

April 28, 2023

VIA ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Docket 3628 – 2022 Service Quality Report (Electric Operations)

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a Rhode Island Energy (“Rhode Island Energy” or the “Company”), enclosed, please find an electronic version¹ of the Company’s Annual Service Quality Report which assesses the quality of the Company’s electric operations for the performance period of January 1, 2022 through December 31, 2022 (the “2022 Service Quality Report” or “Report”). As indicated in the Report, the Company’s performance for both reliability and customer service was within acceptable regulatory levels and, as a result, the Company did not incur a penalty.

The 2022 Service Quality Report stems from the Company’s electric Service Quality Plan (the “SQ Plan”) as approved by the Public Utilities Commission (the “PUC” or “Commission”) through Order Nos. 18294, 19020, and 22456.² The purpose of the SQ Plan is to ensure that customers receive a reasonable level of service. To this end, the SQ Plan establishes performance standards for service reliability, which includes the categories of interruption frequency and interruption duration, and for customer service, which includes the categories of customer contact and telephone calls answered. For each category, a benchmark or range representing a regulatory acceptable performance is set forth. If the Company’s performance falls below the acceptable range in any of the four categories, a penalty is assessed. The Company cannot earn a monetary award for exceeding expectations; however, it can accrue offsets for good performance in one category which may be used to offset a penalty incurred in the other categories. For additional details on the SQ Plan, please see Attachment 1 of the Settlement Agreement.³

¹ Per a communication from Commission counsel on October 4, 2021, the Company is submitting an electronic version of this filing followed by six (6) hard copies filed with the Clerk within 24 hours of the electronic filing.

² Through Order No. 18294, the PUC approved a Settlement Agreement between the Company and the Division of Public Utilities and Carriers (Division) which incorporated the SQ Plan to be effective January 1, 2005 (the Settlement Agreement). The SQ Plan also includes amendments made in 2007 (Order No. 19020) and 2016 (Order No. 22456).

³ See [http://www.ripuc.ri.gov/eventsactions/docket/3628-NEC-Ord18294\(7-12-05\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/3628-NEC-Ord18294(7-12-05).pdf)

For 2022, the Company did not incur a penalty. Specifically, the Company's performance fell within an acceptable regulatory range for each of the four categories, meaning there were no penalties assessed. For a summary of the results, please see Section 2 of the Report.

In addition, the Report: (1) References quarterly reports filed by the Company that detail the worst performing circuits; (2) References monthly reports filed by the Company that detail trouble/non-outages; (3) Calculates the Company's annual meter reading performance; and (4) Identifies Major Event Days. In accordance with the SQ Plan, Major Event Days are not factored into the Company's performance under this Report and are separately analyzed and reported. For additional details on these items, please see Section 3 of the Report.

Thank you for your attention to this filing. If you have any questions, please contact me at 401-784-4263.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew S. Marcaccio".

Andrew S. Marcaccio

Enclosures

cc: Docket 3628 Service List

The Narragansett Electric Company
d/b/a Rhode Island Energy

2022 Service Quality Report

April 28, 2023

Submitted to:
Rhode Island Public Utilities Commission
RIPUC Docket No. 3628

Submitted by:



Rhode Island Energy[™]

a PPL company

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SECTION 1: RELIABILITY AND CUSTOMER SERVICE PERFORMANCE STANDARDS

Interruption Frequency and Duration

Under the Service Quality Plan, an interruption is defined as the loss of electric service to more than one customer for more than one minute. The interruption duration is defined as the period of time, measured in minutes, from the initial notification of the interruption event to the time when service has been restored to the customers. Interruptions are tracked using System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI). SAIFI is calculated by dividing the total number of customers interrupted by the total number of customers served. SAIFI measures the number of times per year the average customer experienced an interruption. This is an average, so in any given year some customers will experience no interruptions, and some will experience several interruptions. SAIDI measures the length of interruption time that the average customer experienced for the year. It is calculated by dividing the total customer minutes of interruption by the total number of customers served. Certain events are defined as Major Event Days and are excluded from the calculation of reliability performance standards for penalty and offset assessment. There was one Major Event Day that occurred during 2022. The Major Event Day was December 23.

