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**E-FILE**

October 31, 2024

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

**Re: PPL Electric Utilities Corporation  
Quarterly Reliability Report for the  
Period Ended September 30, 2024  
Docket No. M-2023-3039027**

Dear Ms. Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation ("PPL Electric") is the **NON-CONFIDENTIAL** version of PPL Electric's Quarterly Reliability Report for the Period Ended September 30, 2024. The report is being filed pursuant to 52 Pa. Code § 57.195(d).

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on October 31, 2024, which is the date it was filed electronically with the Commission's E-Filing System.

A proprietary and confidential version of this report has also been filed with the Commission on this date via overnight delivery.

If you have any questions regarding this document, please call me at (610) 774-5696.

Respectfully submitted,

Kimberly A. Klock

Enclosures

cc via email: Patrick Cicero, Esquire  
NazAarah Sabree

Mr. Daniel Searfoorce



**PPL Electric Utilities**

**PPL Electric Utilities Corporation**  
**Quarterly Reliability Report**  
**to the**  
**Pennsylvania Public Utility Commission**

*October 2024*

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 2024.

However, it is worth noting that PPL Electric has seen five storms of over 1,000 cases in 2024. Prior to the implementation of FLISR (Fault Location, Isolation and Service Restoration), with one exception every storm of 1,000 or more cases qualified as an excludable PUC Major Event. Since the implementation of FLISR, with one exception every storm of 1,000 or more cases did **not** qualify as an excludable PUC Major Event.

| Event Start Year | Event Type            | Event Description                     | # Cases      | # Customers    | SAIDI      |           |
|------------------|-----------------------|---------------------------------------|--------------|----------------|------------|-----------|
| 2002             | PUC Major             | 12/25/02 - Snow/Ice/Wind              | 1,469        | 184,198        | 74         | PRE FLISR |
| 2003             | PUC Major             | 09/18/03 - Hurricane Isabel           | 3,940        | 495,721        | 207        |           |
| 2003             | PUC Major             | 11/13/03 - Wind                       | 1,723        | 185,210        | 39         |           |
| 2003             | PUC Major             | 07/21/03 - Wind, T&L                  | 1,436        | 202,781        | 44         |           |
| 2003             | PUC Major             | 10/15/03 - Wind                       | 1,136        | 135,528        | 23         |           |
| <b>2004</b>      | <b>PUC Reportable</b> | <b>09/17/04 - Hurricane Ivan</b>      | <b>1,292</b> | <b>111,709</b> | <b>42</b>  |           |
| 2005             | PUC Major             | 01/06/05 - Snow, Sleet, Freezing Rain | 1,886        | 230,980        | 146        |           |
| 2007             | PUC Major             | 12/16/07 - Snow & Ice                 | 1,410        | 179,522        | 81         |           |
| 2011             | PUC Major             | 08/27/2011 - Hurricane Irene          | 3,104        | 428,572        | 297        |           |
| 2011             | PUC Major             | 10/29/2011 - Heavy Wet Snow           | 2,888        | 389,689        | 347        |           |
| 2011             | PUC Major             | 05/26/2011 - Wind                     | 1,341        | 182,719        | 104        |           |
| 2012             | PUC Major             | 10/29/2012 - Hurricane Sandy          | 3,824        | 528,231        | 842        |           |
| <b>2018</b>      | <b>PUC Major</b>      | <b>2018-03-02 MAJ WND RILEY</b>       | <b>2,796</b> | <b>260,037</b> | <b>243</b> |           |
| 2018             | PUC Reportable        | 2018-05-15 PUC T&L                    | 1,516        | 122,086        | 53         |           |
| 2019             | PUC Reportable        | 2019-02-24 PUC WND                    | 1,183        | 79,014         | 18         |           |
| 2019             | PUC Reportable        | 2019-10-31 PUC WND                    | 1,049        | 81,339         | 22         |           |
| 2021             | PUC Reportable        | 2021-09-01 PUC TRP IDA                | 1,212        | 84,698         | 27         |           |
| 2022             | PUC Reportable        | 2022-12-22 PUC WND ELLIOTT            | 1,192        | 75,652         | 16         |           |
| 2024             | PUC Reportable        | 2024-02-13 PUC SNW                    | 1,689        | 128,744        | 63         |           |
| 2024             | PUC Reportable        | 2024-01-12 PUC WND                    | 1,451        | 93,583         | 21         |           |
| 2024             | PUC Reportable        | 2024-06-26 PUC T&L                    | 1,282        | 117,898        | 57         |           |
| 2024             | PUC Reportable        | 2024-08-09 PUC TRP DEBBY              | 1,096        | 61,309         | 18         |           |
| 2024             | PUC Reportable        | 2024-04-03 PUC WND RAN                | 1,095        | 71,668         | 31         |           |

The five 1,000+ case storms in 2024, some or all of which may have qualified as excludable PUC Major Events prior to the implementation of FLISR, contribute a combined 473,000 Customer Interruptions and over 275 million Customer Minutes Interrupted<sup>1</sup>.

<sup>1</sup> This is over half of all CMI for the reporting period.

**2) Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the EDC'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.**

The following table provides data for the 12 months ending June 30, 2024.

|  |          |             |
|--|----------|-------------|
| SAIFI  | BM 0.98  | 1.13        |
|  | STD 1.18 | 1.13        |
| CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)       | BM 145   | 314         |
|  | STD 174  | 314         |
| SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)       | BM 142   | 355         |
|  | STD 205  | 355         |
| MAIFI  |          | 9.4         |
| Average Number of Customers Served <sup>2</sup>            |          | 1,463,444   |
| Number of Sustained Customer Interruptions (Trouble Cases) |          | 30,584      |
| Number of Customers Affected                               |          | 1,658,307   |
| Customer Minutes of Interruptions (CMI)                    |          | 519,908,599 |
| Number of Customer Momentary Interruptions                 |          | 13,814,911  |

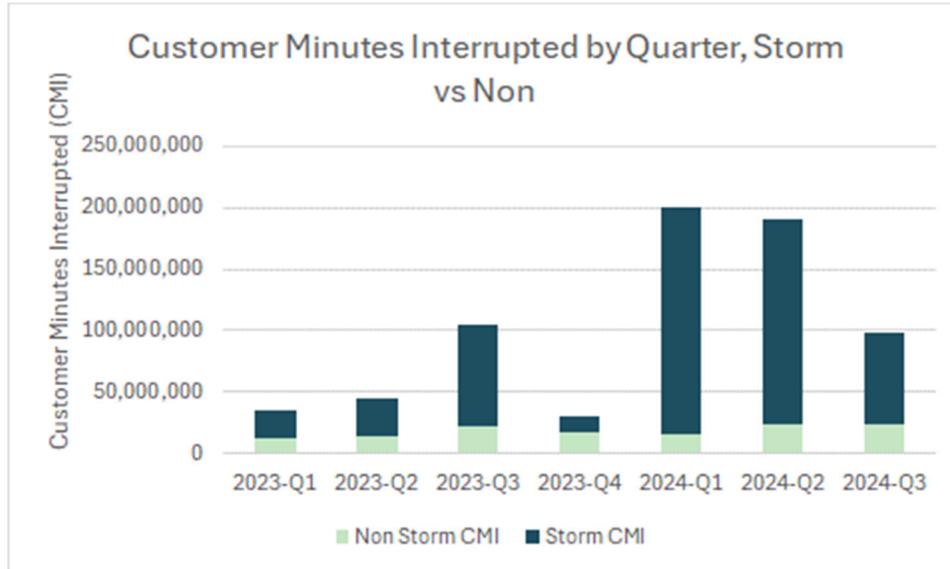
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<sup>2</sup> PPL Electric calculates the annual indices using customers served at the end of period. This is consistent with the method used to calculate PPL Electric's benchmarks.

During the third quarter, there were no (0) PUC Major Events, three (3) PUC reportable events, and five (5) other storms that did not rise to the level of reportability.

For the rolling four quarters ending on 9/30/2024, storm impacts remain highly elevated by historical standards. In 2024 alone, PPL Electric has seen ten storms of 600 cases or higher, including five storms of over 1,000 cases. As mentioned in section (1), the five 1,000+ case events, which may have been excludable prior to the implementation of FLISR, account for over half of all Customer Minutes Interrupted in the reporting period.

