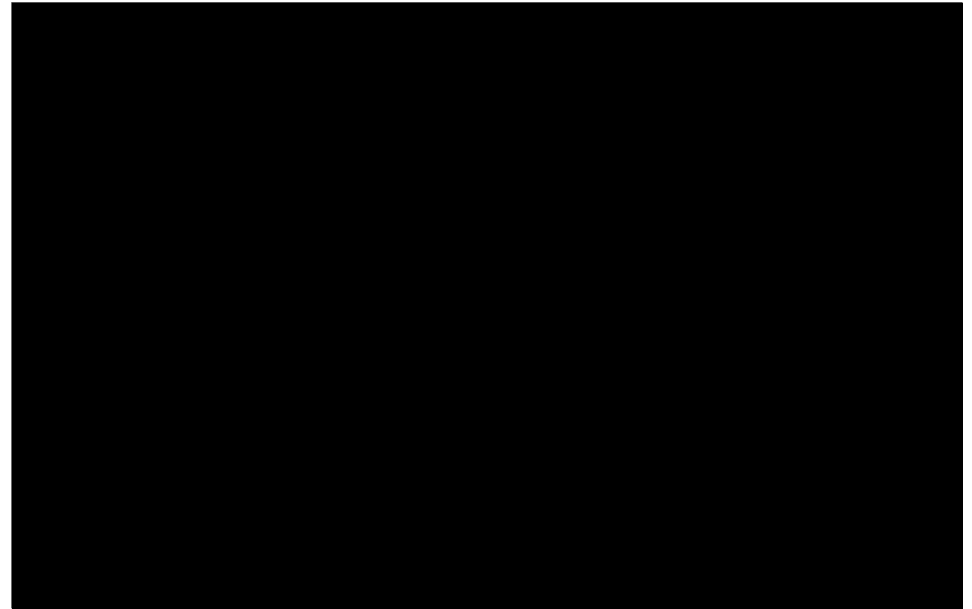
> Piping pump skid
to Filter on Demin
Water system -
6/20/23

^ Palo Seco site Demin Water System Overview – 6/20/23

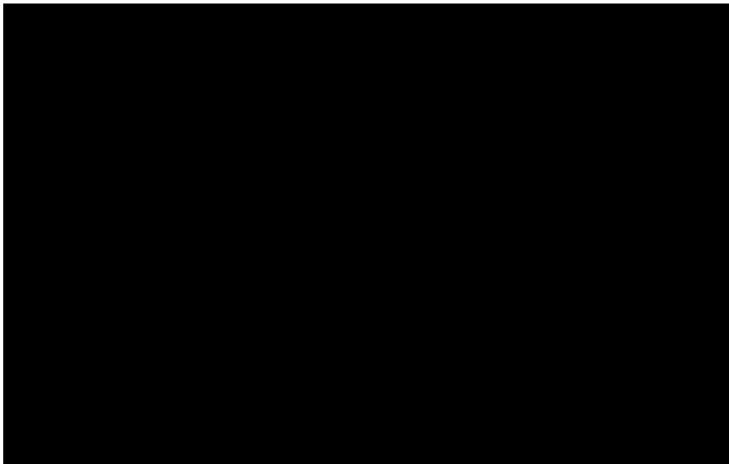
Picture Archive San Juan site



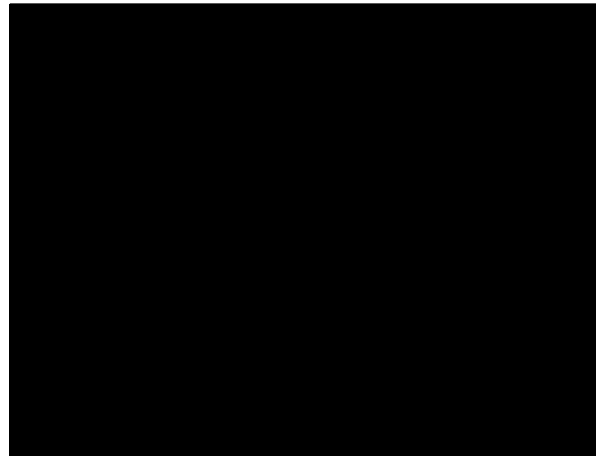
< Cable Tray & Diesel
Distribution Piping
installation - 6/22/23



