

Lindsay Baxter  
Manager, Regulatory and Clean Energy Strategy  
[lbaxter@duqlight.com](mailto:lbaxter@duqlight.com)  
(412) 393-6224



October 28, 2022

**VIA ELECTRONIC FILING**

Ms. Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
2<sup>nd</sup> Floor, Room-N201  
400 North Street  
Harrisburg, PA 17120

Re: **Duquesne Light Company**  
**Quarterly Electric Reliability Report – 3<sup>rd</sup> Quarter 2022**  
**Docket No. M-2016-2522508**

Dear Secretary Chiavetta:

The report is submitted in two versions, proprietary and non-proprietary. Enclosed is the **non-propriety** version, which can be made available to the public at the above-referenced docket. The proprietary version has been submitted via overnight mail to the Secretary.

If you have any questions regarding the information contained in this filing, please feel free to contact me.

Sincerely,

Lindsay A. Baxter  
Manager, Regulatory and Clean Energy Strategy

Enclosure

cc (w/ redacted version):

Dan Searfoorce ([dsearfoorc@pa.gov](mailto:dsearfoorc@pa.gov))  
Harry Bidelspach ([hbidelspac@pa.gov](mailto:hbidelspac@pa.gov))  
John Van Zant ([jvanzant@pa.gov](mailto:jvanzant@pa.gov))  
Patrick Cicero ([pcicero@paoca.org](mailto:pcicero@paoca.org))  
Steven Gray ([sgray@pa.gov](mailto:sgray@pa.gov))  
Sharon Webb ([swebb@pa.gov](mailto:swebb@pa.gov))



***Duquesne Light Company  
Third Quarter 2022  
Electric Reliability Report  
to the  
Pennsylvania Public Utility Commission***

***October 28, 2022***

**57.195 Reporting Requirements**

**(e)(1)** *A description of each major event that occurred during the preceding quarter, including the time and duration of the event, the number of customers affected, the cause of the event and any modified procedures adopted in order to avoid or minimize the impact of similar events in the future.*

No major events occurred during the third quarter of 2022.

**(e)(2)** *Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the electric distribution company’s service territory for the preceding quarter. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer interruptions, the number of customers affected, and the customer minutes of interruption. If MAIFI values are provided, the report shall also include the number of customer momentary interruptions.*

**RELIABILITY BENCHMARKS AND STANDARDS**

**Duquesne Light Company**

**System Performance Measures with Major Events Excluded**

Entire System				
	SAIDI	SAIFI	CAIDI	MAIFI
<b>Benchmark</b>	126	1.17	108	*
<b>12 Month Standard</b>	182	1.40	130	*
<b>2022 3Q (Rolling 12 mo.)</b>	130	0.89	145	*

\* Sufficient information to calculate MAIFI is unavailable.

Duquesne Light has been a strong performer in reliability over the past 15 years. The Company’s success in this area can be at least partially attributed to the wide deployment of intelligent devices on the system that can quickly isolate a fault to the least number of customers.

Through the third quarter of 2022 (rolling 12 months), Duquesne Light’s CAIDI is above both the benchmark and the 12-month standard, SAIDI is above the benchmark, and SAIFI performance is below both the benchmark and standard. The increase in CAIDI and SAIDI is primarily attributable to weather impacts. Over the past decade, fluctuations have been observed in the average, minimum, and maximum temperatures; wind speed; total inches of precipitation; and the number of days with precipitation. Notable increases of approximately 20 mph have been observed in both sustained and gust wind, as well as increases in the amount of and days with precipitation. During the rolling 12 months, Duquesne Light experienced eight PUC reportable storms impacting our system. One of these storms affected over 50,000 customers, which is just below the threshold for an excludable event (10% of customers or approximately 60,000 customers).<sup>1</sup>

<sup>1</sup> See Docket No. M-2021-3023564, Outage Reports to inform the Commission of utility service outages per 52 Pa. Code § 67.1.

CAIDI can also be negatively influenced by improvements in SAIFI. Because CAIDI is calculated by dividing SAIDI by SAIFI, Duquesne Light’s performance in SAIFI has an inverse effect on CAIDI values.