While PPL Electric’s third-quarter SAIFI was within the PUC standard, other metrics were significantly behind, largely attributable to high storm impact.



Because weather has a significant impact on volatility in reliability metrics, PPL Electric’s IEEE Metrics are shown below. The IEEE 1366 Standard is a widely used methodology that allows for weather normalized performance evaluation that better reflects system performance during non-major storm events. The table below lists PPL Electric’s IEEE performance metrics compared to the 2023 performance quartiles for large utilities nationally, as issued by the IEEE Annual Reliability Survey<sup>3</sup>. This survey comprises 73 utilities serving 74 million customers across the country.

|                              | IEEE CAIDI | IEEE SAIFI | IEEE SAIDI |
|------------------------------|------------|------------|------------|
| 2020                         | 100        | 0.69       | 69         |
| 2021                         | 124        | 0.68       | 85         |
| 2022                         | 121        | 0.74       | 89         |
| 2023                         | 142        | 0.64       | 91         |
| Rolling 4Q ending 9/30/2024  | 137        | 0.65       | 89         |
| IEEE First Quartile Ceiling  | 105        | 0.75       | 85         |
| IEEE Second Quartile Ceiling | 126        | 0.88       | 114        |

PPL Electric has been a top quartile IEEE SAIFI performer since 2014.

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<sup>3</sup> <https://cmte.ieee.org/pes-drwg/benchmarking/>

**3) Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, CMI, 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 EDC defines its worst performing circuits shall be included.**

The following table provides PUC reliability values for the worst performing 5% of the circuits in the system for the 12 months ended at the current quarter. An explanation of how PPL Electric defines its worst performing circuits is included in Appendix A.

| WPC Rank | Feeder ID | SAIDI | SAIFI | CAIDI | Customers | Cases of Trouble | Customer Minutes Interrupted (CMI) | Customer Interruptions (CI) |
|----------|-----------|-------|-------|-------|-----------|------------------|------------------------------------|-----------------------------|
| 1        | 28602     | 1181  | 393   | 3     | 1,976     | 68               | 2,334,118                          | 5,930                       |
| 2        | 28604     | 1149  | 285   | 4.03  | 1,845     | 98               | 2,121,182                          | 7,436                       |
| 3        | 20402     | 1063  | 321   | 3.31  | 1,643     | 55               | 1,747,472                          | 5,442                       |
| 4        | 24602     | 2189  | 451   | 4.85  | 1,432     | 116              | 3,135,737                          | 6,950                       |
| 5        | 25501     | 1331  | 313   | 4.25  | 1,711     | 153              | 2,278,729                          | 7,273                       |
| 6        | 25801     | 1168  | 301   | 3.88  | 1,863     | 117              | 2,176,992                          | 7,226                       |
| 7        | 63403     | 1915  | 563   | 3.4   | 1,508     | 74               | 2,889,218                          | 5,127                       |
| 8        | 43401     | 2578  | 434   | 5.93  | 995       | 114              | 2,565,316                          | 5,901                       |
| 9        | 23401     | 1229  | 273   | 4.49  | 1,746     | 113              | 2,145,856                          | 7,842                       |
| 10       | 28303     | 1433  | 284   | 5.03  | 1,958     | 129              | 2,807,239                          | 9,854                       |
| 11       | 20601     | 1980  | 385   | 5.13  | 1,490     | 55               | 2,951,277                          | 7,648                       |
| 12       | 59202     | 1089  | 223   | 4.87  | 1,788     | 93               | 1,947,610                          | 8,715                       |
| 13       | 40601     | 2824  | 423   | 6.66  | 874       | 46               | 2,468,490                          | 5,824                       |
| 14       | 54101     | 1345  | 333   | 4.03  | 1,705     | 122              | 2,293,302                          | 6,877                       |
| 15       | 10601     | 1255  | 478   | 2.62  | 1,694     | 114              | 2,126,223                          | 4,443                       |
| 16       | 25402     | 751   | 263   | 2.85  | 1,828     | 98               | 1,373,217                          | 5,214                       |
| 17       | 22601     | 1071  | 289   | 3.7   | 1,248     | 64               | 1,336,944                          | 4,614                       |
| 18       | 16801     | 919   | 186   | 4.94  | 1,662     | 81               | 1,527,588                          | 8,210                       |
| 19       | 45002     | 649   | 100   | 6.49  | 1,451     | 43               | 942,547                            | 9,415                       |
| 20       | 16101     | 1564  | 550   | 2.84  | 1,582     | 138              | 2,474,772                          | 4,499                       |
| 21       | 58402     | 606   | 237   | 2.55  | 1,776     | 80               | 1,076,662                          | 4,532                       |
| 22       | 64101     | 807   | 286   | 2.82  | 1,711     | 57               | 1,381,359                          | 4,828                       |
| 23       | 47002     | 731   | 169   | 4.31  | 2,034     | 121              | 1,486,887                          | 8,769                       |
| 24       | 49804     | 1189  | 325   | 3.65  | 1,352     | 84               | 1,608,686                          | 4,939                       |

| WPC Rank | Feeder ID | SAIDI | SAIFI | CAIDI | Customers | Cases of Trouble | Customer Minutes Interrupted (CMI) | Customer Interruptions (CI) |
|----------|-----------|-------|-------|-------|-----------|------------------|------------------------------------|-----------------------------|
| 25       | 13501     | 595   | 318   | 1.87  | 1,555     | 38               | 926,174                            | 2,904                       |
| 26       | 40602     | 1134  | 529   | 2.14  | 2,482     | 97               | 2,816,215                          | 5,323                       |
| 27       | 16803     | 975   | 353   | 2.76  | 1,140     | 84               | 1,112,038                          | 3,142                       |
| 28       | 46302     | 2691  | 619   | 4.34  | 1,113     | 99               | 2,995,783                          | 4,834                       |
| 29       | 67803     | 374   | 224   | 1.67  | 2,009     | 33               | 752,815                            | 3,353                       |
| 30       | 27502     | 670   | 203   | 3.29  | 2,980     | 47               | 1,997,317                          | 9,819                       |
| 31       | 18001     | 2675  | 454   | 5.89  | 700       | 95               | 1,872,879                          | 4,120                       |
| 32       | 29402     | 695   | 302   | 2.3   | 1,749     | 60               | 1,216,576                          | 4,026                       |
| 33       | 12402     | 3314  | 596   | 5.55  | 570       | 72               | 1,889,430                          | 3,165                       |
| 34       | 24603     | 1849  | 583   | 3.17  | 1,400     | 95               | 2,589,852                          | 4,438                       |
| 35       | 14204     | 538   | 288   | 1.87  | 1,398     | 13               | 752,714                            | 2,610                       |
| 36       | 46004     | 1891  | 526   | 3.59  | 2,076     | 81               | 3,925,911                          | 7,461                       |
| 37       | 59003     | 329   | 155   | 2.13  | 1,579     | 35               | 520,734                            | 3,359                       |
| 38       | 21202     | 298   | 213   | 1.4   | 1,508     | 23               | 449,492                            | 2,110                       |
| 39       | 15704     | 918   | 358   | 2.57  | 1,301     | 79               | 1,195,216                          | 3,338                       |
| 40       | 10504     | 332   | 290   | 1.14  | 1,604     | 15               | 533,325                            | 1,833                       |
| 41       | 59401     | 662   | 414   | 1.6   | 1,804     | 81               | 1,194,683                          | 2,882                       |
| 42       | 46701     | 669   | 227   | 2.94  | 662       | 38               | 442,896                            | 1,949                       |
| 43       | 56504     | 803   | 226   | 3.55  | 1,985     | 143              | 1,594,345                          | 7,040                       |
| 44       | 64802     | 719   | 187   | 3.84  | 1,302     | 90               | 936,497                            | 4,999                       |
| 45       | 28801     | 2266  | 543   | 4.17  | 1,405     | 93               | 3,184,975                          | 5,860                       |
| 46       | 23101     | 975   | 339   | 2.88  | 1,724     | 86               | 1,682,174                          | 4,961                       |
| 47       | 41802     | 1384  | 351   | 3.94  | 533       | 53               | 737,799                            | 2,098                       |
| 48       | 45702     | 541   | 263   | 2.06  | 1,767     | 71               | 957,191                            | 3,637                       |
| 49       | 14008     | 1011  | 322   | 3.14  | 800       | 73               | 808,857                            | 2,511                       |
| 50       | 40201     | 958   | 479   | 2     | 1,688     | 123              | 1,617,347                          | 3,376                       |
| 51       | 20401     | 1307  | 361   | 3.62  | 1,326     | 83               | 1,734,045                          | 4,799                       |
| 52       | 59101     | 951   | 285   | 3.33  | 1,714     | 78               | 1,631,042                          | 5,710                       |
| 53       | 45602     | 687   | 518   | 1.33  | 2,466     | 78               | 1,695,622                          | 3,271                       |
| 54       | 27102     | 2957  | 476   | 6.2   | 899       | 89               | 2,658,702                          | 5,575                       |
| 55       | 15701     | 571   | 223   | 2.56  | 1,184     | 56               | 676,605                            | 3,034                       |
| 56       | 17805     | 685   | 301   | 2.27  | 1,925     | 75               | 1,318,850                          | 4,377                       |
| 57       | 45902     | 1099  | 524   | 2.1   | 1,349     | 82               | 1,482,615                          | 2,829                       |
| 58       | 51502     | 410   | 187   | 2.19  | 1,928     | 18               | 791,177                            | 4,216                       |
| 59       | 28102     | 1137  | 485   | 2.34  | 1,102     | 68               | 1,253,790                          | 2,583                       |
| 60       | 16505     | 389   | 185   | 2.1   | 1,534     | 40               | 597,247                            | 3,221                       |
| 61       | 27901     | 582   | 180   | 3.23  | 1,196     | 52               | 696,923                            | 3,865                       |
| 62       | 41002     | 1040  | 400   | 2.6   | 1,246     | 94               | 1,296,420                          | 3,241                       |
| 63       | 24502     | 1193  | 396   | 3.01  | 1,123     | 81               | 1,340,587                          | 3,380                       |
| 64       | 12302     | 283   | 116   | 2.45  | 1,995     | 25               | 566,373                            | 4,882                       |

