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

IN RE: THE PERFORMANCE OF THE PUERTO RICO ELECTRIC POWER AUTHORITY

CASE NO.: NEPR-MI-2019-0007

SUBJECT: Motion in Compliance with Resolution and Order of May 16, 2025

MOTION IN COMPLIANCE WITH RESOLUTION AND ORDER OF MAY 16, 2025

TO THE PUERTO RICO ENERGY BUREAU:

COMES NOW, LUMA ENERGY SERVCO, LLC ("LUMA"), through the undersigned legal counsel and respectfully states and requests the following:

I. Introduction

1. On May 16, 2025, the Puerto Rico Energy Bureau of the Public Service Regulatory Board ("Energy Bureau") issued a *Resolution and Order* with the subject *Response to LUMA's January 15 Motion, Response to Genera's February 3 and February 10 Motions, System Reliability Metric Reporting Frequency, and Additional System Reliability Metrics*, directing LUMA and Genera PR, LLC to furnish detailed responses to the Requirements of Information ("ROIs") set forth in Attachment A within twenty (20) calendar days of notice (the "May 16th Order"). Through this Motion, LUMA responds to that directive and provides the requested information.

II. Procedural Background

2. Through a Resolution and Order entered on May 14, 2019, the Energy Bureau initiated a comprehensive data-gathering process for the Puerto Rico Electric Power Authority ("PREPA")

and mandated quarterly performance reporting. Pursuant to Section 5.6 of the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement ("T&D OMA"), LUMA, as an agent of PREPA, submits system data regarding the Transmission and Distribution System ("T&D System").

3. On May 21, 2021, the Energy Bureau adopted baselines and benchmarks for designated metrics and approved an Excel template for uniform reporting by PREPA and LUMA.

4. By Resolution dated April 3, 2023, that template was updated to reflect the transition of legacy generation operations to Genera effective July 1, 2023. Successive orders on December 21, 2023; January 19, 2024; July 10, 2024; and October 18, 2024, refined the reporting template, aligned methodologies with the Annex IX Performance Metrics approved in the *Performance Targets for LUMA Energy Servco, LLC., Case No. NEPR-AP-2020-0025* docket ("LUMA's Targets Proceeding") for reporting purposes, and clarified filing deadlines.

5. On December 26, 2024, the Energy Bureau issued a Resolution and Order whereby it requested additional information "to determine whether performance should be designated as improved or not improved" and explanations on those metrics classified by the Energy Bureau as "Not Improved" when evaluating fiscal year performance. On January 15, 2025, LUMA submitted its *Motion in Compliance with Resolution and Order of December 26, 2024*.

6. On January 17, 2025, Resolution and Order ("January 17 Order"), the Energy Bureau issued a revised template, in addition to requesting LUMA to report historical data for all Annex IX Performance Metrics beginning with FY2025 Q3 and ordered LUMA to respond to new ROIs. In compliance, on February 3, 2025, LUMA submitted its responses to the ROIs included in Attachment A of the January 17 Order through its motion titled *Motion in Compliance with Resolution and Order of January 17, 2025*. In addition, with the *Motion Submitting Quarterly*

Report on System Data for January through March 2025 submission, LUMA provided historical data since it began operations for new metrics for which LUMA has changed the methodology to align with those used in the LUMA's Targets Proceeding.

7. The May 16th Order directs LUMA to begin reporting monthly by the 20th day of the following month, starting in June 2025, the following metrics: System SAIDI (T&D FYTD), System Monthly SAIDI (T&D), System SAIFI (T&D FYTD) and System Monthly SAIFI (T&D). The Energy Bureau established that LUMA may provide preliminary values and may revise, as needed, the prior months' data in future submissions. Furthermore, as mentioned in the Introduction section of this motion, through the May 16 Order, the Energy Bureau introduces proposed generation-related reliability metrics and directed LUMA to answer the five (5) ROIs included in Attachment A of said order.

III. LUMA's Responses to Attachment A ROIs

8. Through this motion, LUMA submits responses to Attachment A of the May 16 Order. *See* Exhibit 1 and Exhibit 2.

9. LUMA remains fully committed to transparency and to reporting all data that is available and collected in the course of fulfilling its responsibilities as the T&D System Operator, subject to the terms of the T&D OMA.