^ San Juan on-site fabrication of diesel and natural gas pipe - 6/23/23



^ Installing Genset Fire Suppression Cylinder
installation - 6/23/23



< LUMA staff
decommissioning the
300 MVA transformer in
preparation to transport
to the new foundation-
6/23/23





System Resource Adequacy Analysis of an Additional 750 MW of Generation

July 3, 2023

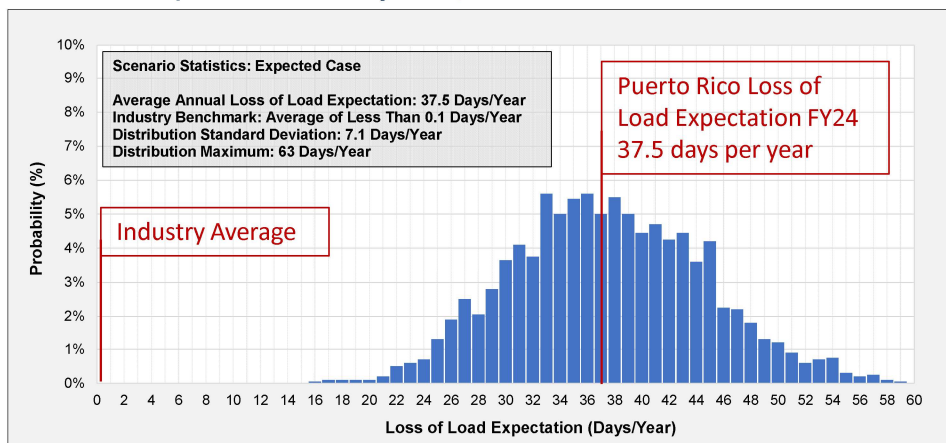
Summary

- This analysis is extracted from the upcoming annual Resource Adequacy report for the portfolio of generation assets in Puerto Rico
- This analysis assesses the impact of an additional 750 MW of emergency generation to the ability of the portfolio to approach industry standards for FY24
- The “base case” assumed the existing generation on-line today and does not include FEMA generation; additional scenarios were analyzed to test the impact of the emergency generation to this base case
- This Resource Adequacy update confirms the same conclusions that LUMA has presented consistently over the past year, that without an additional approximately 750 MW of generation capacity, the people of Puerto Rico will continue to experience generation caused load shed events at a frequency approximately 400 times as high as the minimum standard for North American utilities



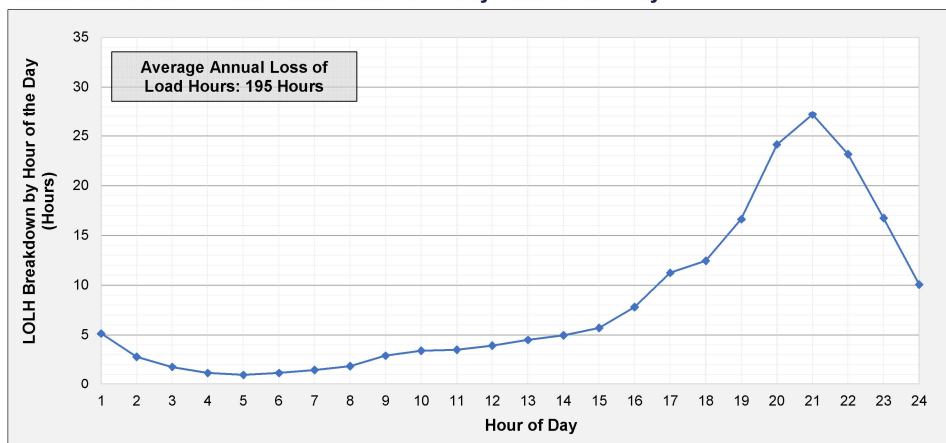
With existing generation capacity, customers can expect to lose power due to generation shortfalls approximately 38 days per year in FY24