The table below lists one addition that was made to data in August 2022, subsequent to the 2022 Second Quarter Report that was previously submitted to the Commission. The addition is the result of improved data accuracy governance that has been put in place at Duquesne Light. These changes did not affect the 2022 Second Quarter CAIDI, SAIFI and SAIDI.

<u>New Values</u>				<u>Original Values</u>	
<b>Incident #</b>	<b>Date</b>	<b>kVA</b>	<b>kVA Min</b>	<b>kVA</b>	<b>kVA Min</b>
2254040	6/7/22	25	2,200	0	0

**Formulas used in calculating the indices**

$$\text{SAIFI} = \frac{(\text{Total kVA interrupted}) - (\text{kVA impact of major events})}{\text{System Connected kVA}}$$

$$\text{SAIDI} = \frac{(\text{Total kVA-minutes interrupted}) - (\text{kVA-minute impact of major events})}{\text{System Connected kVA}}$$

$$\text{CAIDI} = \text{SAIDI/SAIFI}$$

**Data used in calculating the indices**

Total kVA Interrupted for the Period: 7,091,276 kVA

Total kVA-Minutes Interrupted: 1,030,447,912 kVA-Minutes

System Connected Load as of 6/30/22 7,932,778 kVA

**(e)(3)** *Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available, MAIFI) and other pertinent information such as customers served, number of interruptions, customer minutes interrupted, number of lockouts, and so forth, for the worst performing 5% of the circuits in the system. An explanation of how the electric distribution company defines its worst performing circuits shall be included.*

Circuits are evaluated based on a rolling twelve-month count of lockouts of protective devices (circuit breakers, reclosers, sectionalizers, and line fuses) and on total accumulated kVA-minutes of customer outage time. Circuits that experience multiple lockouts for a device in combination with high total accumulated kVA-minutes of customer outage time in each quarterly rolling twelve-month period are identified and the top 5% are reported as worst-performing circuits.

The list of worst-performing circuits is ranked first by the number of kVA-minutes of outage experienced by customers on these circuits (highest to lowest) and then by device lockouts from highest to lowest. This places a higher priority on circuits with repeat outages affecting customers (SAIFI) while also focusing on outage duration for customers on these circuits (SAIDI).

While repairs are made as quickly as possible following every customer outage, circuits that appear on the worst performing circuits list are targeted for more extensive remediation based on a detailed review of historical outage records looking at root cause problems, field evaluations, and engineering analysis. Project scopes developed as a result of this analysis are incorporated into the Company's Work Plan for engineering, design, and construction. Since the focus is on reducing future customer outage duration and not just outage frequency, special attention is given to establishing/optimizing sectionalizing switch locations and alternate feeds to problem-prone areas of circuits and, where possible, replacing or eliminating equipment that has historically required lengthy repair times as well as a high failure rates.

At the end of each quarter, all previously identified circuits are reviewed to verify that past remediation efforts are working and to look for new reliability issues that may be developing. Serious new reliability problems are addressed immediately without waiting additional periods to collect information. This analysis method provides for timely review of circuit performance by in-house staff and it adapts to the dynamic nature of Duquesne Light's distribution system.

**Special Note:** *Because of sophisticated protection and remote automation technologies that the Company uses on its distribution circuits, not all customers on a circuit identified as a worst performing circuit actually experience significant reliability issues. Circuit problems are generally isolated to one load block of a circuit in less than five minutes with downstream customers only experiencing short momentary outages. Customers upstream of a circuit problem may not even experience a momentary outage. Therefore, many customers on a circuit identified as a poor performer do not experience problems with reliability.*

See Attachment A for a list of worst-performing circuits showing feeder device lockouts and reliability index values associated with each circuit.