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

**01 Circuit 28602 -- BLYTHEBURN 86-02**

Performance Analysis

The BLYTHEBURN 86-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 772 customers for up to 212 minutes resulting in 159,753 CMI.

On June 14, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 548 customers for up to 139 minutes resulting in 76,172 CMI.

On June 22, 2024, a tree contacted an overhead conductor causing an interruption. This outage affected 548 customers for up to 244 minutes resulting in 133,268 CMI.

On July 17, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,551 customers for up to 1,225 minutes resulting in 1,224,283 CMI.

In total, the BLYTHEBURN 86-02 circuit had 68 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (45); animal contacts (10); equipment failure (5); nothing found (4); vehicles (4).

Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, hot spot trimming will be performed.
- In 2024, additional sectionalizing will be evaluated.
- In 2024, the coordination and protection settings will be reviewed and optimized.
- In 2025, 18 fuses will be installed.

## **02 Circuit 28604 -- BLYTHEBURN 86-04**

### Performance Analysis

The BLYTHEBURN 86-04 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 6, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,213 customers for up to 318 minutes resulting in 385,734 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,069 customers for up to 1,001 minutes resulting in 749,157 CMI.

On May 27, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,217 customers for up to 154 minutes resulting in 186,992 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 82 customers for up to 1,660 minutes resulting in 136,110 CMI.

On August 14, 2024, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,834 customers for up to 6 minutes resulting in 11,004 CMI.

On August 15, 2024, a vehicle contact caused an interruption. This outage affected 403 customers for up to 441 minutes resulting in 125,425 CMI.

In total, the BLYTHEBURN 86-04 circuit had 98 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (68); animal contacts (17); equipment failure (5); vehicles (5); other (2); nothing found (1).

### Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, fusing will be installed at over 35 locations.
- In 2024, additional sectionalizing will be evaluated.
- In 2024, a section of this circuit will be transferred to a neighboring circuit.
- In 2025, a three-phase tie will be constructed.

## **03 Circuit 20402 -- ASHFIELD 04-02**

### Performance Analysis

The ASHFIELD 04-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On December 28, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,217 customers for up to 920 minutes resulting in 685,793 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 178 customers for up to 1,812 minutes resulting in 322,438 CMI.

On March 16, 2024, an equipment failure occurred on an overhead transformer causing a circuit breaker to trip to lockout. This outage affected 1,238 customers for up to 200 minutes resulting in 161,974 CMI.

On August 3, 2024, during a period of heavy rain, a vehicle contact caused a recloser to trip to lockout. This outage affected 1,222 customers for up to 47 minutes resulting in 32,381 CMI.

In total, the ASHFIELD 04-02 circuit had 55 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (36); animal contacts (9); equipment failure (6); vehicles (2); nothing found (1); other (1).

### Remedial Actions

- In 2024, additional fusing was installed at five locations.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, transferring a section of this circuit will be evaluated.
- In 2025, full circuit trimming will be performed.
- In 2026, a section of difficult-to-access conductor will be relocated.
- In 2026, a three-phase tie line will be constructed.

## **04 Circuit 24602 -- VARDEN 46-02**

### Performance Analysis

The VARDEN 46-02 circuit experienced eight outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On March 24, 2024, during a period of strong wind, an equipment failure occurred on a pole or pole arm causing an interruption. This outage affected 433 customers for up to 442 minutes resulting in 179,632 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 52 customers for up to 2,931 minutes resulting in 138,692 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 89 customers for up to 1,949 minutes resulting in 173,427 CMI.

On June 22, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 88 customers for up to 2,384 minutes resulting in 203,565 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead fuse causing a recloser to trip to lockout. This outage affected 425 customers for up to 2,540 minutes resulting in 802,988 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 265 customers for up to 459 minutes resulting in 121,635 CMI.

On July 31, 2024, during a period of strong wind, an unidentified issue occurred with an overhead transmission component causing a recloser to trip to lockout. This outage affected 1,210 customers for up to 6 minutes resulting in 7,260 CMI.

On August 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 485 customers for up to 400 minutes resulting in 166,946 CMI.

In total, the VARDEN 46-02 circuit had 116 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (89); equipment failure (11); animal contacts (9); nothing found (3); other (2); vehicles (2).

## Remedial Actions

- In 2024, an existing recloser was upgraded to a Smart Grid device.
- In 2024, a section of underground conductor was replaced.
- In 2024, an existing Smart Grid device was upgraded.
- In 2024, full circuit trimming will be performed.
- In 2024, additional animal guarding will be installed.
- In 2024, two single-phase reclosers will be replaced.
- In 2024, several cross-arms will be replaced.
- In 2024, proactive fault sensors will be installed.
- In 2024, a new Smart Grid device will be installed.

## **05 Circuit 25501 -- MADISONVILLE 55-01**

### Performance Analysis

The MADISONVILLE 55-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 198 customers for up to 1,081 minutes resulting in 214,036 CMI.

On March 3, 2024, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 542 customers for up to 240 minutes resulting in 31,602 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 200 customers for up to 1,064 minutes resulting in 212,758 CMI.

In total, the MADISONVILLE 55-01 circuit had 153 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (109); animal contacts (21); equipment failure (15); nothing found (5); other (2); vehicles (1).

### Remedial Actions

- In 2024, two Smart Grid devices were installed.
- In 2024, a single-phase recloser was replaced.
- In 2024, several poles were replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2025, an existing recloser will be upgraded to a Smart Grid device.

## 06 Circuit 25801 -- SULLIVAN TRAIL 58-01

### Performance Analysis

The SULLIVAN TRAIL 58-01 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 164 customers for up to 2,838 minutes resulting in 465,432 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 800 customers for up to 928 minutes resulting in 337,123 CMI.

On August 13, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,861 customers for up to 746 minutes resulting in 349,395 CMI.

On August 15, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 642 customers for up to 27 minutes resulting in 17,334 CMI.

On September 9, 2024, a vehicle contact caused an interruption. This outage affected 672 customers for up to 19 minutes resulting in 12,761 CMI.

In total, the SULLIVAN TRAIL 58-01 circuit had 117 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (78); animal contacts (19); equipment failure (11); vehicles (6); nothing found (3).

