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April 12, 2021

**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 – 1<sup>st</sup> Quarter 2020**  
**Docket No. M-2016-2522508**

Dear Secretary Chiavetta:

Enclosed please find the non-proprietary version of Duquesne Light Company's Quarterly Electric Reliability Report for the first quarter of 2020.

Upon recent consultation with the Bureau of Technical Utility Services, the Company became aware of a possible oversight regarding the electronic filing of this document. The proprietary version was submitted April 30, 2020 via email, as directed in the Emergency Order dated March 20, 2020 (Docket Number M-2020-3019262).

If you have any questions regarding the information contained in this filing, please feel free to contact me or Chris Johnson at 412-393-6496 or [cjohnson@duqlight.com](mailto:cjohnson@duqlight.com).

Sincerely,

A handwritten signature in blue ink, appearing to read "L.A. Baxter".

Lindsay A. Baxter  
Manager, Regulatory and Clean Energy Strategy

Enclosure  
cc (w/ redacted version):  
Dan Searfoorce ([dsearfoorc@pa.gov](mailto:dsearfoorc@pa.gov))  
John Van Zant ([jvanzant@pa.gov](mailto:jvanzant@pa.gov))



*Duquesne Light Company*  
*First Quarter 2020*  
*Electric Reliability Report*  
*to the*  
*Pennsylvania Public Utility Commission*

*April 30, 2020*

**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.*

Duquesne Light had no major events during the first quarter of 2020.

(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<sup>1</sup>**

**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>2020 1Q (Rolling 12 mo)</b>	98	0.95	103	*

\* Sufficient information to calculate MAIFI is unavailable.

**Formulas used in calculating the indices**

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

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

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

<sup>1</sup> Approximate 6% increase in System Connected Load from 2019 to 2020 is the result of a comprehensive circuit by circuit analysis that was conducted in early 2020.

**Data used in calculating the indices**

Total KVA Interrupted for the Period:	7,385,400 KVA
Total KVA-Minutes Interrupted:	759,461,187 KVA-Minutes
System Connected Load as of 3/31/20	7,722,291 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 (SAIFI and 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 operations. 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).**