**(e)(4) Specific remedial efforts taken and planned for the worst performing 5% of the circuits as identified in paragraph (3).**

**Third Quarter 2022 Rolling 12-Month Circuit Data**

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>1 22869 Midland-Cooks Ferry Breaker</p>	<p>4 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• Two outages were caused by storms.</li> <li>• One outage was caused by wires wrapping together that caused a short circuit.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by high winds.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2019 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2024.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q2 2018. Proposed for 2022.</li> </ul>
<p>2 23770 Traverse Run Fuse Link</p>	<p>10 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Four outages were due to unknown causes.</li> <li>• Four outages were caused by high winds.</li> <li>• One outage was caused by wires wrapping together that caused a short circuit.</li> <li>• One outage was caused by a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2018 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2023.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2020. Proposed for 2025.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>3  23732 Universal  Breaker</p>	<p>3 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by high winds.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Two outages were caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2016. Proposed for 2022.</li> </ul>
<p>4  23602 Clinton<sup>2</sup>  Fuse Link</p>	<p>8 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was due to an unknown cause.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Four outages were due to unknown causes.</li> <li>• One outage was caused by icing.</li> <li>• One outage was caused by high winds.</li> <li>• One outage was caused by a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Next Overhead Line Inspection planned for 2023.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management proposed for 2025.</li> </ul>

<sup>2</sup> Clinton 23602 was established as a new circuit in 2021, which absorbed a portion of the existing Traverse Run Circuit D23770 (inspected in 2018).

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>5  23843 Arsenal  Fuse Link</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by a storm.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by high winds.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2018. Proposed for 2022.</li> </ul>
<p>6  23681 Woodville  Breaker</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by high winds.</li> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2019 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2024.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>7  23670 Montour  Fuse Link</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> <li>• One outage was caused by high winds.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q1 2018. Proposed for 2022.</li> </ul>
<p>8  23953 Evergreen  Breaker</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by the malfunction of company protective equipment.</li> <li>• One outage was caused by wires wrapping together which caused a short circuit.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2020 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2025.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2016. Proposed for 2022.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>9  23763 Wilmerding  Fuse Link</p>	<p>3 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by animal contact.</li> <li>• One outage was caused by high winds.</li> <li>• One outage was caused by a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2017 and all high priority repairs completed.</li> <li>• Overhead Line Inspection planned for 2022.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2019. Proposed for 2023.</li> </ul>
<p>10  22358 Carnegie-Calgon  Breaker</p>	<p>1 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Inside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2021. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>11  23612 Findlay  Fuse Link</p>	<p>3 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by animal contact.</li> <li>• One outage was by an unknown cause.</li> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q2 2021. Proposed for 2025.</li> </ul>
<p>12  23711 Pine Creek  Recloser</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2018 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2023.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>13 23685 West End Breaker</p>	<p>5 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by contact with company equipment by vehicle.</li> <li>• One outage was caused by high winds.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by contact with company equipment by vehicle.</li> <li>• One outage was caused by a landslide, washout, or cave-in.</li> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2019. Proposed for 2023.</li> </ul>
<p>14 23703 North Fuse Link</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was by an unknown cause.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>15  23745 Oakland  Fuse Link</p>	<p>1 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2020. Proposed for 2024.</li> </ul>
<p>16  23660 Crescent  Fuse Link</p>	<p>8 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Five outages were caused by high winds.</li> <li>• Two outages were due to unknown causes.</li> <li>• One outage was caused by excess slack.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2020 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2025.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2020. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>17 23705 North Recloser</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2020 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2025.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2025.</li> </ul>
<p>18 23844 Arsenal Breaker</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2020 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2025.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q2 2012. Proposed for 2026.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>19  4453 Rosslyn  Breaker</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Inside ROW.</li> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2019 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2024.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2026.</li> </ul>
<p>20  23710 Pine Creek  Fuse Link</p>	<p>3 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Three outages were caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2019 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2024.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q1 2018. Proposed for 2023.</li> </ul>
<p>21  23693 Brunot Island  Sectionalizer</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• No outage(s).</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> <li>• One outage was caused by equipment failure.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q3 2019. Proposed for 2023.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>22  23921 Logans Ferry  Recloser</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was due to an unknown cause.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by high winds.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2020. Proposed for 2024.</li> </ul>
<p>23  23631 Sewickley  Breaker</p>	<p>4 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in Outside ROW.</li> <li>• One outage was caused by tree fall-in Inside ROW.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2026.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2025.</li> </ul>
<p>24  23672 Montour  Fuse Link</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• Two outages were caused by equipment failure.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2018 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2023.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q2 2018. Proposed for 2022.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>25 23870 Mt. Nebo Fuse Link</p>	<p>5 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in Inside ROW.</li> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> <li>• One outage was due to an unknown cause.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q4 2021. Proposed for 2025.</li> </ul>
<p>26 23692 Brunot Island Fuse Link</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by a storm.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2019 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2024.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q1 2019. Proposed for 2023.</li> </ul>