### Remedial Actions

- In 2024, proactive fault sensors were installed.
- In 2024, additional hazard tree removal will be evaluated.
- In 2024, a single-phase tap will be evaluated for additional protective devices.
- In 2024, a section of single-phase will be extended.
- In 2024, two sections of single-phase conductor in a heavily wooded area will be relocated.
- In 2024, transferring a section of this circuit to a neighboring circuit will be evaluated.
- In 2024, a section of three-phase conductor will be evaluated for undergrounding.
- In 2024, several poles will be replaced.
- In 2026, a section of single-phase conductor will be relocated.
- In 2026, three sections of single-phase conductor will be undergrounded.

## **07 Circuit 63403 -- HONEYBROOK 34-03**

### Performance Analysis

The HONEYBROOK 34-03 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On July 16, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,279 customers for up to 3,913 minutes resulting in 1,698,850 CMI.

On July 31, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,049 customers for up to 477 minutes resulting in 213,052 CMI.

On August 1, 2024, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 1,499 customers for up to 638 minutes resulting in 347,077 CMI.

In total, the HONEYBROOK 34-03 circuit had 74 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (47); equipment failure (15); animal contacts (6); contact or dig in (3); nothing found (1); other (1); vehicles (1).

### Remedial Actions

- In 2023, additional fusing was installed.
- In 2024, additional fusing will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, a section of single-phase conductor will be evaluated for transfer to a neighboring circuit.
- In 2025, a single-phase protective device will be installed.

## **08 Circuit 43401 -- BENTON 34-01**

### Performance Analysis

The BENTON 34-01 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On June 22, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 419 customers for up to 2,817 minutes resulting in 657,397 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 615 customers for up to 1,459 minutes resulting in 265,484 CMI.

On August 7, 2024, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 618 customers for up to 334 minutes resulting in 175,898 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 651 customers for up to 575 minutes resulting in 327,823 CMI.

In total, the BENTON 34-01 circuit had 114 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (94); equipment failure (8); animal contacts (6); nothing found (6).

### Remedial Actions

- In 2023, a Proactive Circuit Analysis was performed with several minor remediations implemented.
- In 2024, a section of difficult-to-access single-phase conductor was relocated.
- In 2024, coordination between a recloser and downstream fusing will be optimized.
- In 2024, two sections of difficult-to-access conductor will be evaluated for relocation.
- In 2024, multiple cross-arms will be replaced.
- In 2024, additional fusing will be installed.
- In 2024, a section of three-phase will be evaluated for storm hardening.
- In 2024, an additional Smart Grid device will be installed.

## **09 Circuit 23401 -- HONESDALE 34-01**

### Performance Analysis

The HONESDALE 34-01 circuit experienced seven outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On October 10, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 504 customers for up to 92 minutes resulting in 46,368 CMI.

On December 11, 2023, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 848 customers for up to 467 minutes resulting in 119,107 CMI.

On December 18, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 681 customers for up to 213 minutes resulting in 67,236 CMI.

On January 14, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 823 customers for up to 666 minutes resulting in 195,653 CMI.

On June 21, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 500 customers for up to 379 minutes resulting in 189,095 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead fuse causing a recloser to trip to lockout. This outage affected 501 customers for up to 381 minutes resulting in 119,649 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 789 customers for up to 538 minutes resulting in 422,314 CMI.

In total, the HONESDALE 34-01 circuit had 113 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (80); animal contacts (15); equipment failure (11); nothing found (7).

### Remedial Actions

- In 2024, additional fusing was installed.
- In 2024, hot spot tree trimming was performed.
- In 2024, a section of this circuit was reconductored.
- In 2024, several poles will be replaced.
- In 2024, numerous porcelain cutouts will be replaced.
- In 2024, a single-phase recloser will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, additional fusing will be installed.

- In 2024, additional storm hardening will be evaluated.

## **10 Circuit 28303 -- NEWFOUNDLAND 83-03**

### Performance Analysis

The NEWFOUNDLAND 83-03 circuit experienced eight outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On December 11, 2023, during a period of ice/sleet/snow, an unidentified issue occurred with an overhead switch causing a recloser to trip to lockout. This outage affected 1,484 customers for up to 613 minutes resulting in 324,680 CMI.

On January 9, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 999 customers for up to 122 minutes resulting in 45,501 CMI.

On January 13, 2024, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 1,920 customers for up to 168 minutes resulting in 164,028 CMI.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 348 customers for up to 1,005 minutes resulting in 315,124 CMI.

On February 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 172 customers for up to 1,549 minutes resulting in 209,311 CMI.

On February 28, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 362 customers for up to 1,505 minutes resulting in 165,578 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 362 customers for up to 470 minutes resulting in 170,140 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 91 customers for up to 1,368 minutes resulting in 124,422 CMI.

In total, the NEWFOUNDLAND 83-03 circuit had 129 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (90); animal contacts (17); equipment failure (14); nothing found (5); other (2); vehicles (1).

## Remedial Actions

- In 2024, an existing recloser was replaced with a Smart Grid device.
- In 2024, several poles were replaced.
- In 2024, full circuit trimming will be performed.
- In 2024, a single-phase recloser will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, a section of this circuit will be reconductored.
- In 2024, additional storm hardening will be evaluated.
- In 2025, a Smart Grid device will be upgraded.

## **11 Circuit 20601 -- GREENWOOD 06-01**

### Performance Analysis

The GREENWOOD 06-01 circuit experienced eight outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 6, 2024, during a period of ice/sleet/snow, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 157 customers for up to 792 minutes resulting in 124,298 CMI.

On February 13, 2024, during a period of strong wind, a tree contacted an overhead splice causing an interruption. This outage affected 2,025 customers for up to 2,051 minutes resulting in 1,227,626 CMI.

On March 23, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 916 customers for up to 205 minutes resulting in 36,268 CMI.

On April 8, 2024, during a period of extreme temperatures, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 1,486 customers for up to 415 minutes resulting in 255,282 CMI.

On May 22, 2024, an unidentified issue occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,486 customers for up to 9 minutes resulting in 12,170 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 463 customers for up to 2,489 minutes resulting in 758,956 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 48 customers for up to 2,117 minutes resulting in 101,604 CMI.

On June 27, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 155 customers for up to 2,194 minutes resulting in 175,596 CMI.

In total, the GREENWOOD 06-01 circuit had 55 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (34); animal contacts (10); equipment failure (7); vehicles (2); nothing found (1); other (1).

### Remedial Actions

- In 2024, a Smart Grid device was replaced.
- In 2024, two single-phase reclosers will be replaced.
- In 2024, additional fusing and additional single-phase reclosers will be evaluated.
- In 2024, relocating or rebuilding multiple sections of conductor will be evaluated.
- In 2024, a three-phase tie will be evaluated.

## **12 Circuit 59202 -- THOMPSONTOWN 92-02**

### Performance Analysis

The THOMPSONTOWN 92-02 circuit experienced seven outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 10, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 902 customers for up to 305 minutes resulting in 155,098 CMI.

On January 17, 2024, an equipment failure occurred on an overhead splice causing an interruption. This outage affected 972 customers for up to 187 minutes resulting in 29,799 CMI.

On March 15, 2024, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 963 customers for up to 174 minutes resulting in 77,508 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 163 customers for up to 1,368 minutes resulting in 222,850 CMI.

On August 6, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 97 customers for up to 1,104 minutes resulting in 107,017 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 660 customers for up to 633 minutes resulting in 317,276 CMI.

On August 29, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,133 customers for up to 116 minutes resulting in 130,383 CMI.

In total, the THOMPSONTOWN 92-02 circuit had 93 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (56); equipment failure (21); animal contacts (6); nothing found (6); vehicles (4).

### Remedial Actions

- In 2024, proactive fault sensors were installed.
- In 2024, a section of damaged conductor was repaired.
- In 2024, a switch and associated insulators will be replaced.
- In 2024, a single-phase recloser will be installed.
- In 2024, resourcing a section of this line will be evaluated.
- In 2024, upgrading a recloser to remote operability will be evaluated.
- In 2024, installing a new three-phase recloser will be evaluated.
- In 2024, installing a new single-phase recloser will be evaluated.
- In 2024, reconductoring a section of single-phase line will be evaluated.
- In 2024, the relocation of a section of single-phase line will be evaluated.
- In 2024, undergrounding a section of overhead single-phase line will be evaluated.
- In 2024, re-sourcing and relocating a section of single-phase line will be evaluated.
- In 2025, a recloser will be replaced.