**First Quarter 2020 Rolling 12 Month Circuit Data**

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>1  23631 Sewickley  Fuse Link</p>	<p>7 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in, one during a storm.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Five outages were caused by tree fall-in, one during a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q3 2017. Proposed for 2021.</li> </ul>
<p>2  23953 Evergreen  Recloser</p>	<p>6 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in, during a storm.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by contact with company equipment by vehicle.</li> <li>• Three outages were caused by tree fall-in.</li> <li>• One outage was caused by flooding.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q3 2016. Proposed for 2021.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>3  23701 North  Fuse Link</p>	<p>6 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Four outages were caused by tree fall-in, two during a storm.</li> <li>• The cause of two outages were unknown, one during a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2016. Proposed for 2021.</li> </ul>
<p>4  23770 Traverse Run  Fuse Link</p>	<p>5 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in, one during a storm</li> <li>• One outage was caused by contact with company equipment by animal.</li> <li>• The cause of one outage was unknown.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> </ul> <p>Vegetation Management completed Q2 2016. Proposed by Q2 2020.</p>
<p>5  23716 Pine Creek  Breaker</p>	<p>5 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in, one during a storm.</li> <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>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q1 2019. Proposed for 2023.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>6 23921 Logans Ferry Fuse Link</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure, during a storm.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were by tree fall-in.</li> <li>• One outage was caused by lightning.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2016. Proposed by Q4 2020.</li> </ul>
<p>7 23870 Mt. Nebo Recloser</p>	<p>4 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-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>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2017. Proposed for 2021.</li> </ul>
<p>8 22869 Midland-Cooks Ferry Fuse Link</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in, during a storm.</li> <li>• One outage was caused by a storm.</li> <li>• One outage was caused by lightning.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2017. Proposed for 2022.</li> <li>• This circuit was reviewed by Protection Engineering to identify any potential device coordination issues. Further work to resolve device coordination issues was completed Q1 2019.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>9  23840 Arsenal  Recloser</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by contact with company equipment by animal.</li> <li>• Two outage were caused by equipment failure.</li> <li>• One outage was caused by wires wrapped together.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Overhead Line Inspection of Arsenal 23840 is slated to be performed in 2020.</li> </ul>
<p>10  23714 Pine Creek  Fuse Link</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> <li>• One outage was caused by tree fall-in.</li> <li>• One outage was caused by contact with company equipment by animal.</li> <li>• One outage was caused by contact with company equipment by vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2018. Proposed for 2023.</li> <li>• This circuit was reviewed by Protection Engineering to identify any potential device coordination issues. The devices were coordinating properly and no further action is necessary.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>11</p> <p>22155 Rankin-Wilksburg Breaker</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> <li>• One outage was caused by storm.</li> <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>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2017. Proposed for 2021.</li> </ul>
<p>12</p> <p>4484 Manchester Breaker</p>	<p>4 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by storm.</li> <li>• Two outages were caused by equipment failure.</li> <li>• The cause of one outage was unknown.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Failed substation equipment has been replaced.</li> </ul>
<p>13</p> <p>23820 Highland Sectionalizer</p>	<p>3 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by wires blown together due to high winds.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by contact with company equipment by vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>14  23950 Wilkinsburg  Fuse Link</p>	<p>3 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in, during a storm.</li> </ul> <p>Previous Outages:</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 tree fall-in.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q2 2019. Proposed for 2024.</li> </ul>
<p>15  23871 Mt. Nebo  Recloser</p>	<p>3 Total Outages</p> <p>First Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2017. Proposed for 2021.</li> </ul>
<p>16  23781 Valley  Fuse Link</p>	<p>3 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was cause by equipment failure.</li> <li>• One outage was caused by tree fall-in.</li> <li>• One outage was caused by contact by company equipment by vehicle.</li> </ul> <p>Previous Outages:</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>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2018. Proposed for 2023.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>17</p> <p>23713 Pine Creek</p> <p>Recloser</p>	<p>3 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q3 2016. Proposed by Q4 2020.</li> </ul>
<p>18</p> <p>23882 Rankin</p> <p>Fuse Link</p>	<p>3 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages were caused by tree fall-in, during a storm.</li> <li>• The cause of one outage was unknown.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q1 2017. Proposed for 2021.</li> </ul>
<p>19</p> <p>23711 Pine Creek</p> <p>Fuse Link</p>	<p>3 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by equipment failure.</li> <li>• The cause of one outage was unknown.</li> <li>• One outage caused by tree fall-in.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2015. Proposed for 2021.</li> </ul>
<p>20</p> <p>23679 Woodville</p> <p>Recloser</p>	<p>2 Total Outages</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• Two outages caused by tree fall-ins.</li> <li>• The cause of one outage was unknown.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q2 2016. Proposed by Q4 2020.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
21  23680 Woodville  Fuse Link	2 Total Outages  Fourth Quarter Outages: <ul style="list-style-type: none"> <li>• One outage was caused by pole failure.</li> </ul> Previous Outages: <ul style="list-style-type: none"> <li>• One outage was caused by lightning, during a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> </ul>
22  23841 Arsenal  Fuse Link	2 Total Outages  Fourth Quarter Outages: <ul style="list-style-type: none"> <li>• One outage was caused by wires wrapped together due to high winds.</li> </ul> Previous Outages: <ul style="list-style-type: none"> <li>• The cause of one outage was unknown, during a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> </ul>
23  23791 Legionville  Fuse Link	2 Total Outages  Fourth Quarter Outages: <ul style="list-style-type: none"> <li>• One outage was cause by tree fall-in.</li> </ul> Previous Outages: <ul style="list-style-type: none"> <li>• One outage was caused by lightning.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q3 2019. Proposed for 2024.</li> </ul>
24  23732 Universal  Fuse Link	2 Total Outages  Fourth Quarter Outages: <ul style="list-style-type: none"> <li>• One outage was cause by equipment failure.</li> </ul> Previous Outages: <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>• The Company will continue to monitor this circuit for reliability issues.</li> </ul>