Rank, Circuit Name, Device	Outages	Remedial Actions Planned or Taken
<p>27  23708 North  Recloser</p>	<p>2 Total Outage(s)</p> <p>Third Quarter Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul> <p>Previous Outage(s):</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in Outside ROW.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• Distribution Overhead Line Inspection performed in 2022 and all high priority repairs completed.</li> <li>• Next Overhead Line Inspection planned for 2027.</li> <li>• The Company is investigating reliability enhancements for this circuit.</li> <li>• Vegetation Management completed Q2 2018. Proposed for 2023.</li> </ul>

**(e)(5)** *A rolling 12-month breakdown and analysis of outage causes during the preceding quarter, including the number and percentage of service outages, the number of customers interrupted, and customer interruption minutes categorized by outage cause such as equipment failure, animal contact, tree related, and so forth. Proposed solutions to identified service problems shall be reported.*

Proposed solutions to identified service problems are listed in Section (e)(4) above.

**October 1, 2021 through September 30, 2022  
 No PUC Major Event Exclusions**

<b>CAUSE</b>	<b>NO. OF OUTAGES</b>	<b>OUTAGE PERCENTAGE</b>	<b>kVA TOTAL</b>	<b>kVA PERCENTAGE</b>	<b>kVA-MINUTE TOTAL</b>	<b>kVA -MINUTE PERCENTAGE</b>
Storms	509	16%	1,387,342	20%	246,621,300	24%
Trees (Inside ROW)	300	9%	447,381	6%	89,627,965	9%
Trees (Outside ROW)	883	27%	1,671,620	24%	360,640,096	35%
Equipment Failures	718	22%	1,796,045	25%	192,134,970	19%
Overloads	32	1%	60,362	1%	2,299,247	<1%
Vehicles	179	5%	528,434	7%	58,410,383	6%
Contact/Dig In	32	1%	88,317	1%	8,326,605	<1%
Animal Contact	143	4%	202,553	3%	15,679,000	2%
Unknown	348	11%	542,471	8%	34,136,502	3%
Other	135	4%	366,751	5%	22,571,844	2%
<b>TOTALS</b>	<b>3,279</b>	<b>100%</b>	<b>7,091,276</b>	<b>100%</b>	<b>1,030,447,912</b>	<b>100%</b>

**(e)(6)** Quarterly and year-to-date information on progress toward meeting transmission and distribution inspection and maintenance goals/ objectives.