### **13 Circuit 40601 -- PINE GROVE 06-01**

#### Performance Analysis

The PINE GROVE 06-01 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 14, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 871 customers for up to 1,391 minutes resulting in 696,960 CMI.

On January 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 871 customers for up to 528 minutes resulting in 36,370 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 747 customers for up to 4,968 minutes resulting in 995,957 CMI.

On February 22, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 748 customers for up to 207 minutes resulting in 91,704 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 635 customers for up to 413 minutes resulting in 261,417 CMI.

On August 11, 2024, during a period of strong wind, a tree contacted an overhead splice causing a recloser to trip to lockout. This outage affected 747 customers for up to 16 minutes resulting in 11,339 CMI.

In total, the PINE GROVE 06-01 circuit had 46 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (30); animal contacts (4); equipment failure (4); vehicles (3); nothing found (2); other (2); contact or dig in (1).

#### Remedial Actions

- In 2024, hot spot tree trimming was performed.
- In 2024, multiple poles were replaced with more to be completed.
- In 2024, additional storm hardening will be performed.
- In 2024, proactive fault sensors will be installed.
- In 2024, additional fusing will be installed.
- In 2025, a new Smart Grid device will be installed.

### **14 Circuit 54101 -- S SHERMANSDALE 41-01**

#### Performance Analysis

The S SHERMANSDALE 41-01 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 14, 2024, during a period of heavy rain, a vehicle contact caused an interruption. This outage affected 834 customers for up to 217 minutes resulting in 180,969 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 196 customers for up to 1,866 minutes resulting in 365,563 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 252 customers for up to 738 minutes resulting in 127,842 CMI.

On September 29, 2024, during a period of heavy rain, a tree contacted an overhead switch causing a recloser to trip to lockout. This outage affected 605 customers for up to 484 minutes resulting in 274,622 CMI.

In total, the S SHERMANSDALE 41-01 circuit had 122 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (78); equipment failure (20); animal contacts (14); nothing found (7); vehicles (3).

#### Remedial Actions

- In 2023, proactive fault sensors were installed.
- In 2024, four fuses were installed with more to be installed this year.
- In 2024, full circuit trimming will be performed.

- In 2024, an additional single-phase recloser will be installed.
- In 2024, an existing recloser was converted to remote operability with another to be upgraded.
- In 2024, a three-phase tie will be evaluated.
- In 2024, three sections of difficult-to-access single-phase conductor will be evaluated for relocation.
- In 2024, reconductoring a single-phase line will be evaluated.
- In 2024, re-sourcing a section of single-phase line will be evaluated.
- In 2024, a single-phase tie will be evaluated.
- In 2024, upgrading two reclosers to remote operability will be evaluated.
- In 2024, a new three-phase recloser will be evaluated.

## **15 Circuit 10601 -- BLOOMING GLEN 06-01**

### Performance Analysis

The BLOOMING GLEN 06-01 circuit experienced seven outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 17, 2023, an equipment failure occurred on an overhead splice causing a circuit breaker to trip to lockout. This outage affected 1,104 customers for up to 178 minutes resulting in 62,858 CMI.

On November 18, 2023, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 364 customers for up to 867 minutes resulting in 136,932 CMI.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 84 customers for up to 2,664 minutes resulting in 138,121 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 347 customers for up to 3,339 minutes resulting in 607,288 CMI.

On July 16, 2024, during a period of strong wind, a tree contacted an overhead splice causing a recloser to trip to lockout. This outage affected 40 customers for up to 2,661 minutes resulting in 106,440 CMI.

On July 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 55 customers for up to 2,539 minutes resulting in 139,644 CMI.

On August 18, 2024, during a period of strong wind, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 362 customers for up to 1,400 minutes resulting in 147,698 CMI.

In total, the BLOOMING GLEN 06-01 circuit had 114 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (86); animal contacts (16); nothing found (6); equipment failure (4); vehicles (2).

#### Remedial Actions

- In 2024, two single-phase reclosers will be installed.
- In 2024, additional fusing will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2025, two sections of single-phase primary will be undergrounded.
- In 2025, a Smart Grid device will be installed.
- In 2025, a section of three-phase primary will be undergrounded.
- In 2025, a section of single-phase will be reconducted.
- In 2025, seven single-phase reclosers will be installed.
- In 2026, a section of single-phase will be reconducted.

#### **16 Circuit 25402 -- LAKE HARMONY 54-02**

##### Performance Analysis

The LAKE HARMONY 54-02 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 15, 2023, an animal interfered with an overhead conductor causing a recloser to trip to lockout. This outage affected 504 customers for up to 123 minutes resulting in 61,992 CMI.

On December 3, 2023, during a period of heavy rain, an equipment failure occurred on an overhead transformer causing a recloser to trip to lockout. This outage affected 511 customers for up to 438 minutes resulting in 169,222 CMI.

On December 3, 2023, during a period of heavy rain, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 354 customers for up to 314 minutes resulting in 110,957 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 71 customers for up to 1,619 minutes resulting in 114,890 CMI.

On May 8, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 540 customers for up to 17 minutes resulting in 9,185 CMI.

In total, the LAKE HARMONY 54-02 circuit had 98 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (62); animal contacts (17); equipment failure (16); vehicles (2); nothing found (1).

## Remedial Actions

- In 2024, proactive fault sensors will be installed.
- In 2024, additional hazard tree removal will be evaluated.
- In 2024, additional fusing will be evaluated.
- In 2024, a section of this circuit will be refed.
- In 2025, additional fusing will be installed.
- In 2025, additional Smart Grid devices will be installed.
- In 2026, full circuit trimming will be performed.

## **17 Circuit 22601 -- KIMBLES 26-01**

### Performance Analysis

The KIMBLES 26-01 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On December 11, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,253 customers for up to 385 minutes resulting in 292,818 CMI.

On February 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 323 customers for up to 597 minutes resulting in 110,162 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,092 customers for up to 436 minutes resulting in 365,676 CMI.

On July 31, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 538 customers for up to 481 minutes resulting in 95,120 CMI.

In total, the KIMBLES 26-01 circuit had 64 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (31); animal contacts (15); equipment failure (11); nothing found (5); vehicles (2).

### Remedial Actions

- In 2024, two single-phase reclosers will be installed.
- In 2024, an existing recloser will be replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, several poles will be replaced.

## **18 Circuit 16801 -- WAGNERS 68-01**

### Performance Analysis

The WAGNERS 68-01 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 732 customers for up to 396 minutes resulting in 262,194 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 716 customers for up to 248 minutes resulting in 177,224 CMI.

On April 4, 2024, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 719 customers for up to 31 minutes resulting in 22,289 CMI.

On April 4, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 720 customers for up to 345 minutes resulting in 247,845 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 1,478 customers for up to 1,285 minutes resulting in 82,251 CMI.

On August 14, 2024, a tree contacted an overhead conductor. This outage affected 949 customers for up to 16 minutes resulting in 15,184 CMI.

In total, the WAGNERS 68-01 circuit had 81 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (73); equipment failure (3); nothing found (2); animal contacts (1); other (1); vehicles (1).

#### Remedial Actions

- In 2024, a Smart Grid device was replaced.
- In 2024, several poles were replaced.
- In 2025, a section of single-phase will be reconductored.
- In 2025, additional animal guarding will be installed.
- In 2025, two single-phase reclosers will be installed.
- In 2025, two additional reclosers will be installed.
- In 2025, a single-phase tie line will be constructed.
- In 2025, proactive fault sensors will be installed.

## **19 Circuit 45002 -- LIMESTONE 50-02**

### Performance Analysis

The LIMESTONE 50-02 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 10, 2023, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,384 customers for up to 79 minutes resulting in 109,336 CMI.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,384 customers for up to 166 minutes resulting in 227,630 CMI.

On March 14, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,382 customers for up to 26 minutes resulting in 35,558 CMI.

On April 20, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,455 customers for up to 228 minutes resulting in 158,333 CMI.

On June 26, 2024, during a period of strong wind, an unidentified issue occurred with an overhead switch causing a recloser to trip to lockout. This outage affected 1,377 customers for up to 131 minutes resulting in 178,634 CMI.

On September 27, 2024, a tree contacted an unknown component causing a circuit breaker to trip to lockout. This outage affected 1,451 customers for up to 359 minutes resulting in 118,630 CMI.

In total, the LIMESTONE 50-02 circuit had 43 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (23); equipment failure (11); animal contacts (4); nothing found (2); vehicles (2); contact or dig in (1).