<u>2022 Total Frequency Standard</u>		<u>2022 Frequency (SAIFI) Results</u>	
<u>Frequency of Interruptions</u>	<u>(Penalty)/Offset</u>	<u>Frequency of Interruptions per Customer</u>	<u>Annual (Penalty)/Offset</u>
Greater than 1.18	(\$916,000)		
1.06-1.18	linear interpolation		
0.84-1.05	\$0	0.866	\$0
0.75-0.83	linear interpolation		
Less than 0.75	\$229,000		

<u>2022 Duration (SAIDI) Standard</u>		<u>2022 Duration (SAIDI) Results</u>	
<u>Duration of Interruptions</u> <u>(minutes)</u>	<u>(Penalty)/Offset</u>	<u>Duration of</u> <u>Interruptions</u> <u>(minutes)</u>	<u>Annual</u> <u>(Penalty)/Offset</u>
Greater than 89.9	(\$916,000)		
72.0-89.9	linear interpolation		
45.9-71.9	\$0	62.48	\$0
36.7-45.8	linear interpolation		
Less than 36.7	\$229,000		

CUSTOMER SERVICE PERFORMANCE STANDARDS

Customer Contact Survey

The customer contact survey results are based on responses from Rhode Island Energy electric customers from a survey performed by an independent third-party consultant, Praxis Research Partners. Praxis surveys a random sample of customers who have contacted Rhode Island Energy recently to determine their level of satisfaction with their most recent contact with the Company regarding any call reason. Survey results are based on a composite measure of two questions from Rhode Island Energy’s internal contactor survey: (1) Overall, on a scale from 1 to 10, where 1 means “dissatisfied”, and 10 means “satisfied”, how satisfied are you with the services provided by Rhode Island Energy? (2) Overall, on a scale from 1 to 10, where 1 means “dissatisfied”, and 10 means “satisfied”, how satisfied are you with the quality of service provided by the telephone representative? The individual score for each question is the percentage of respondents who provided a rating of “8”, “9”, or “10” on a 10-point scale, where 1 means “dissatisfied”, and 10 means “satisfied”. The “percent satisfied” composite score is a simple arithmetic average of the satisfaction score from each question.

<u>2022 Customer Contact Standard</u>		<u>2022 Customer Contact Results</u>	
<u>Percent Satisfied</u>	<u>(Penalty)/Offset</u>	<u>Percent Satisfied</u>	<u>Annual (Penalty)/Offset</u>
Less than 74.4%	(\$184,000)		
74.4%-78.7%	linear interpolation		
78.8%-87.6%	\$0	80.90%	\$0
87.7%-92.0%	linear interpolation		
More than 92.0%	\$46,000		

Telephone Calls Answered Within 20 Seconds

The calls answered performance standard reflects the annual percentage of calls answered within 20 seconds, specifically for electric customers. “Calls answered” include calls answered by a customer service representative (CSR) and calls completed within the Voice Response Unit (VRU). The time to answer is measured once the customer selects to either speak with a CSR or use the VRU.

<u>2022 Calls Answered Standard</u>		<u>2022 Calls Answered Results</u>	
<u>% Answered Within 20</u>	<u>(Penalty)/Offset</u>	<u>% Answered</u>	<u>Annual</u>
<u>Seconds</u>		<u>Within 20</u>	<u>(Penalty)/Offset</u>
		<u>Seconds</u>	
Less than 53.5%	(\$184,000)		
53.5% - 65.7%	linear interpolation		
65.8% - 90.4%	\$0	85.90%	\$0
90.5% - 100.0%	linear interpolation, to maximum of \$46,000		

SECTION 2: CALCULATION OF PENALTY/OFFSET

Rhode Island Energy
2022 Results of Service Quality Plan
Calculation of Penalty/Offset