WHEREFORE, LUMA respectfully requests that this Honorable Bureau **take notice of** the aforementioned; **accept** the responses submitted herein as Exhibit 1 and Exhibit 2; and **deem** LUMA in compliance with the May 16th Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 5th day of June 2025.

WE HEREBY CERTIFY that we filed this motion using the electronic filing system of this Energy Bureau and that we will send an electronic copy of this motion to PREPA's counsel of record, Alexis Rivera Medina, arivera@gmlex.net and Mirelis Valle Cancel, mvalle@gmlex.net, and Genera PR LLC, through its counsel of record Jorge Fernández-Reboredo, jfr@sbgblaw.com and the Independent Consumer Protection Office, Hannia Rivera Diaz, hrivera@jrsp.pr.gov.

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Exhibit 1
Response to Requests for Information

Performance Metrics Quarterly Report

Docket Number: NEPR-MI-2019-0007

Response: RFI-LUMA-MI-2019-0007-20250516-PREB-Attachment A-1

REQUEST

1) The Energy Bureau understands that LUMA currently calculates SAIDI and SAIFI in accordance with IEEE 1366-2012 and excludes interruptions classified as Major Event Days, planned interruptions, and interruptions caused by generation events.[13] Please confirm.

RESPONSE

The Energy Bureau's statement is accurate regarding LUMA's methodology for calculating SAIDI and SAIFI. LUMA calculates its Reliability Performance Metrics, specifically System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI), in accordance with IEEE Standard 1366-2012. This standard provides general guidelines for electric power utilities on how to calculate and measure grid reliability indices. Consistent with prudent industry practices and the Transmission and Distribution Operating Maintenance Agreement, certain events are excluded from the calculation of these metrics to provide the most accurate representation of the utility's performance under normal operating conditions. The following events are excluded:

- **Major Event Days (MEDs) and Catastrophic Events**: As defined in IEEE Standard 1366-2012, a MED is any day during which the daily system SAIDI exceeds a predefined threshold known as Tmed. This threshold is calculated using the IEEE 2.5 Beta Method, which identifies days characterized by system stresses beyond normal expectations—often due to severe weather or other extraordinary conditions. MEDs represent statistically significant outage days that impact reliability metrics but may or may not reach catastrophic levels as defined in IEEE 1366-2012.
    - Catastrophic Event is defined as an interruption of electric service resulting from conditions beyond the utility's control that affect at least 10% of the customer base resulting in a sustained outages lasting over five minutes. Such events begin when the number of customers interrupted reaches the specified threshold and conclude only when service is restored to the last customer affected by the event. These events reflect extreme disruptions that exceed typical operational challenges and require special treatment in reporting and analysis. Also, a catastrophic event can be defined as an interruption caused by natural disasters of sufficient severity, such as hurricanes, earthquakes, fires, strong winds, heavy rains leading to floods, landslides, or similar phenomena that prompt a formal state of emergency declaration by the Governor. These events can cause significant interruption of electric service within the affected municipalities with limited access to safely

[13] Annex IX of Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement.

conduct the necessary repairs to the electric grid. Outages under government-declared emergencies may be excluded from standard reliability metrics due to the extraordinary nature of these incidents.

- **Planned Interruptions:** planned interruptions are those interruptions that can be delayed by the utility personnel and performed only after the appropriate or required customer notification.
- **Momentary Interruptions:** As defined by IEEE 1366-2012, the brief loss of power delivery to one or more customers lasting five minutes or less.
- **Interruptions Caused by Generation Events:** Outages originating from generation facilities that result in service interruptions are excluded from the reliability metrics.

Performance Metrics Quarterly Report

Docket Number: NEPR-MI-2019-0007

Response: RFI-LUMA-MI-2019-0007-20250516-PREB-Attachment A-2

REQUEST

2) What is the Major Event Day threshold (Tmed) that LUMA uses to calculate SAIDI and SAIFI metrics?

   A) How does LUMA calculate this threshold? What years of data does it use? Provide any supporting documentation and workpapers, with formulas intact, for the current threshold LUMA is using.