2022 Transmission and Distribution Goals and Objectives							
Program Project	Unit of Measurement	Target for 2022 3Q	Actual for 2022 3Q	3Q Percent Complete	Targets for Year 2022	Actual YTD for 2022	Year End % Complete
<b>Communications Goals</b>							
Communication Battery Maintenance	Batteries	32	9	28%	128	90	70%
<b>Overhead Distribution Goals</b>							
Recloser Inspections	Circuits	39	27	69%	131	88	67%
Pole Inspections	Poles	6,682	9,790	147%	17,814	17,893	100%
OH Line Inspections	Circuits	39	27	69%	131	88	67%
OH Transformer Inspections	Circuits	39	27	69%	131	88	67%
Padmount & Below Grade Insp	Circuits	0	0	N/A	80	80	100%
<b>Overhead Transmission Goals</b>							
Helicopter Inspections	Circuits	0	0	N/A	11	15	136%
Ground Inspections	Structures	0	0	N/A	347	21	6%
<b>Substations Goals</b>							
Circuit Breaker Maintenance	Breakers	90	68	75%	387	261	67%
Station Transformer Maintenance	Transformers	0	7	N/A	49	47	96%
Station Battery Maintenance	Batteries	215	215	100%	860	640	74%
Station Relay Maintenance	Relays	489	402	89%	1,537	1,413	92%
Station Inspections	Sites	474	471	99%	1,896	1,416	75%
<b>Underground Distribution Goals</b>							
Manhole Inspections	Manholes	200	110	55%	700	498	71%
Major Network Insp (Prot Relay)	Ntwk Protectors	20	3	15%	92	27	29%
Minor Network Visual Inspection (Transformer/Protector/Vault)	Ntwk Transformers	190	4	2%	576	561	97%
<b>Underground Transmission Goals</b>							
Pressurization and Cathodic Protection Plant Inspection	Work Orders	106	106	100%	424	319	75%
<b>Vegetation Management Goals</b>							
Overhead Line Clearance	Circuit Overhead Miles	375	343	91%	1,300	1,142	88%

**(e)(7)** Quarterly and year-to-date information on budgeted versus actual transmission and distribution operation and maintenance expenditures in total and detailed by the EDC's own functional account code or FERC account code as available.

Budget Variance Recap – O&M Expenses  
For the Three Months Ending September 30, 2022  
(In Whole Dollars)  
Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$15,465,129	\$23,374,844	\$7,909,715
<b>Human Resources</b>	\$7,441,713	\$4,643,316	(\$2,798,397)
<b>Operations/Operation Services</b>	\$15,117,298	\$14,484,141	(\$633,157)
<b>Technology</b>	\$11,699,629	\$12,723,962	\$1,024,333
<b>General Corporate*</b>	\$19,814,725	\$18,066,920	(\$1,747,805)
<b>Total</b>	<b>\$69,538,494</b>	<b>\$73,293,183</b>	<b>\$3,754,689</b>

\*Includes Finance, Office of General Counsel, and Senior Management costs.

Budget Variance Recap – O&M Expenses  
Year to Date through September 30, 2022  
(In Whole Dollars)  
Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$38,868,506	\$47,969,805	\$9,101,299
<b>Human Resources</b>	\$19,154,749	\$14,798,931	(\$4,355,818)
<b>Operations/Operation Services</b>	\$41,762,444	\$43,011,377	\$1,248,933
<b>Technology</b>	\$37,191,736	\$38,287,994	\$1,096,258
<b>General Corporate*</b>	\$58,754,146	\$57,420,707	(\$1,333,439)
<b>Total</b>	<b>\$195,731,581</b>	<b>\$201,488,814</b>	<b>\$5,757,233</b>

\*Includes Finance, Office of General Counsel, and Senior Management costs.

**(e)(8)** *Quarterly and year-to-date information on budgeted versus actual transmission and distribution capital expenditures in total and detailed by the EDC's own functional account code or FERC account code as available.*

Budget Variance Recap – Capital  
For the Three Months Ending September 30, 2022  
(In Whole Dollars)  
Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$2,762,871	\$2,222,398	(\$540,473)
<b>Human Resources</b>	\$4,803,019	\$3,642,697	(\$1,160,322)
<b>Operations/Operation Services</b>	\$67,061,845	\$70,437,002	\$3,375,157
<b>Technology</b>	\$8,012,481	\$11,580,050	\$3,567,569
<b>General Corporate*</b>	\$20,080,037	\$16,365,756	(\$3,714,281)
<b>Total</b>	<b>\$102,720,253</b>	<b>\$104,247,903</b>	<b>\$1,527,650</b>

\*Includes Finance, Office of General Counsel, and Senior Management costs.