### Remedial Actions

- In 2024, additional fusing was installed.
- In 2024, additional fusing will be installed.
- In 2024, an existing Smart Grid device will be upgraded to single-phase operation.
- In 2026, a substation transformer will be upgraded.
- In 2026, a three-phase tie will be constructed.

## **20 Circuit 16101 -- BINGEN 61-01**

### Performance Analysis

The BINGEN 61-01 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 13, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 172 customers for up to 1,445 minutes resulting in 233,904 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 85 customers for up to 1,526 minutes resulting in 129,710 CMI.

On May 4, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,022 customers for up to 125 minutes resulting in 126,963 CMI.

On August 9, 2024, during a period of strong wind, a tree contact caused a load break fuse to operate. This outage affected 215 customers for up to 1,405 minutes resulting in 216,042 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 518 customers for up to 256 minutes resulting in 109,615 CMI.

In total, the BINGEN 61-01 circuit had 138 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (108); animal contacts (14); equipment failure (9); nothing found (6); other (1).

### Remedial Actions

- In 2024, additional lightening arrestors were installed.
- In 2024, additional animal guarding was installed.
- In 2024, several poles were replaced.
- In 2024, additional single-phase switches will be installed.
- In 2024, hot spot tree trimming will be performed.
- In 2024, a section of single-phase will be reconfigured.
- In 2025, four single-phase reclosers will be installed creating multiple single-phase ties.
- In 2025, several sections of single-phase will be upgraded and reconducted.
- In 2025, several poles will be upgraded.

## **21 Circuit 58402 -- MOUNT ROCK 84-02**

### Performance Analysis

The MOUNT ROCK 84-02 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On June 29, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 746 customers for up to 618 minutes resulting in 225,902 CMI.

On July 10, 2024, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,329 customers for up to 78 minutes resulting in 85,817 CMI.

In total, the MOUNT ROCK 84-02 circuit had 80 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (48); animal contacts (14); equipment failure (10); nothing found (4); vehicles (2); contact or dig in (1); other (1).

### Remedial Actions

- In 2023, full circuit trimming was performed.
- In 2024, six additional fuses were installed.
- In 2024, a new tie line will be installed.
- In 2024, a three-phase tie will be evaluated for upgrade to remote operability.
- In 2024, an additional three-phase sectionalizing device will be evaluated.
- In 2024, proactive fault sensors will be installed.
- In 2024, resourcing a section of single-phase line will be evaluated.
- In 2024, converting a section of overhead single-phase line to underground will be evaluated.
- In 2024, an additional single-phase recloser will be evaluated.

## **22 Circuit 64101 -- RED FRONT 41-01**

### Performance Analysis

The RED FRONT 41-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On October 18, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 705 customers for up to 336 minutes resulting in 144,842 CMI.

On July 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 726 customers for up to 1,474 minutes resulting in 482,201 CMI.

On August 1, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,704 customers for up to 667 minutes resulting in 295,512 CMI.

In total, the RED FRONT 41-01 circuit had 57 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (38); equipment failure (9); animal contacts (5); nothing found (5).

### Remedial Actions

- In 2024, additional single-phase sectionalizing devices will be installed.
- In 2024, a three-phase sectionalizing device was replaced with a Smart Grid device.
- In 2024, additional fusing will be evaluated.
- In 2024, full circuit trimming will be performed.
- In 2025, a three-phase protective device will be replaced with a Smart Grid device.

## **23 Circuit 47002 -- HUGHESVILLE 70-02**

### Performance Analysis

The HUGHESVILLE 70-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On April 17, 2024, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 2,029 customers for up to 8 minutes resulting in 16,252 CMI.

On June 9, 2024, an equipment failure occurred on an overhead splice causing a circuit breaker to trip to lockout. This outage affected 2,004 customers for up to 136 minutes resulting in 130,710 CMI.

On June 22, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 174 customers for up to 658 minutes resulting in 114,490 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 84 customers for up to 2,562 minutes resulting in 135,575 CMI.

In total, the HUGHESVILLE 70-02 circuit had 121 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (72); equipment failure (22); animal contacts (14); nothing found (6); vehicles (6); other (1).

## Remedial Actions

- In 2024, additional animal guarding will be installed.
- In 2024, a section of single-phase will be evaluated for relocation.
- In 2024, an existing recloser will be upgraded to a Smart Grid device.
- In 2024, three sections of three-phase conductor will be evaluated for relocation.
- In 2024, the circuit breaker will be replaced.
- In 2025, a section of single-phase will be relocated underground or reconducted.
- In 2025, an existing Smart Grid device will be upgraded.

## **24 Circuit 49804 -- UNIVERSITY 98-04**

### Performance Analysis

The UNIVERSITY 98-04 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,341 customers for up to 315 minutes resulting in 248,759 CMI.

On March 15, 2024, an improper operation occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,112 customers for up to 266 minutes resulting in 61,982 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 213 customers for up to 4,106 minutes resulting in 711,977 CMI.

On July 11, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 407 customers for up to 499 minutes resulting in 202,690 CMI.

In total, the UNIVERSITY 98-04 circuit had 84 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (52); animal contacts (15); equipment failure (11); nothing found (4); contact or dig in (1); Improper Design (1).

## Remedial Actions

- In 2024, a three-phase tie line was constructed.
- In 2024, a section of single-phase will be re-fed.
- In 2024, a Proactive Circuit Analysis was performed with several minor remediations implemented.
- In 2024, a section of conductor will be undergrounded.
- In 2024, the protection settings on this circuit will be evaluated and optimized.
- In 2024, lines will be reframed outside of the substation.
- In 2024, additional fusing will be installed.
- In 2025, full circuit tree trimming will be performed.
- In 2026, storm hardening will be performed.

## **25 Circuit 13501 -- MC MICHAELS 35-01**

### Performance Analysis

The MC MICHAELS 35-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 25, 2023, an equipment failure occurred on an overhead splice causing an interruption. This outage affected 718 customers for up to 280 minutes resulting in 68,542 CMI.

On December 30, 2023, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 573 customers for up to 1,023 minutes resulting in 450,204 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 168 customers for up to 983 minutes resulting in 165,086 CMI.

In total, the MC MICHAELS 35-01 circuit had 38 outages between October 2023 and September 2024, with the causes breaking down as follows: animal contacts (13); tree related (12); equipment failure (9); vehicles (3); nothing found (1).

### Remedial Actions

- In 2024, full circuit trimming was performed.
- In 2024, a section of this circuit was undergrounded.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, numerous porcelain cutouts will be replaced.

## **26 Circuit 40602 -- PINE GROVE 06-02**

### Performance Analysis

The PINE GROVE 06-02 circuit experienced more than ten outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a load break disconnect switch to be interrupted. This outage affected 38 customers for up to 3,269 minutes resulting in 124,222 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 215 customers for up to 4,724 minutes resulting in 327,252 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 409 customers for up to 875 minutes resulting in 337,746 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 158 customers for up to 2,124 minutes resulting in 335,489 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 102 customers for up to 3,566 minutes resulting in 243,016 CMI.

On February 16, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 547 customers for up to 28 minutes resulting in 15,310 CMI.

On March 2, 2024, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 686 customers for up to 119 minutes resulting in 81,380 CMI.

On April 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 687 customers for up to 353 minutes resulting in 242,462 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 29 customers for up to 4,292 minutes resulting in 124,450 CMI.

On August 6, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 159 customers for up to 680 minutes resulting in 108,032 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 96 customers for up to 1,322 minutes resulting in 126,895 CMI.

In total, the PINE GROVE 06-02 circuit had 97 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (63); animal contacts (14); equipment failure (14); nothing found (4); other (1); vehicles (1).

#### Remedial Actions

- In 2023, full circuit trimming was performed.
- In 2024, proactive fault sensors will be installed.
- In 2024, two sections of difficult-to-access conductor will be relocated.
- In 2024, additional fusing will be installed.
- In 2024, several poles will be replaced.

### **27 Circuit 16803 -- WAGNERS 68-03**

#### Performance Analysis

The WAGNERS 68-03 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On March 11, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 110 customers for up to 1,467 minutes resulting in 161,290 CMI.

On July 17, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 90 customers for up to 1,743 minutes resulting in 156,784 CMI.