Loss of Load Expectation Probability Chart, FY2024



- The North American planning standard is to have adequate generation to lose load due to generation shortfalls no more than one day every ten years (or 0.1 per year)
- Customers in Puerto Rico are 375 times more likely to lose power due to generation shortfall with existing installed portfolio.
- The most vulnerable time for load shed events is the peak hours between 6-10 pm
- The impact of FEMA emergency generation capacity was evaluated as a separate scenario since it is still not certain how long the FEMA generation will remain available

Calculated Loss of Load Hours Broken Out by Hour of the Day

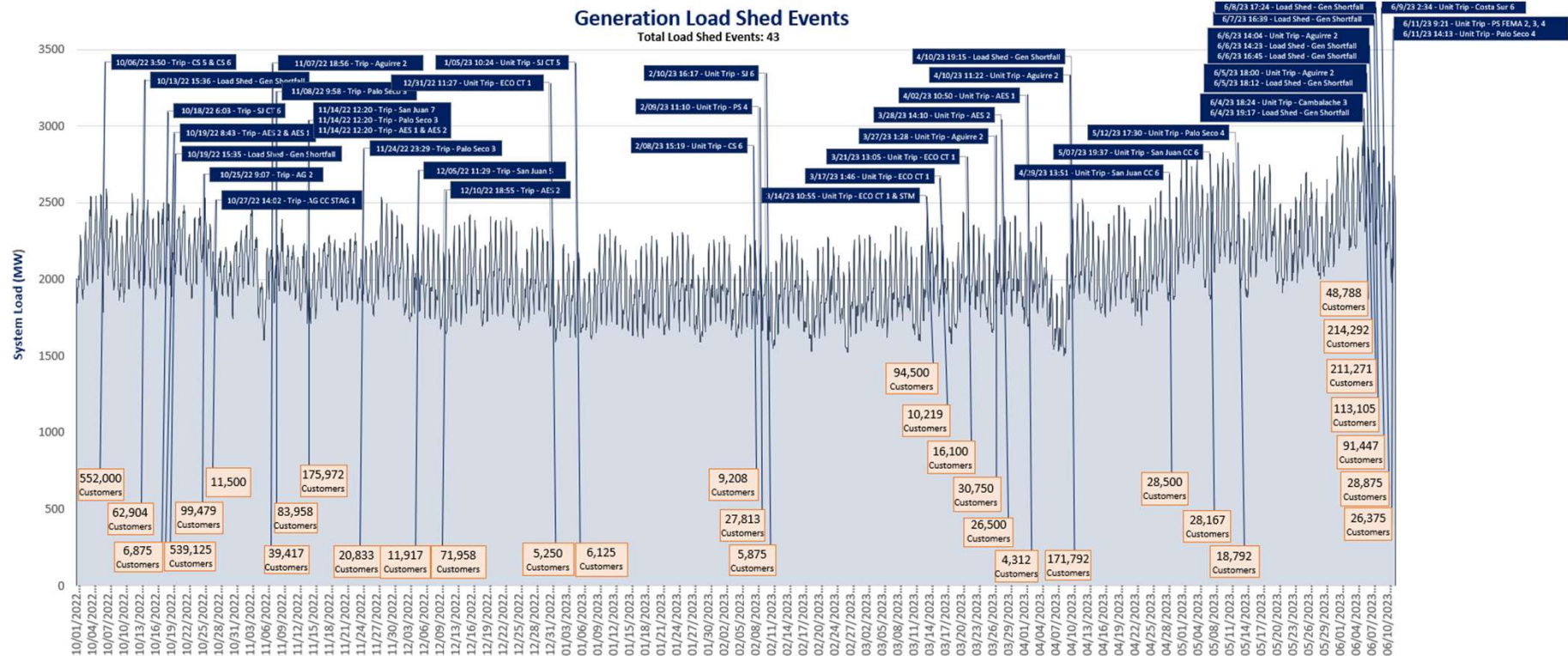


| Measure | Loss of Load Expectation (LOLE) | Loss of Load Hours (LOLH) |
|--------------------|---------------------------------|---------------------------|
| Average | 37.5 Days / Year | 194.5 Hours / Year |
| Industry Benchmark | 0.1 Days / Year | — |