<b>Rank, Circuit Name, Device</b>	<b>Outages</b>	<b>Remedial Actions Planned or Taken</b>
<p>25  23844 North  Recloser</p>	<p>2 Total Outage</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage caused by tree fall-in, during a storm.</li> <li>• One outage was caused by wires wrapped together due to high winds, during a storm.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q4 2016. Proposed for 2021.</li> </ul>
<p>26  23821 Highland  Recloser</p>	<p>1 Total Outage</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul> <p>Previous Outages:</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>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q2 2017. Proposed for 2021.</li> </ul>
<p>27  4428 Suffolk  Breaker</p>	<p>1 Total Outage</p> <p>Fourth Quarter Outages:</p> <ul style="list-style-type: none"> <li>• No outages.</li> </ul> <p>Previous Outages:</p> <ul style="list-style-type: none"> <li>• One outage was caused by tree fall-in.</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent repairs were made following each outage as necessary.</li> <li>• The Company will continue to monitor this circuit for reliability issues.</li> <li>• Vegetation Management completed Q1 2019. 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.

**April 1, 2019 through March 31, 2020  
 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>
<b>Storms</b>	345	11%	852,911	12%	111,997,021	15%
<b>Trees (Inside ROW)</b>	208	6%	300,633	4%	50,564,606	7%
<b>Trees (Outside ROW)</b>	1,003	31%	2,068,759	28%	258,631,649	34%
<b>Equipment Failures</b>	751	23%	2,238,996	30%	204,526,693	27%
<b>Overloads</b>	34	1%	961	1%	82,536	<1%
<b>Vehicles</b>	194	6%	619,132	8%	55,817,736	7%
<b>Contact/Dig In</b>	22	1%	100,059	1%	1,751,514	<1%
<b>Animal Contact</b>	127	4%	320,283	4%	12,424,383	2%
<b>Unknown</b>	358	11%	519,969	7%	33,757,220	4%
<b>Other</b>	185	6%	363,697	5%	29,907,829	4%
<b>TOTALS</b>	3,227	100%	7,385,400	100%	759,461,187	100%

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

2020 Transmission and Distribution Goals and Objectives							
Program Project	Unit of Measurement	Target for 2020 1Q	Actual for 2020 1Q	1Q Percent Complete	Targets for Year 2020	Actual YTD for 2020	Year End % Complete
<b>Communications Goals</b>							
Communication Battery Maintenance	Battery Tasks	27	28	104%	118	28	24%
<b>Overhead Distribution Goals</b>							
Recloser Inspections	Circuits	33	26	79%	125	26	21%
Pole Inspections	Poles	0	104	NA	17677	104	1%
OH Line Inspections	Circuits	33	26	79%	125	26	21%
OH Transformer Inspections	Circuits	33	26	79%	125	26	21%
Padmount & Below Grade Insp	Circuits	60	71	118%	81	71	88%
<b>Overhead Transmission Goals</b>							
Helicopter Inspections	Number of Circuits	0	0	NA	11	0	0%
Ground Inspections	Number of Structures	247	350	142%	354	350	99%
<b>Substations Goals</b>							
Circuit Breaker Maintenance	Breaker Tasks	90	56	62%	364	56	15%
Station Transformer Maintenance	Transformer Tasks	4	1	25%	44	1	2%
Station Battery Maintenance	Battery Tasks	220	153	70%	880	153	17%
Station Relay Maintenance	Relay Tasks	208	312	150%	1392	312	22%
Station Inspections	Site Visits	465	465	100%	1860	465	25%
<b>Underground Distribution Goals</b>							
Manhole Inspections	Manholes	150	210	140%	700	210	30%
Major Network Insp (Prot Relay)	Network Protectors	26	28	108%	94	28	30%
Minor Network Visual Inspection (Transformer/Protector/Vault)	Network Transformers	230	423	184%	572	423	74%
<b>Underground Transmission Goals</b>							
Pressurization and Cathodic Protection Plant Inspection	Work Orders	93	100	108%	372	100	27%
<b>Vegetation Management Goals</b>							
Overhead Line Clearance	Circuit Overhead Miles	283	344	122%	1300	344	26%