Budget Variance Recap – Capital  
Year to Date through September 30, 2022  
(In Whole Dollars)  
Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$7,120,688	\$6,668,630	(\$452,058)
<b>Human Resources</b>	\$13,332,276	\$11,365,280	(\$1,966,996)
<b>Operations/Operation Services</b>	\$181,354,278	\$213,942,642	\$32,588,364
<b>Technology</b>	\$27,197,195	\$38,055,439	\$10,858,244
<b>General Corporate*</b>	\$56,225,952	\$49,243,610	(\$6,982,342)
<b>Total</b>	<b>\$285,230,389</b>	<b>\$319,275,601</b>	<b>\$34,045,212</b>

\*Includes Finance, Office of General Counsel, and Senior Management costs.

(e)(9) *Dedicated staffing levels for transmission and distribution operation and maintenance at the end of the quarter, in total and by specific category (e.g. linemen, technician, and electrician).*

<b>Job Title</b>	<b>Number of Employees</b>
Telecom Splicer/Trouble Tech	5
Electronic Technician	16
Telecom Technician	2
<b>Total Telecom</b>	<b>23</b>
Electrical Equipment Technician	39
Protection & Control Technician	37
Yard Group Leader	3
Rigger	5
Laborer	3
<b>Total Substation</b>	<b>87</b>
UG Splicer	36
UG Cable Inspector	10
Cable Tester	1
Network Operator	11
Equipment Material Handler	1
<b>Total Underground</b>	<b>59</b>
Apprentice T&D	1
Equipment Attendant	1
Lineworker	127
Service Crew Leader	5
Equipment Material Handler	5
<b>Total Overhead</b>	<b>139</b>
Right of Way Agent	4
Surveyor	4
<b>Total Real Estate</b>	<b>8</b>
<b>Total Street Light Changer</b>	<b>5</b>
Engineering Technician	47
GIS Technician	9
T&D Mobile Worker	4
Test Technician, Mobile	5
<b>Total Engineering</b>	<b>65</b>
Senior Operator Apprentice	94
Senior Operator	28
Troubleshooter	15
<b>Total Senior Operator/Troubleshooter</b>	<b>137</b>
<b>Total Switching Dispatcher</b>	<b>15</b>
<b>Total Employees</b>	<b>538</b>

(e)(10) *Quarterly and year-to-date information on contractor hours and dollars for transmission and distribution operation and maintenance.*

**CONFIDENTIAL INFORMATION**

**3<sup>rd</sup> Quarter 2022**

Contractor Dollars: REDACTED  
Contractor Hours: REDACTED

**YTD 2022**

Contractor Dollars: REDACTED  
Contractor Hours: REDACTED

(e)(11) *Monthly call-out acceptance rate for transmission and distribution maintenance workers presented in terms of both the percentage of accepted call-outs and the amount of time it takes the EDC to obtain the necessary personnel. A brief description of the EDC's call-out procedure should be included when appropriate.*

**CONFIDENTIAL INFORMATION**

**Call-Out Acceptance Rate – 3<sup>rd</sup> Quarter 2022**  
REDACTED

**Amount of Time it Takes to Obtain the Necessary Personnel – 3<sup>rd</sup> Quarter 2022**  
REDACTED

**(d)(2)** *The name, title, telephone number and e-mail address of the persons who have knowledge of the matters, and can respond to inquiries.*

Matthew Thimons – General Manager, Asset Management  
(412) 393-8639, [mthimons@duqlight.com](mailto:mthimons@duqlight.com)

Jaime Bachota – Assistant Controller, Accounting & Financial Reporting  
(412) 393-1122, [jbachota@duqlight.com](mailto:jbachota@duqlight.com)

Jason Keller – Director, Operations Center  
(412) 393-2897, [jkeller@duqlight.com](mailto:jkeller@duqlight.com)

**ATTACHMENT A**

**(e)(3)** *Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available, MAIFI) and other pertinent information such as customers served, number of interruptions, customer minutes interrupted, number of lockouts, and so forth, for the worst performing 5% of the circuits in the system.<sup>3</sup>*