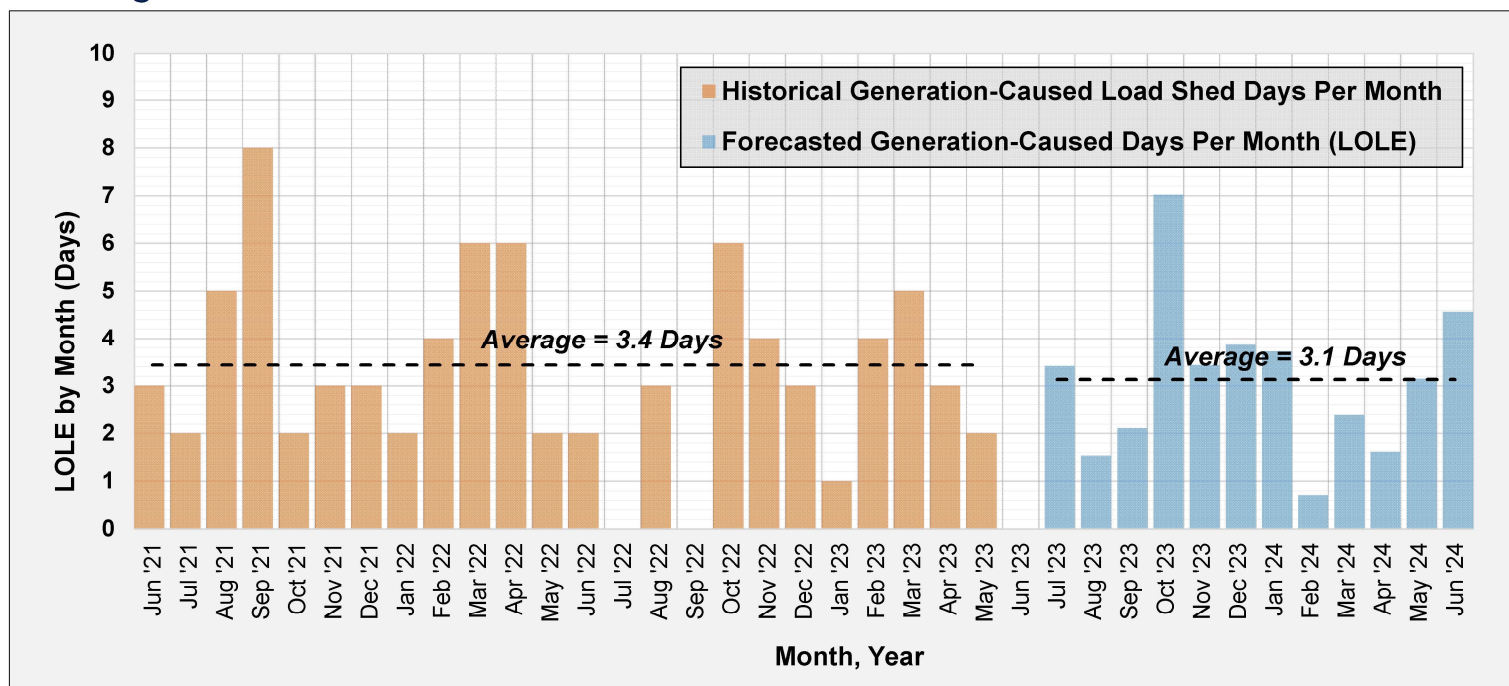
Loss of load events have tracked very closely with modeled results prepared during hurricane Fiona

- Resource assessment conducted immediately after Fiona projected 50 expected load shed events in the next 12 months or 38 load shed events to have occurred by June 30, 2023
- Forty-three load shed events have occurred