**(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 March 31, 2020  
 (In Whole Dollars)  
 Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$15,233,403	\$15,440,090	\$206,687
<b>Human Resources</b>	4,044,619	4,693,974	649,355
<b>Operations/Operation Services</b>	18,170,987	16,452,181	(1,718,806)
<b>Technology</b>	14,379,527	14,472,244	92,717
<b>General Corporate*</b>	13,882,931	11,068,744	(2,814,187)
<b>Total</b>	\$65,711,467	\$62,127,233	(\$3,584,234)

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

Budget Variance Recap – O&M Expenses  
 YTD 2020  
 (In Whole Dollars)  
 Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$15,233,403	\$15,440,090	\$206,687
<b>Human Resources</b>	4,044,619	4,693,974	649,355
<b>Operations/Operation Services</b>	18,170,987	16,452,181	(1,718,806)
<b>Technology</b>	14,379,527	14,472,244	92,717
<b>General Corporate*</b>	13,882,931	11,068,744	(2,814,187)
<b>Total</b>	\$65,711,467	\$62,127,233	(\$3,584,234)

\*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 March 31, 2020  
 (In Whole Dollars)  
 Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$2,030,644	\$2,307,624	\$276,980
<b>Human Resources</b>	2,612,636	3,540,527	927,891
<b>Operations/Operation Services</b>	67,013,098	77,714,202	10,701,104
<b>Technology</b>	7,565,828	9,659,979	2,094,151
<b>General Corporate*</b>	14,264,492	13,719,463	(545,029)
<b>Total</b>	<b>\$93,486,698</b>	<b>\$106,941,795</b>	<b>\$13,455,097</b>

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

Budget Variance Recap - Capital  
 YTD 2020  
 (In Whole Dollars)  
 Favorable/(Unfavorable)

	<b>Total Actual</b>	<b>Total Budget</b>	<b>Variance</b>
<b>Customer Service</b>	\$2,030,644	\$2,307,624	\$276,980
<b>Human Resources</b>	2,612,636	3,540,527	927,891
<b>Operations/Operation Services</b>	67,013,098	77,714,202	10,701,104
<b>Technology</b>	7,565,828	9,659,979	2,094,151
<b>General Corporate*</b>	14,264,492	13,719,463	(545,029)
<b>Total</b>	<b>\$93,486,698</b>	<b>\$106,941,795</b>	<b>\$13,455,097</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	17
Telecom Technician	2
<b>Total Telecom</b>	<b>24</b>
Electrical Equipment Technician	37
Protection & Control Technician	32
Yard Group Leader	3
Rigger	6
Laborer	2
<b>Total Substation</b>	<b>80</b>
UG Splicer	35
UG Cable Inspector	9
Cable Tester	1
Network Operator	13
Equipment Material Handler	1
<b>Total Underground</b>	<b>59</b>
Apprentice T&D	33
Equipment Attendant	1
Lineworker	134
Service Crew Leader	4
Equipment Material Handler	5
<b>Total Overhead</b>	<b>177</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	34
GIS Technician	7
T&D Mobile Worker	5
Test Technician, Mobile	6
<b>Total Engineering</b>	<b>52</b>
Senior Operator Apprentice	24
Senior Operator	4
Traveling Operator	0
Troubleshooter	11
<b>Total Traveling Operator/Troubleshooter</b>	<b>39</b>
<b>Total Switching Dispatcher</b>	<b>11</b>
<b>Total Employees</b>	<b>455</b>

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

**CONFIDENTIAL INFORMATION**

**1<sup>st</sup> Quarter 2020**

Contractor Dollars: \$ **REDACTED**  
Contractor Hours: **REDACTED**

**YTD 2020**

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 –1<sup>st</sup> Quarter 2020**