Rank	Circuit No	Circuit Name	Equipment Type	Device	Last Lockout	Ckt KVA	Total KVA Min Interrupted	Total KVA Interrupted	SAIDI	SAIFI	CAIDI
1	22869	Midland-Cooks Ferry	S.S. BREAKER	BREAKER	2022-09-25	31120	43999613	166460	1407.22757	5.310304	264.325441
2	23770	Traverse Run	FUSE LINK	Pole # 289389	2022-05-21	18265	39102060	97308	2127.127724	5.290061	401.838081
3	23732	Universal	S.S. BREAKER	BREAKER	2022-07-23	22910	21126523	89418	922.152902	3.90301	236.267004
4	23602	Clinton	FUSE LINK	Pole # 231501	2022-08-27	25379	18460079	71647	727.3761378	2.823082076	257.653202
5	23843	Arsenal	FUSE LINK	Pole # 350288	2022-07-23	22975	15984424	26434	695.731186	1.150554	604.691836
6	23681	Woodville	S.S. BREAKER	BREAKER	2022-06-22	32960	15565306	171924	472.248361	5.21614	90.535969
7	23670	Montour	FUSE LINK	Pole # 295659	2022-03-28	34595	15490297	149398	447.761149	4.318484	103.684768
8	23953	Evergreen	S.S. BREAKER	BREAKER	2022-03-21	36135	13607077	163726	376.562251	4.530952	83.108834
9	23763	Wilmerding	FUSE LINK	Pole # 263816	2022-03-06	22767	13307070	100266	584.489392	4.404005	132.71767
10	22358	Carnegie-Calgon	S.S. BREAKER	BREAKER	2022-07-23	11000	11475000	8500	1043.181818	0.772727	1350
11	23612	Findlay	FUSE LINK	Pole # 91640	2022-06-27	37333	11028491	43456	295.408646	1.164009	253.785231
12	23711	Pine Creek	RECLOSER	WR1088	2022-07-23	22021	11025075	46616	500.661868	2.116888	236.508387
13	23685	West End	S.S. BREAKER	BREAKER	2022-09-04	19415	10873562	64636	560.05985	3.329177	168.227644
14	23703	North	FUSE LINK	Pole # 45513	2022-07-13	22232	10834363	50552	487.331908	2.273839	214.321154
15	23745	Oakland	FUSE LINK	Pole # 53174	2022-08-21	29485	10815706	21654	366.820619	0.734406	499.478433
16	23660	Crescent	FUSE LINK	Pole # 347506	2022-03-12	33195	10811709	153722	325.995823	4.634317	70.332867
17	23705	North	RECLOSER	WR441	2022-08-22	39215	10426582	42304	270.945069	1.092594	246.467993
18	23844	Arsenal	S.S. BREAKER	BREAKER	2022-09-02	55432	10420346	107039	187.984304	1.930996	97.350928
19	4453	Rosslyn	S.S. BREAKER	BREAKER	2022-06-22	7598	10250080	15903	1349.049749	2.09305	644.537508
20	23710	Pine Creek	FUSE LINK	Pole # 29710	2022-06-09	30310	10069006	60782	332.200791	2.005344	165.657694
21	23693	Brunot Is.	SECTIONALIZER	EA293	2022-04-23	36466	9888973	81695	271.183375	2.240305	121.047469
22	23921	Logans Ferry	RECLOSER	ER623	2022-08-09	30891	9852650	88646	318.948884	2.869637	111.146018
23	23631	Sewickley	S.S. BREAKER	BREAKER	2022-07-25	32880	9845938	66857	299.450669	2.033363	147.268618
24	23672	Montour	FUSE LINK	Pole # 340832	2022-09-09	31830	9649103	86737	303.144925	2.725007	111.245523
25	23870	Mt. Nebo	FUSE LINK	Pole # 208	2022-08-21	33392	9419316	58262	282.083013	1.744788	161.671689
26	23692	Brunot Is.	FUSE LINK	Pole # 32097	2022-07-23	26850	9270178	30024	345.258025	1.118212	308.758926
27	23708	North	RECLOSER	WR371	2022-07-23	31180	8860961	106637	284.187331	3.420044	83.09462

<sup>3</sup> The “Device” column indicates the device that most frequently operated and locked out in response to a fault.