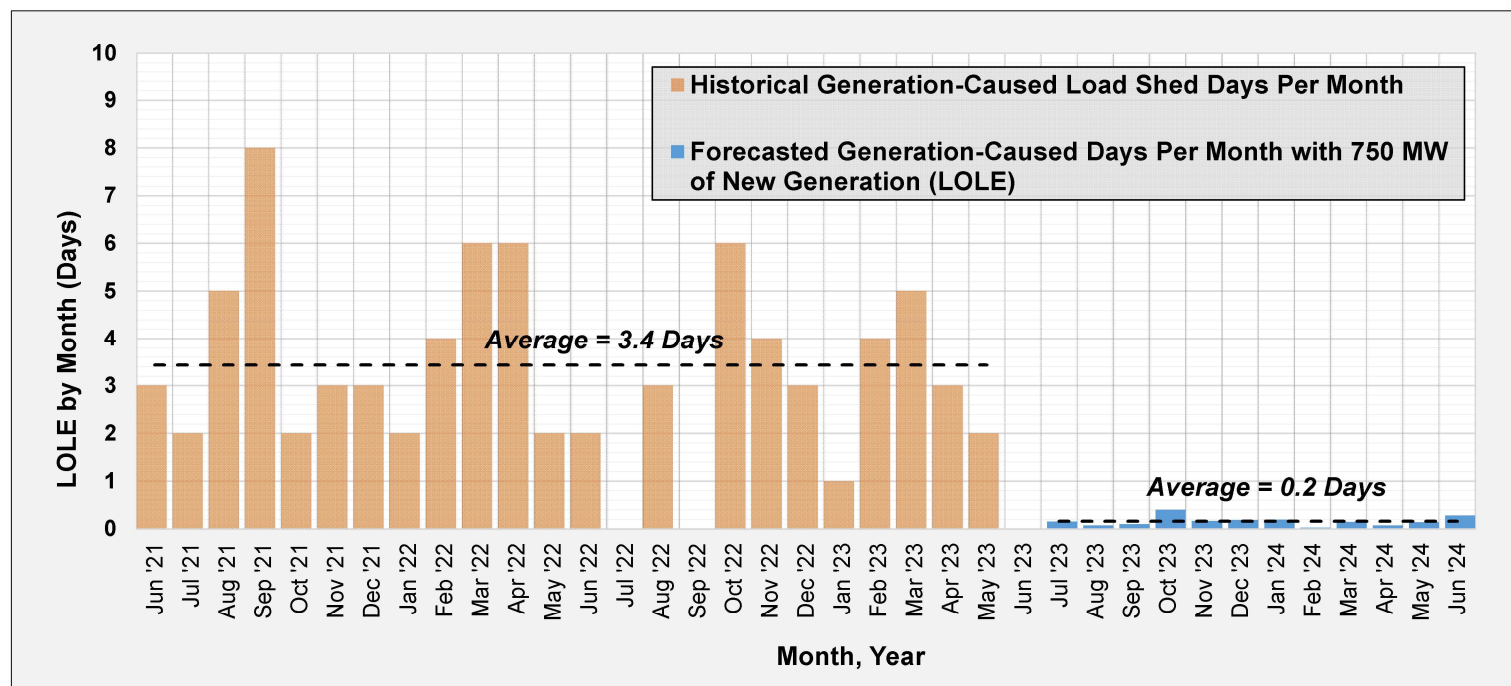
The FY24 expectation with the current portfolio is for an average of 3.1 load shed events per month

- Generation-caused load shed events (i.e., generation shortfalls) have averaged 3.4 events per month over the past two years and are projected to improve modestly to 3.1 events per month in FY24
 - LOLE is “Loss of Load Expectation”, or the number of days when load shed occurred or is forecasted to occur
 - Modeled results do not reflect any contribution from FEMA emergency generation since it is still unclear how long those resources will remain