<u>Performance Standard</u>	<u>Potential Penalty</u> (a)	<u>Potential Offset</u> (b)	<u>2022 Results</u> (c)	<u>Maximum Penalty</u> (d)	<u>One Std Dev. Worse Than Mean</u> (e)	<u>Mean</u> (f)	<u>One Std Dev. Better Than Mean</u> (g)	<u>Maximum Offset</u> (h)	<u>Annual (Penalty)/Offset</u> (i)
Reliability - Frequency	\$ 916,000	\$ 229,000	0.87	1.18	1.05	0.94	0.84	0.75	\$0
Reliability - Duration	\$ 916,000	\$ 229,000	62.5	89.9	71.9	57.5	45.9	36.7	\$0
Customer Service - Customer Contact Survey	\$ 184,000	\$ 46,000	80.9%	74.4%	78.8%	83.2%	87.6%	92.0%	\$0
Customer Service - Telephone Calls Answered	\$ 184,000	\$ 46,000	85.9%	53.5%	65.8%	78.1%	90.4%	100.0%	\$0
Total Penalty/Offset	\$ 2,200,000	\$ 550,000							\$0

Notes:

Columns (a), (b), and (d)-(h) are per the Amended Electric Service Quality Plan, RIPUC Docket No. 3628.

Column (c) represents the actual 2022 annual results for the performance standards listed in the first column.

Column (i) is calculated as follows:

- For Reliability Standards:

If Column (c) is between Column (g) and Column (e): \$0

If Column (c) is between Column (h) and Column (g): $[\text{Column (g) - Column (c)}] \div [\text{Column (g) - Column (h)}] \times \text{Column (b)}$

If Column (c) is between Column (e) and Column (d): $[\text{Column (c) - Column (e)}] \div [\text{Column (d) - Column (e)}] \times \text{Column (a)}$

If Column (c) is greater than Column (d): 100% of Column (a)

If Column (c) is less than Column (h): 100% of Column (b)

- For Customer Service Standards:

If Column (c) is between Column (e) and Column (g): \$0

If Column (c) is between Column (g) and Column (h): $[\text{Column (c) - Column (g)}] \div [\text{Column (e) - Column (d)}] \times \text{Column (b)}$

If Column (c) is between Column (d) and Column (e): $[\text{Column (e) - Column (c)}] \div [\text{Column (e) - Column (d)}] \times \text{Column (a)}$

If Column (c) is less than Column (d): 100% of Column (a)

If Column (c) is greater than Column (h): 100% of Column (b)

SECTION 3: ADDITIONAL REPORTING CRITERIA

Under the Company's Service Quality Plan, the following additional reporting criteria are required to be filed with the PUC.

1. **Reporting Requirement:** Each quarter, the Company will file a report of 5% of all circuits designated as worst performing on the basis of customer frequency.

Included in the report will be:

1. The circuit ID and location.
2. The number of customers served.
3. The towns served.
4. The number of events.
5. The average duration.
6. The total customer minutes.
7. A discussion of the cause or causes of events.
8. A discussion of the action plan for improvements including timing.

Results: The Company filed its first quarter 2022 feeder ranking results on July 26, 2022, the second quarter results on October 27, 2022, the third quarter results on November 15, 2022, and fourth quarter results on February 2, 2023.

2. **Reporting Requirement:** The Company will track and report monthly the number of calls it receives in the category of Trouble, Non-Outage. This includes inquiries about dim lights, low voltage, half-power, flickering lights, reduced TV picture size, high voltage, frequently burned-out bulbs, motor running problems, damaged appliances and equipment, computer operation problems, and other non-interruptions related inquiries.

Results: The Company filed the required Trouble, Non-Outage reports during 2022, with the final report for the 13 months ended December 2022 filed on January 23, 2023.

3. **Reporting Requirement:** The Company will report its annual meter reading performance as an average of monthly percentage of meters read.

Results: During 2022, the Company’s annual meter reading performance (as an average of monthly percentage of meters read) was 98.88% compared to 98.60% in 2021, and 98.19% during 2020. The following table details the percentage of meters read per month for 2022, 2021 and 2020.