In total, the WAGNERS 68-03 circuit had 84 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (70); animal contacts (9); equipment failure (5).

#### Remedial Actions

- In 2024, additional sectionalizing devices were installed.
- In 2024, additional animal guarding will be installed.
- In 2024, a new tie line will be evaluated.
- In 2025, two single-phase reclosers will be installed.
- In 2025, proactive fault sensors will be installed.

## **28 Circuit 46302 -- ROHRSBURG 63-02**

### Performance Analysis

The ROHRSBURG 63-02 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 22, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 247 customers for up to 1,534 minutes resulting in 248,289 CMI.

On January 10, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 226 customers for up to 493 minutes resulting in 101,639 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 47 customers for up to 2,816 minutes resulting in 128,099 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 249 customers for up to 3,284 minutes resulting in 359,547 CMI.

On June 27, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 52 customers for up to 2,663 minutes resulting in 138,476 CMI.

On August 6, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,115 customers for up to 2,462 minutes resulting in 1,239,572 CMI.

In total, the ROHRSBURG 63-02 circuit had 99 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (75); equipment failure (12); animal contacts (6); nothing found (4); contact or dig in (1); other (1).

### Remedial Actions

- In 2024, proactive fault sensors were installed on this circuit.
- In 2024, additional fusing will be installed.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2025, full circuit trimming will be performed.
- In 2026, storm hardening will be performed.

## **29 Circuit 67803 -- WEST LANCASTER 78-03**

### Performance Analysis

The WEST LANCASTER 78-03 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 26, 2023, an equipment failure occurred on an overhead switch. This outage affected 1,552 customers for up to 237 minutes resulting in 367,824 CMI.

On February 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 487 customers for up to 522 minutes resulting in 161,987 CMI.

In total, the WEST LANCASTER 78-03 circuit had 33 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (11); equipment failure (10); animal contacts (8); nothing found (3); other (1).

### Remedial Actions

- In 2024, a failed switch was replaced.
- In 2024, additional animal guarding was installed.
- In 2024, full circuit trimming will be performed.
- In 2024, additional fusing will be installed.
- In 2024, a single-phase recloser will be installed.
- In 2025, a section of this circuit will be reconducted.

## **30 Circuit 27502 -- WEISSPORT 75-02**

### Performance Analysis

The WEISSPORT 75-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On October 7, 2023, during a period of heavy rain, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,607 customers for up to 647 minutes resulting in 230,137 CMI.

On April 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 2,789 customers for up to 321 minutes resulting in 214,986 CMI.

On June 24, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 2,824 customers for up to 356 minutes resulting in 974,938 CMI.

On July 31, 2024, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,617 customers for up to 207 minutes resulting in 217,128 CMI.

In total, the WEISSPORT 75-02 circuit had 47 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (30); animal contacts (8); equipment failure (7); other (1); vehicles (1).

#### Remedial Actions

- In 2024, additional fusing was installed with more to be evaluated.
- In 2024, a sectionalizing device will be relocated and another installed.
- In 2024, a three-phase tie line will be evaluated.
- In 2024, two single-phase reclosers will be installed.
- In 2025, full circuit trimming will be performed.

### **31 Circuit 18001 -- ZIONSVILLE 80-01**

#### Performance Analysis

The ZIONSVILLE 80-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 29, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 389 customers for up to 363 minutes resulting in 116,085 CMI.

On February 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 698 customers for up to 1,405 minutes resulting in 519,916 CMI.

On July 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 700 customers for up to 458 minutes resulting in 178,591 CMI.

In total, the ZIONSVILLE 80-01 circuit had 95 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (76); animal contacts (8); nothing found (6); other (2); contact or dig in (1); equipment failure (1); vehicles (1).

## Remedial Actions

- In 2024, proactive fault sensors were installed.
- In 2024, several poles were replaced.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, two crossarms will be replaced.
- In 2024, two sections of this circuit will be evaluated for reconductoring and relocation.
- In 2025, full circuit trimming will be performed.
- In 2025, several poles will be replaced.
- In 2025, two sections of difficult-to-access single-phase line will be relocated.

### **32 Circuit 29402 -- BELTZVILLE 69/12 KV 94-02**

#### Performance Analysis

The BELTZVILLE 69/12 KV 94-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 27, 2023, during a period of strong wind, an improper operation occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 1,579 customers for up to 43 minutes resulting in 66,491 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 291 customers for up to 589 minutes resulting in 160,081 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 135 customers for up to 987 minutes resulting in 133,164 CMI.

On August 17, 2024, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 735 customers for up to 313 minutes resulting in 191,348 CMI.

In total, the BELTZVILLE 69/12 KV 94-02 circuit had 60 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (34); animal contacts (12); equipment failure (8); nothing found (3); vehicles (2); Improper Operation (1).

#### Remedial Actions

- In 2024, two new Smart Grid devices will be installed.
- In 2024, approximately two miles of new three-phase conductor will be constructed.
- In 2024, a section of difficult-to-access single-phase conductor will be relocated.

### **33 Circuit 12402 -- MILFORD 24-02**

#### Performance Analysis

The MILFORD 24-02 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 10, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 125 customers for up to 1,376 minutes resulting in 116,720 CMI.

On January 10, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 105 customers for up to 1,487 minutes resulting in 156,135 CMI.

On April 1, 2024, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 370 customers for up to 458 minutes resulting in 169,430 CMI.

On April 3, 2024, during a period of heavy rain, an unidentified issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 559 customers for up to 2,041 minutes resulting in 460,535 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 126 customers for up to 1,459 minutes resulting in 147,562 CMI.

On July 17, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 563 customers for up to 533 minutes resulting in 197,727 CMI.

In total, the MILFORD 24-02 circuit had 72 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (52); animal contacts (10); equipment failure (4); nothing found (3); contact or dig in (1); other (1); vehicles (1).

#### Remedial Actions

- In 2023, additional fusing was installed.
- In 2024, full circuit trimming was performed.
- In 2024, additional animal guarding will be installed.
- In 2024, a section of single-phase will be evaluated for relocation.
- In 2024, four single-phase reclosers will be installed.
- In 2024, additional fusing will be installed.
- In 2024, a single-phase recloser will be replaced.
- In 2024, multiple sections of single-phase will be evaluated for reconductoring.

## 34 Circuit 24603 -- VARDEN 46-03

### Performance Analysis

The VARDEN 46-03 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 28, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 671 customers for up to 1,470 minutes resulting in 787,079 CMI.

On July 15, 2024, during a period of lightning, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 123 customers for up to 1,194 minutes resulting in 111,551 CMI.

On July 15, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 147 customers for up to 817 minutes resulting in 119,987 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 125 customers for up to 911 minutes resulting in 113,866 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 148 customers for up to 1,805 minutes resulting in 257,792 CMI.

In total, the VARDEN 46-03 circuit had 95 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (64); equipment failure (13); animal contacts (11); nothing found (5); other (1); vehicles (1).

### Remedial Actions

- In 2024, several poles were replaced.
- In 2024, a section of difficult-to-access conductor was removed.
- In 2024, two reclosers will be replaced.
- In 2024, proactive fault sensors will be installed.
- In 2024, two single-phase reclosers will be installed.
- In 2024, numerous cutouts will be replaced.
- In 2026, full circuit trimming will be performed.

### **35 Circuit 14204 -- EAST ALLENTOWN 42-04**

#### Performance Analysis

The EAST ALLENTOWN 42-04 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On May 5, 2024, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 478 customers for up to 220 minutes resulting in 104,729 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 111 customers for up to 1,291 minutes resulting in 143,217 CMI.

On August 12, 2024, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,385 customers for up to 398 minutes resulting in 283,726 CMI.

In total, the EAST ALLENTOWN 42-04 circuit had 13 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (6); equipment failure (3); nothing found (2); animal contacts (1); vehicles (1).

#### Remedial Actions

- In 2024, full circuit trimming was performed.
- In 2024, an additional single-phase recloser will be evaluated.

### **36 Circuit 46004 -- BERWICK 60-04**

#### Performance Analysis

The BERWICK 60-04 circuit experienced seven outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 13, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,172 customers for up to 89 minutes resulting in 73,567 CMI.

On May 8, 2024, during a period of strong wind, a tree contacted an overhead conductor. This outage affected 804 customers for up to 374 minutes resulting in 154,725 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 2,067 customers for up to 2,029 minutes resulting in 2,697,080 CMI.