   B) Does LUMA calculate a different Tmed for each reliability district?

   C) How often does LUMA update the Tmed used to calculate reliability metrics?

RESPONSE

Tmed is a threshold value used to identify MEDs based on the SAIDI calculated for outages that began on each day. A day is classified as a MED if its SAIDI exceeds the Tmed threshold, indicating that the system is under unusually high operational and/or design stress. This concept and its methodology are outlined in IEEE Standard 1366-2012.

A) The Tmed threshold value used for FY2025 is 21.38 minutes (See Exhibit 2). As defined in IEEE 1366-2012, the Tmed value is calculated at the end of each reporting period (typically one year) for use during the next reporting period, as follows:

   Collect values of daily SAIDI for five sequential years, ending on the last day of the last complete reporting period; if fewer than five years of historical data are available, use all available historical data until five years of historical data are available. Only those days that have a daily SAIDI value will be used, excluding days that did not have any interruptions. Then, take the natural logarithm (ln) of each daily SAIDI value in the data set and find α (alpha), the average of the logarithms, also known as the log-average of the data set. Find β (beta), the standard deviation of the logarithms, also known as the log-standard deviation of the data set. Then, compute the Threshold using the following equation: $Tmed = e^{(\alpha + 2.5\beta)}$.

B) Tmed is a meant for system level exclusions, as such LUMA does not calculate a separate Tmed for individual districts.

C) Refer to response A above.

Performance Metrics Quarterly Report

Docket Number: NEPR-MI-2019-0007

Response: RFI-LUMA-MI-2019-0007-20250516-PREB-Attachment A-3

REQUEST

3) How does LUMA define momentary versus sustained interruptions? Does LUMA include momentary interruptions in its SAIDI and SAIFI metric calculations?

RESPONSE

In alignment with industry standards, including IEEE Standard 1366-2012, LUMA defines interruptions as follows:

- Momentary Interruption: The brief loss of power delivery to one or more customers lasting five minutes or less.
- Sustained Interruption: An interruption that exceeds five minutes in duration.

Consistent with IEEE Standard 1366-2012 and common industry practice, LUMA excludes momentary interruptions from the calculation of SAIDI and SAIFI. These indices are designed to measure the frequency and duration of sustained interruptions, providing a clear indicator of the utility's performance under normal operating conditions.

Momentary interruptions are typically caused by transient faults and are automatically cleared by protective devices such as reclosers or breakers. Each recloser operation is considered a separate momentary interruption. Currently, LUMA's systems do not account for reclosing operations occurring within five minutes of the initial interruption. Consequently, the calculation of the Momentary Average Interruption Frequency Index (MAIFI) is not feasible at this time.

Performance Metrics Quarterly Report

Docket Number: NEPR-MI-2019-0007

Response: RFI-LUMA-MI-2019-0007-20250516-PREB-Attachment A-4

REQUEST

4) Provide a list of outage cause codes that LUMA uses to categorize service interruptions, inclusive of generation related events. For each code, provide a description and state whether it is included in SAIDI and SAIFI metric calculations.

RESPONSE

LUMA utilizes a set of outage cause codes to classify the reasons behind service interruptions. These codes cover a wide range of causes, including generation-related events. Below is a list of common outage cause codes used by LUMA, and whether they are included in the SAIDI and SAIFI metric calculations:

Cause Code	Description	Include/Exclude
115 kV Transmission Line Source	This code is selected when the interruption in distribution is related to a fault in the 115 kV transmission line. The cause of the transmission fault is provided to the TOC (Transmission Operations Center).	Include
230 kV Transmission Line Source	This code is selected when the interruption in distribution is related to a fault in the 230kV transmission line.	Include
38 kV Transmission Line Source	This code is selected when the interruption in distribution is related to a fault in the 38kV transmission line. The cause of the transmission fault is provided to the TOC (Transmission Operations Center).	Include
Animal or Strange Object	The code applies to any interruption caused by an animal or object.	Include
Animal or Strange Object - Transmission	The code applies to any interruption caused by an animal or object.	Include