Monthly Percentage of Meters Read

	2022	2021	2020
January	98.71%	98.59%	99.01%
February	98.71%	98.53%	99.07%
March	98.75%	98.63%	98.72%
April	98.90%	98.70%	97.85%
May	98.96%	98.70%	97.88%
June	98.95%	98.75%	97.67%
July	98.95%	98.66%	97.92%
August	99.12%	98.36%	97.05%
September	98.96%	98.83%	98.27%
October	98.76%	98.57%	98.32%
November	98.95%	98.18%	98.38%
December	98.87%	98.69%	98.17%
YTD Average	98.88%	98.60%	98.19%

4. **Reporting Requirement:** For each event defined as a Major Event Day, the Company will prepare a report, which will be filed annually as part of the annual Service Quality filing, detailing the following information:
1. Start date/Time of event
 2. Number/Location of crews on duty (both internal and external crews)
 3. Number of crews assigned to restoration efforts
 4. The first instance of mutual aid coordination
 5. First contact with material suppliers
 6. Inventory levels: pre-event/daily/post-event
 7. Date/Time of request for external crews
 8. Date/Time of external crew assignment
 9. # of customers out of service by hour
 10. Impacted area
 11. Cause
 12. Weather impact on restoration
 13. Analysis of protective device operation
 14. Summary of customers impacted

Results: IEEE Std. 1366-2012¹ identifies reliability performance during both day-to-day operations and Major Event Days. Major Event Days represent those few days during the year on which the energy delivery system experienced stresses beyond that normally expected, such as severe weather. A day is considered a Major Event Day if the daily SAIDI exceeds a threshold value, calculated using the IEEE methodology. For 2022 the T_{MED} value was 6.88 minutes of SAIDI (using IEEE Std. 1366-2012 methodology). There was one major storm day that exceeded this threshold in 2022. The storm occurred on December 23. The storm details are described below.

¹ RIPUC Order No 19020 refers to IEEE Std. 1366-2003. This standard has been superseded by IEEE Std. 1366-2012. The updated standard requires no changes for identifying Major Event Days or calculating thresholds.

December 23, 2022, Storm

1. Start date/Time of event:

The storm began on December 22, with scattered interruptions starting at 4:00 a.m. in the early morning of December 23. The peak was around 8:19 a.m. on December 23. The peak reached 11,818 customers interrupted.

2. Number/Location of crews on duty (both internal and external crews):

The Company secured a total of 331 internal and external field crews to restore power to customers in Rhode Island, consisting of approximately 192 external crews and 139 internal crews. The internal and external field crew numbers included transmission and distribution overhead line, forestry, substation, underground, wires down, and damage assessment personnel.

3. Number of crews assigned to restoration efforts:

At peak, the Company had the following crews performing restoration activities throughout the impacted areas in the State.

Crew Type

Internal Overhead Line - 126 crews
External Overhead Line - 330 crews
Internal Wire Down - 150 crews
Internal Underground - 27 crews
Internal Substation - 152 crews
Contractor Forestry - 246 crews

4. The first instance of mutual aid coordination:

The Incident Commander for Rhode Island Energy did request mutual assistance from companies in the North Atlantic Mutual Assistance Group (“NAMAG”) to support restoration for this event. On the morning of December 21, 2022, the Company requested 100-line workers to support anticipated restoration efforts.

5. First contact with material suppliers:

The first contact with material suppliers was on December 22.

6. Inventory levels: pre-event/daily/post-event:

PLANT#	1107	1108	1115	1120	1101 Alloc.
LOCATION	LINCOLN	PROVIDENCE	NORTH KINGSTOWN	MIDDLETOWN	RI Allocated Inventory Balance @ NEDC
12/23/2022	-	\$909,205	-	\$137,728	-