**REDACTED**

**Amount of Time it Takes to Obtain the Necessary Personnel – 1st Quarter 2020**

**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 G. Bucek – General Manager, Asset Management  
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Jason Keller – General Manager, Operations Center  
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**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.*

Rank	Circuit No	Circuit Name	Feeder Device	Device Lockouts	Last Lockout	Circuit KVA	Total KVA Interrupted	Total KVA-Minutes	SAIDI	SAIFI	CAIDI
1	23631	Sewickley	80E	7	2020-03-29	32880	84996	7634896	232.2048662	2.585036496	89.82653301
2	23953	Evergreen	ER703	6	2020-03-29	31030	124846	10691547	344.5551724	4.023396713	85.63788187
3	23701	North	65K	6	2019-11-01	20748	95078	7729737	372.5533545	4.582513977	81.29890195
4	23770	Traverse Run	100K	5	2020-01-12	28580	116155	13924994	487.2286214	4.064205738	119.8828634
5	23716	Pine Creek	BKR	5	2020-01-06	34563	140103	14081599	407.4183086	4.053554379	100.5089042
6	23921	Logans Ferry	80E	4	2020-03-30	32875	159362	15743798	478.8987985	4.847513308	98.79267328
7	23870	Mt. Nebo	WR557	4	2019-04-14	33379	61262	10190928	305.3095659	1.835345577	166.349907
8	22869	Midland-Cooks Ferry	65K	4	2020-01-12	45166	203107	19876464	440.0758092	4.496900323	97.86203331
9	23840	Arsenal	WR453	4	2019-08-28	39579	134893	9141276	230.9627833	3.408196266	67.76686707
10	23714	Pine Creek	80E	4	2019-07-31	24285	41480	13183764	542.8768376	1.708050237	317.8342334
11	22155	Rankin-Wilkinsburg	BKR	4	2019-07-30	7032	113922	8741406	1243.08959	16.20051195	76.7315005
12	4484	Manchester	BKR	4	2019-06-28	2940	11733	8305903	2825.137075	3.990816327	707.9095713
13	23820	Highland	EA891	3	2020-03-29	32049	64930	10092026	314.8936316	2.025960248	155.4293239
14	23950	Wilkinsburg	80E	3	2020-03-29	16413	138442	7383705	449.8693109	8.434899165	53.33428439
15	23871	Mt Nebo	WR893	3	2020-03-23	23485	51334	7246810	308.5718544	2.185820737	141.16979
16	23781	Valley	80E	3	2020-02-18	21397	42697	10170593	475.3279899	1.995466654	238.2039253
17	23713	Pine Creek	R100	3	2020-01-08	28949	150383	8307377	286.9659401	5.194756296	55.24146346
18	23882	Rankin	80E	3	2019-12-01	25319	80428	11347692	448.188791	3.176586753	141.0913115
19	23711	Pine Creek	80E	3	2019-09-11	22021	113655	8160584	370.5818991	5.161209754	71.80136378
20	23679	Woodville	R100	3	2019-08-08	18070	53606	7819143	432.7140564	2.966574433	145.8632056
21	23680	Woodville	65K	2	2020-03-29	27442	86237	7415324	270.2180599	3.142518767	85.98773148
22	23841	Arsenal	R200	2	2020-03-03	34765	65760	8749247	251.6682583	1.891557601	133.04816
23	23791	Legionville	80E	2	2020-02-11	16815	33382	8290244	493.0267023	1.985251264	248.3447367
24	23732	Universal	65K	2	2020-02-11	23538	40839	7745593	329.0675928	1.735024216	189.6616714
25	23844	Arsenal	WR872	2	2019-11-27	30732	64224	7935218	258.2070155	2.089808668	123.5553376
26	23821	Highland	R100	1	2020-03-18	33153	40769	7434712	224.2545773	1.2297228	182.3618926
27	4428	Suffolk	BKR	1	2019-08-17	3994	4386	7446298	1864.371057	1.098147221	1697.742362