Animals	The code applies to any interruption caused by an animal. If the type of animal can be identified, it would help determine the type of mitigation necessary.	Include
Automatic Load Shed	Load shedding due to generation deficiency.	Exclude
Automatic Load Shed - Transmission	Critical safety mechanism designed to protect the bulk power system by automatically reducing demand when it is in danger of becoming unstable due to significant supply-demand imbalances within the high-voltage transmission network.	Include
Bad Weather	This will be used for interruptions occurring due to adverse weather conditions, such as rain and wind.	Include
Bad Weather - Transmission	Refers to adverse meteorological conditions that pose a threat to the reliable operation and physical integrity of the high-voltage electricity transmission infrastructure.	Include
Bad Weather (Lightning)	Faults related to lightning conditions.	Include
Bad Weather (Rain & Wind)	This will be used for interruptions occurring due to adverse weather conditions, such as rain and wind.	Include
Broken / Rusty Hardware	Failure in the hardware, whether it is broken or loose. This may include broken screws or hardware.	Include
Capacitor Failure	Any component of the pole-mounted capacitor bank. The melted fuse is not considered a failure.	Include
Customer-Related Interruption	This code applies to faults where, due to a customer issue, additional customers are affected.	Include
Cutout Failure	Fault occurring in any component of the cutout, excluding the operation of the blown fuse due to overcurrent protection. This may include defects in the fuse holder, contamination issues, problems in the closing mechanism, worn tips, etc.	Include

Damage From Public	Faults caused by external causes to the feeder, such as vehicle accidents, trucks getting entangled with cables, balloons touching the lines, non-LUMA related companies performing nearby work and making contact with the feeder, or any foreign object. This code does not include animals, vegetation, or electrical equipment, as they have specific codes of their own.	Include
Defective Control Device	Refers to malfunction or defective control device.	Include
Defective Pole	Pole that is defective or fails and causes an interruption to customers.	Include
Distribution Substation Bus Support/Structure Failure	Faults occurring in the distribution busbar area, directly caused by a defect in its components, including bus support, insulation, contamination, and metal coating, among others.	Include
Excavation	This refers to interruptions caused by excavations affecting underground distribution facilities. To use this code, these situations must be caused by customers, subcontractors, contractors (NOT LUMA), third parties, and unknown entities.	Include
Failed Protection	The interruption occurs due to a malfunction of a protection device, incorrect settings, or coordination issues in the feeder. An example would be when a feeder operates incorrectly because the relay mistakenly sends a signal.	Include
Feeder Breaker Failure	Any fault related to the circuit breaker (bushing, operating mechanism, all components). It does not include coordination failure of the circuit breaker. This applies damage below the bushing and faults while the circuit breaker was in service (neither opening nor closing), faults during opening, damage during a successful opening, failure to close when it should have closed, and damage during closing.	Include
Feeder Load Transferred	This code is used for interruptions that impact customers on a feeder solely because it is connected to another feeder where a fault occurred. The feeder where the cause occurred will receive the corresponding code, while	Include

	customers on the other feeder will be assigned "Tied Feeder."	
Fire	Interruptions related to fires near feeder structures. These interruptions are usually requested to sectionalize the area near the fire. This does not apply to fires caused by equipment or equipment failures in the electrical network.	Include
Human Error	This code is used when interruptions are caused by incorrect operations or actions by LUMA employees, as well as contractors, that inadvertently affect customers. Examples of this include incorrect feeder sectionalization or tree branches coming into contact with the feeder during maintenance work.	Include
Insulator/ Pin Failure	Failure in the insulators, whether they are broken, loose, or fractured. This may include broken screws or hardware, loose ligatures, broken, loose, or burnt discs, and cracked and contaminated insulators.	Include
Lightning Arrester Failure	Lightning arresters can experience internal failures when moisture enters due to manufacturing defects or deterioration over time. These internal failures can cause the lightning arrester to be unable to protect against lightning, normal voltages, or overvoltages, which could result in increased current, heat, and discharges. Additionally, failures may also be evident in insulation and discs.	Include
Load Shed (Contingency)	This interruption occurs when there is an overload on the transmission line or a deficiency in generation, and the Distribution Operation Center (DOC) chooses to open breakers to reduce the load.	Exclude
Load Shed (Contingency) - Transmission	When DOC selects a breaker to open to remove the load. This decision will be based on the line with overload.	Include
Load Shed (Planned) - Generation	List of feeders (Block of load) to remove the load needed to balance the system.	Exclude