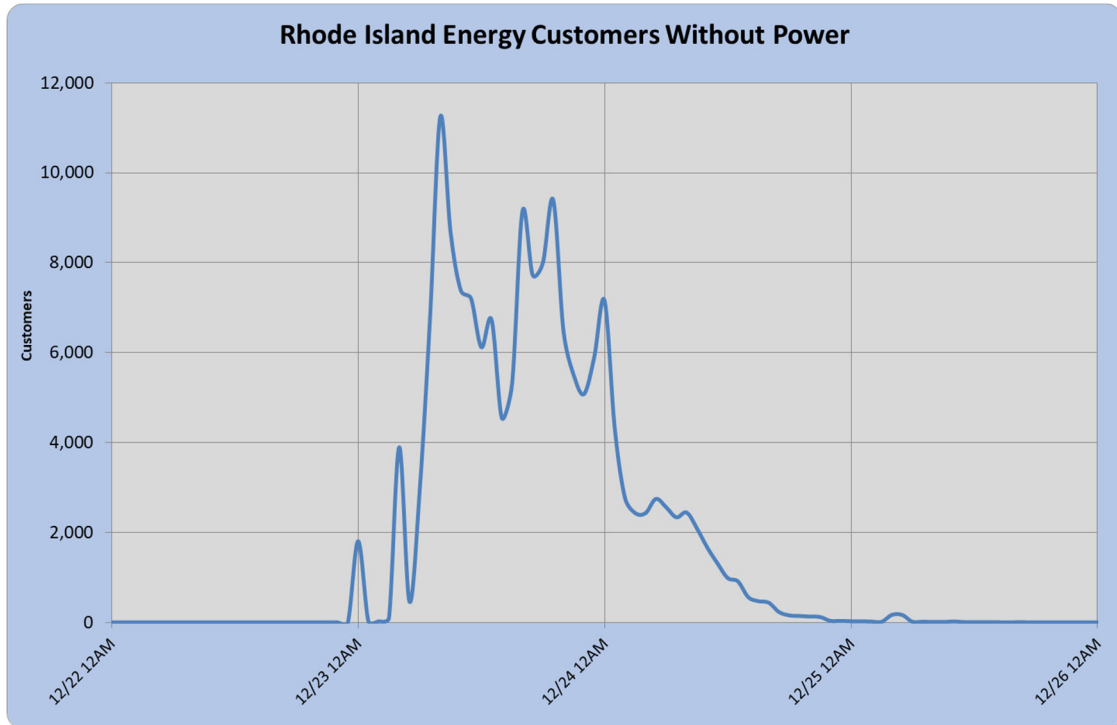
7. Date/Time of request for external crews:

Given the potential magnitude of the storm and forecast of hazardous winds, the Company secured crews in advance from its contractors of choice and other outside contractors to support restoration efforts for all its regional preparation for the storm, consistent with its Emergency Response Plan. The first request for external contractor crews was at 3:30 p.m. on December 19.

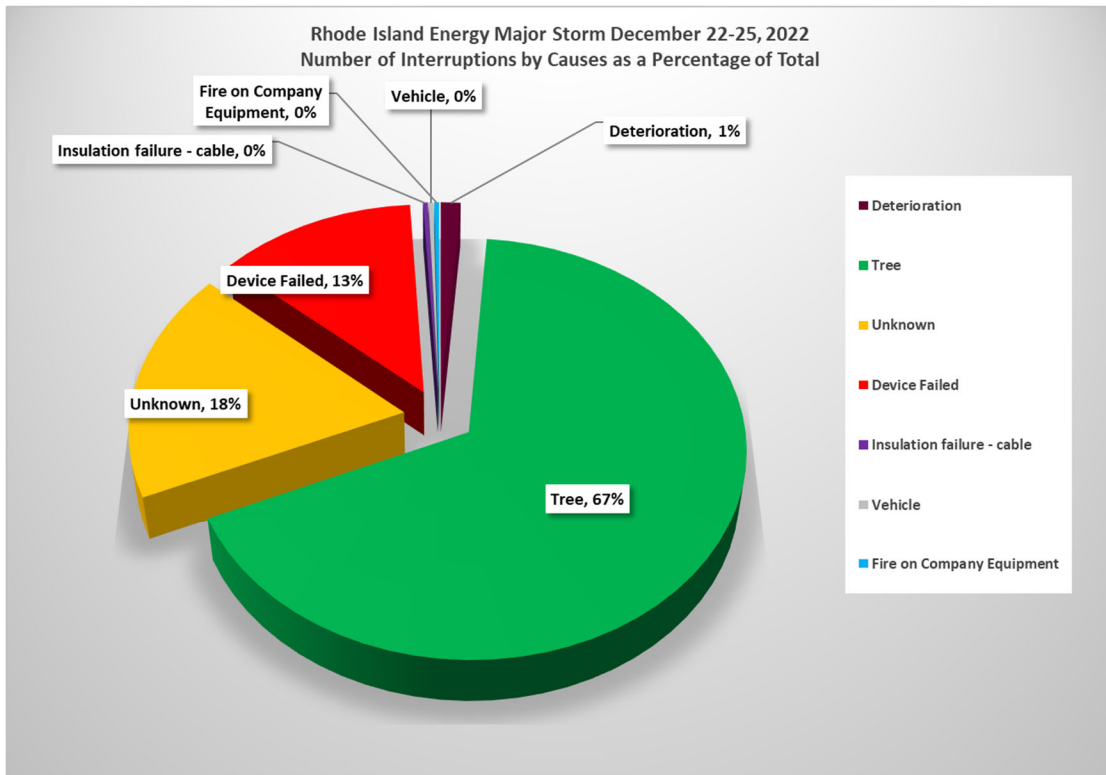
8. Date/Time of external crew assignment:

External crews were assigned to work around 9:00 am on December 23.

9. # of customers out of service by hour:



11. Cause:



12. Weather impact on restoration:

The storm was a long duration weather event that resulted in moderate damage to the Company’s electrical system. The storm brought heavy rain and strong wind gusts to the state, along with a sharp drop in temperatures as expected. Peak wind gusts were generally in the 40-45 mph range, with Providence experiencing a peak gust of 64 mph and 1.5 inches of rain accumulated. The Town of Tiverton was affected most heavily with approximately 81 percent of customers impacted by the event.

13. Analysis of protective device operation:

Rhode Island Energy maintains a wide array of protection and interrupting devices designed to separate faulted components from the electrical system while containing outages to the smallest area practicable. On the distribution system, those devices include fuse cutouts, reclosers, and circuit breakers of various designs. On the transmission system, interrupting devices include circuit breakers, air-break switches, and circuit

switchers. Protection relays are used to detect the faults and operate the interrupting device(s) to isolate a faulted component(s).

For the distribution system, design standards exist that indicate how protection devices are to be deployed and coordinated with other devices. Distribution engineers evaluate such devices under normal and fault conditions. Where recent performance may indicate a need for improvement, Rhode Island Energy performs engineering studies and makes improvements. During a major storm like this event, outages in the distribution system may be far too extensive to assess the function and coordination of individual protection devices in detail, as the focus of storm response is on service restoration. A meaningful analysis would be difficult to perform unless there were specific indications of protection equipment mis-operation.

Protection standards, guides and practices also exist and are followed in the design of Rhode Island Energy's transmission system. Post-event analysis of all interruptions in the Rhode Island Energy Bulk Electric System (BES) is performed to confirm proper operation of protection systems. If an improper operation is identified, further analysis is conducted to identify the cause and to propose and implement a solution. In addition, Rhode Island Energy undertakes analysis of transmission and substation protection devices and coordination where there is evidence of mis-operation.

14. Summary of customers impacted:

December 23, 2022

On December 23, Rhode Island experienced 460 interruptions that affected 45,070 customers and 9,364,955 customer minutes of interruption. On average these interruptions resulted in 0.09 SAIFI, 18.69 minutes of SAIDI. Since a SAIDI value of 18.69 minutes exceeded the threshold value of 6.88 minutes, December 23 is qualified as a Major Event Day under the IEEE methodology.

December 24, 2022

On December 24, Rhode Island experienced 58 interruptions that affected 1,059 customers and 280,714 customer minutes of interruption. On average these interruptions resulted in 0.0021 SAIFI, 0.56 minutes of SAIDI. Since a SAIDI value of 0.56 minutes did not exceed the threshold value of 6.88 minutes, December 24 is not qualified as a Major Event Day under the IEEE methodology.


December 25, 2022

On December 25, the restoration was still ongoing, but the daily SAIDI value was very small and less than the threshold value of 6.88 minutes. December 25 is not qualified as a Major Event Day under the IEEE methodology.

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate were electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



 Joanne M. Scanlon

April 28, 2023

 Date

**Rhode Island Energy– Electric Service Quality Plan – Compliance - Docket
 3628 Service List Updated 06/30/2022**

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