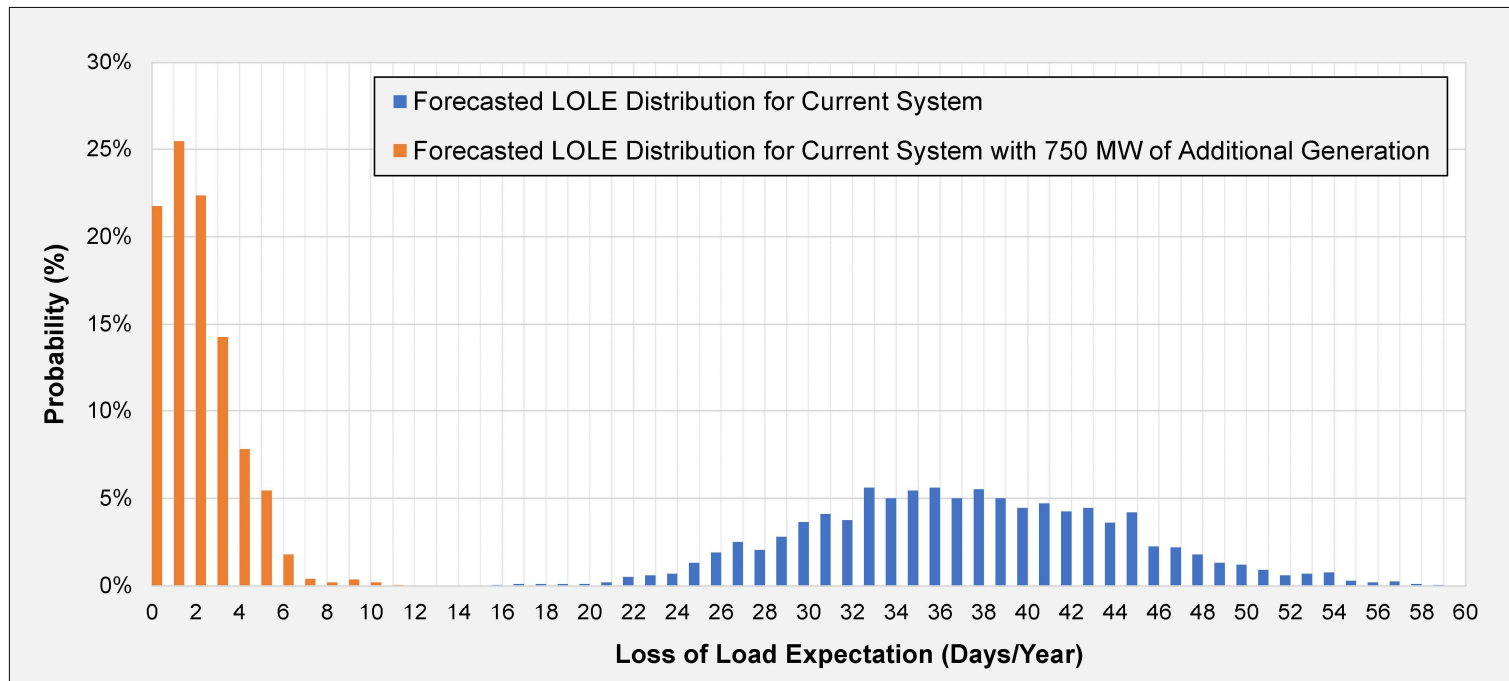
750 MW of additional generation resources should bring the LOLE down closer to industry standards

- The following figure compares the same historical generation-caused load shed events as the previous slide, but this time the forecast includes the 750 MW of additional generation
- The monthly forecast of load shed events due to generation shortfalls fall from 3.1 days per month to 0.2 days per month



The LOLE risk distribution is also significantly improved with an additional 750 MW of generation

- The figure below shows the calculated distribution of loss of load expectation (LOLE) – the distribution illustrates the potential risk of LOLE by presenting the potential outcomes for FY2024 and their associated probability of occurrence
- Adding 750 MW of new generation moves the distribution to the left and makes it thinner – meaning expected LOLE would both be lower and can be more confidently forecasted within a tighter range



The 24-hour risk exposure is reduced down to industry average levels with an additional 750 MW of generation

- The figure below shows the calculated average loss of load hours (LOLH) over the course of the year – a LOLH is an hour where there is loss of load during the day
 - As can be seen, LOLH typically occur in the evening, after the sun has set, due to high electricity consumption
- Adding 750 MW of new generation greatly helps the system meet electrical demand for all hours, including during the evening, which is the time where the system is at the highest risk for load shed