Load Shed (Planned) - Transmission	List of feeders (Block of load) to remove the load needed to balance the system.	Exclude
Major Storm/Earthquake	This code is determined by DOC and is applied exclusively to hurricanes, tropical storms, or major earthquakes. These interruptions are excluded from metrics but are analyzed as part of a major event.	Exclude
No Probable Cause Reported	If, after inspecting a feeder, no probable cause for the fault is identified, this code can be applied. However, its use is recommended to be minimized as it does not help in understanding the root cause of faults in the feeder, making it difficult to effectively identify measures to mitigate them.	Include
Open Jumper	Use this code when there is a damaged conductor, and the failure occurs specifically at a jumper, whether between segments of the main line or in the cables descending to the equipment on the primary side. Connectors failures at the jumpers are included in the code.	Include
Other Causes	This will be used for any other cause that does not have an available code.	Include
Planned Interruption - Customer Request	Describes a scenario where a customer proactively requests a temporary power outage to facilitate specific work or safety measures on their property, with the interruption being scheduled and coordinated with the electricity provider.	Exclude
Planned Interruption - Distribution	This is an interruption created to perform a planned correction. It requires a request and must be planned at least 5 days in advance. A procedure and System Ops approval are needed. These interruptions are excluded from metrics.	Exclude
Planned Interruption - Transmission	A deliberate and coordinated outage of a part of the high-voltage grid to facilitate essential work that ultimately contributes to the reliability, safety, and long-term viability of the bulk power delivery system. These interruptions are carefully managed to minimize the impact on electricity supply to end consumers.	Exclude

Planned Interruption Due To Emergency - Distribution	Utility deliberately schedules and implements a power outage in the local distribution network as a necessary safety precaution or to limit the damage and consequences of an impending or ongoing emergency. While "planned," the underlying cause is an urgent and potentially dangerous situation.	Exclude
Planned Interruption Due To Emergency - Transmission	Strategy to deliberately interrupt the flow of high-voltage electricity to prevent a larger, more catastrophic failure or to safeguard the system and public during a severe emergency. These actions are taken when the risks of not interrupting the system outweigh the risks of the planned outage itself.	Exclude
Pole Breaker Failure	Any failure of the components of the pole-mounted recloser that does not include coordination issues (protection settings). Its normal operation due to protection is not considered the cause of a fault.	Include
Power Transformer Failure	Faults occurring in the distribution substation transformer and all its components. This may include insulation problems, bushings, heating, radiators, coils, oil, mechanical damage, and wear.	Include
Planned Preventive Repair	This Preventive Repair Interruption is used to carry out scheduled work aimed at preventing critical situations and cannot wait more than 48 hours to be carried out. The Preventive Repair Interruption includes, among other actions, repairs, correction of hotspots, equipment replacement, and actions to prevent critical situations.	Exclude
Primary Crossarm Failure	Failure in the cross-arm, whether it is broken, tilted, damaged, rotten, etc.	Include
Primary Pole Failure	Faults where the primary pole, regardless of material, is affected by wear or maintenance causes. It is important to differentiate between a pole broken due to wear or maintenance causes versus those broken or bent due to external situations; for the latter, another code is used.	Include
Primary To Primary Contact	Use for conductors that are tangled but not broken. Also, those need to be re-tensioned.	Include

Primary Wire Break	When there is a broken conductor and the fault occurs within the cable itself, not at a connector or a jumper, it may be due to deterioration, heating, or tension, among other causes. In the case of tension, the breakage usually begins with individual wire breakages, and eventually, the wire breaks completely when the remaining wire can no longer withstand the tension. On the other hand, during a short circuit, the conductor can heat up too much, weakening it.	Include
Raise / Lower Service Transformer Tap	The interruption is performed in a controlled manner to adjust the tap changer and correct voltage situations.	Exclude
Regulator Failure	Any failure in components of the regulator.	Include
Secondary Other Equipment	Faults caused by secondary equipment such as pedestals or meter bases, resulting in interruptions for additional customers.	Include
Secondary Pole Failure	Faults occurring on the secondary pole, where only secondary infrastructure is present. If the cause of damage to the pole comes from external factors, a different code would be applied (refer to External Causes).	Include
Secondary To Secondary Contact (Including Neutral)	It applies to faults that occur due to a tangled but not broken secondary conductor, where it is necessary to re-tension or untangle the cable.	Include
Secondary Vegetation	When damage and contact with vegetation occur in secondary infrastructure, this code should be used.	Include
Secondary Wire Break	It is used for interruptions that occur in the secondary conductor after the service transformer.	Include
Service Transformer Failure	This code applies to faults in service transformers, whether pole-mounted, pad-mounted, converters, submersibles, etc., that are burned, crossed, have oil spillage, or have broken primary or secondary insulators.	Include
Switch Failure	Faults related to defective disconnect switches that exhibit conditions of corrosion, mechanical issues, wear, high	Include

	temperatures, electrical arcs, and burnt insulation on the mount.	
Transmission Substation Bus Outage	Faults occurring in the transmission busbar area (115 kV or 38 kV), directly caused by a defect in its components.	Include
Trip Due To Overload	The interruption occurs when a protective device operates due to an overload and not because there has been a fault. For example, a fuse or circuit breaker may trip if the load current exceeds its capacity.	Include
UG - Broken Splice / Terminal	Failed equipment (Broken Splice or Terminal) in the underground cable system.	Include
UG Cable Fault	When a problem occurs with underground cable. Typically, in this type of fault, it is necessary to replace the affected cable.	Include
UG Cable Splice Failure	Faults may arise in splices when insulation is compromised, which can result in overheating. These problems can be caused by corrosion, moisture, installation errors, mechanical damage, sudden temperature changes, electrical overloads, and natural degradation of the splice over time.	Include
UG Cable Termination Failure	Faults can occur in the underground terminations of cables, whether in elbows, stress cones, or risers. These terminations are often affected by moisture, corrosion, insulation degradation, temperature variations, and electrical overloads.	Include
UG Switching Unit Failure	The components of the switching unit and/or the vacuum switch may experience failures due to mechanical wear on parts such as contacts, hinges, and moving parts. Additionally, the accumulation of contaminants can cause insulation degradation, corrosion of parts, and lead to short circuits.	Include
Vegetation Contact	Any fault related to vegetation contacting the electrical infrastructure, such as branches, vines, or bamboo	Include

Vegetation Uprooted Tree	Any fault caused by trees falling on the line. It's important to specify to the DOC if a tree fell and affected the power lines.	Include

Performance Metrics Quarterly Report

Docket Number: NEPR-MI-2019-0007

Response: RFI-LUMA-MI-2019-0007-20250516-PREB-Attachment A-5

REQUEST

5) Please provide any additional information that would be relevant to the Energy Bureau related to the additional system-level reliability metrics the Energy Bureau intends to add to the reporting template.

   A) Unit generation shortfall load shed events

   B) Unit performance load shed events

   C) System SAIDI Generation

   D) System SAIFI Generation

   E) Total System SAIDI

   F) Total System SAIFI

RESPONSE

A) LUMA's existing procedure to collect and process generation shortfall and load shed events is lengthy and heavily dependent on external information. Prior month information processing lags approximately one month. Therefore, LUMA recommends including these statistics, with a one-month delay, in the Quarterly Report on System Data, reported to the Energy Bureau on a quarterly basis.

B) Please refer to response A above.

C) The IEEE 1366-2012 standard focuses on the Transmission and Distribution performance of the electric grid and does not directly apply to the generation segment. Some definitions within the standard explicitly exclude generation-related events, such as "outage" and "interruption." LUMA has no obligation to provide reliability metrics related to generation for any of the generation stakeholders. Moreover, LUMA as the T&D operator does not have the functional responsibility to determine the generation reliability data, however, the generation operators may be able to provide it as part of their operator responsibilities.

D) Please refer to response C above.

E) Please refer to response C above.

F) Please refer to response C above.

Exhibit 2
(To be submitted via email)