On June 27, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 200 customers for up to 2,456 minutes resulting in 254,752 CMI.

On June 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 108 customers for up to 984 minutes resulting in 106,240 CMI.

On June 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 142 customers for up to 1,921 minutes resulting in 256,250 CMI.

On August 6, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,170 customers for up to 45 minutes resulting in 52,650 CMI.

In total, the BERWICK 60-04 circuit had 81 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (55); equipment failure (11); animal contacts (10); nothing found (4); contact or dig in (1).

#### Remedial Actions

- In 2024, the coordination settings on this circuit were optimized.
- In 2024, full circuit trimming will be performed.
- In 2024, additional fusing will be evaluated.
- In 2024, a three-phase tie line will be evaluated.
- In 2025, a Proactive Circuit Review will be performed.

### **37 Circuit 59003 -- MIFFLINTOWN 90-03**

#### Performance Analysis

The MIFFLINTOWN 90-03 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 20, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,076 customers for up to 149 minutes resulting in 159,732 CMI.

On July 31, 2024, a tree contacted an overhead conductor causing an interruption. This outage affected 1,420 customers for up to 180 minutes resulting in 58,104 CMI.

In total, the MIFFLINTOWN 90-03 circuit had 35 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (19); equipment failure (7); animal contacts (5); nothing found (2); other (2).

### Remedial Actions

- In 2024, a three-phase recloser was installed.
- In 2024, an additional single-phase recloser will be evaluated.
- In 2024, additional fusing will be evaluated.

### **38 Circuit 21202 -- EAST CARBONDALE 12-02**

#### Performance Analysis

The EAST CARBONDALE 12-02 circuit experienced one outage of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 76 customers for up to 2,788 minutes resulting in 208,678 CMI.

In total, the EAST CARBONDALE 12-02 circuit had 23 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (11); equipment failure (7); other (3); animal contacts (2).

#### Remedial Actions

- In 2024, full circuit trimming was performed.
- In 2024, several poles were replaced.
- In 2024, proactive fault sensors will be installed.
- In 2024, a new recloser will be installed.
- In 2024, additional animal guarding will be installed.

### **39 Circuit 15704 -- TANNERSVILLE 57-04**

#### Performance Analysis

The TANNERSVILLE 57-04 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 13, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 109 customers for up to 975 minutes resulting in 106,275 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 653 customers for up to 637 minutes resulting in 273,842 CMI.

On June 2, 2024, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 533 customers for up to 559 minutes resulting in 294,823 CMI.

In total, the TANNERSVILLE 57-04 circuit had 79 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (45); animal contacts (26); equipment failure (6); nothing found (1); vehicles (1).

#### Remedial Actions

- In 2024, several poles were replaced.
- In 2024, additional animal guarding will be installed.
- In 2025, full circuit trimming will be performed.
- In 2025, three single-phase reclosers will be installed.
- In 2025, a section of difficult-to-access conductor will be relocated.
- In 2025, proactive fault sensors will be installed.
- In 2025, a voltage regulator will be installed.
- In 2025, an existing recloser will be replaced with a Smart Grid device.
- In 2025, several new sectionalizing devices will be installed.

#### **40 Circuit 10504 -- CRACKERSPORT 05-04**

##### Performance Analysis

The CRACKERSPORT 05-04 circuit experienced one outage of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On September 3, 2024, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,605 customers for up to 935 minutes resulting in 475,559 CMI.

In total, the CRACKERSPORT 05-04 circuit had 15 outages between October 2023 and September 2024, with the causes breaking down as follows: animal contacts (5); equipment failure (5); tree related (5).

##### Remedial Actions

- In 2024, additional fusing will be installed.
- In 2024, an existing recloser will be evaluated for replacement.
- In 2025, several sections of underground conductor will be replaced.

#### **41 Circuit 59401 -- RICHFIELD 94-01**

##### Performance Analysis

The RICHFIELD 94-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 142 customers for up to 1,880 minutes resulting in 216,376 CMI.

On April 30, 2024, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 860 customers for up to 85 minutes resulting in 70,202 CMI.

On July 25, 2024, a tree contacted an overhead conductor causing an interruption. This outage affected 810 customers for up to 410 minutes resulting in 331,839 CMI.

In total, the RICHFIELD 94-01 circuit had 81 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (50); equipment failure (15); animal contacts (10); nothing found (4); other (1); vehicles (1).

#### Remedial Actions

- In 2024, targeted hazard tree removal was performed.
- In 2024, a two-phase recloser will be upgraded for remote operability.
- In 2024, a single-phase recloser will be upgraded for remote operability.
- In 2024, additional fusing will be evaluated.

### **42 Circuit 46701 -- RENOVO 67-01**

#### Performance Analysis

The RENOVO 67-01 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On August 10, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 240 customers for up to 716 minutes resulting in 142,586 CMI.

On August 17, 2024, a tree contacted an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 661 customers for up to 8 minutes resulting in 5,083 CMI.

In total, the RENOVO 67-01 circuit had 38 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (31); animal contacts (3); equipment failure (2); nothing found (2).

#### Remedial Actions

- In 2024, an additional sectionalizing device will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, additional fusing will be installed.
- In 2024, an existing recloser will be replaced.
- In 2024, an existing recloser will be upgraded to a Smart Grid device.
- In 2024, the substation getaway will be evaluated for reconductoring and relocation.

## **43 Circuit 56504 -- ROCKVILLE 65-04**

### Performance Analysis

The ROCKVILLE 65-04 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 13, 2023, a vehicle contact caused an interruption. This outage affected 673 customers for up to 211 minutes resulting in 62,347 CMI.

On January 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,418 customers for up to 172 minutes resulting in 79,837 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 69 customers for up to 2,079 minutes resulting in 143,432 CMI.

On July 30, 2024, during a period of lightning, a tree contacted an overhead conductor causing an interruption. This outage affected 1,990 customers for up to 580 minutes resulting in 132,624 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 247 customers for up to 558 minutes resulting in 137,542 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 305 customers for up to 2,449 minutes resulting in 171,363 CMI.

In total, the ROCKVILLE 65-04 circuit had 143 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (96); animal contacts (21); equipment failure (17); nothing found (5); vehicles (3); other (1).

## Remedial Actions

- In 2024, single-phase proactive fault sensors were installed on this circuit.
- In 2024, upgrading a two-phase recloser to remote operability will be evaluated.
- In 2024, additional fusing will be installed.
- In 2024, two single-phase reclosers will be upgraded for remote operability.
- In 2024, ten sections of single-phase will be evaluated for reconductoring.
- In 2024, a section of single-phase will be evaluated for relocation.
- In 2024, three sections of single-phase will be evaluated for re-sourcing.
- In 2025, a section of single-phase will be resourced.
- In 2025, two additional fuses will be installed.

## **44 Circuit 64802 -- MOUNT NEBO 48-02**

### Performance Analysis

The MOUNT NEBO 48-02 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On July 9, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 569 customers for up to 96 minutes resulting in 33,595 CMI.

On July 16, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 269 customers for up to 797 minutes resulting in 214,393 CMI.

On August 9, 2024, during a period of heavy rain, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,096 customers for up to 439 minutes resulting in 43,884 CMI.

In total, the MOUNT NEBO 48-02 circuit had 90 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (68); animal contacts (15); equipment failure (5); nothing found (1); other (1).

### Remedial Actions

- In 2023, a three-phase protective device was replaced.
- In 2024, 14 single-phase proactive fault sensors will be installed.
- In 2024, a three-phase protective device will be evaluated.
- In 2025, a three-phase protective device will be replaced with a Smart Grid device.
- In 2026, full circuit trimming will be performed.

## **45 Circuit 28801 -- LAKEVILLE 88-01**

### Performance Analysis

The LAKEVILLE 88-01 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 29, 2024, during a period of strong wind, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,820 customers for up to 24 minutes resulting in 41,860 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 92 customers for up to 1,634 minutes resulting in 150,238 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 719 customers for up to 1,665 minutes resulting in 776,200 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 456 customers for up to 1,605 minutes resulting in 731,880 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 40 customers for up to 2,683 minutes resulting in 107,294 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 1,048 customers for up to 2,800 minutes resulting in 670,900 CMI.

In total, the LAKEVILLE 88-01 circuit had 93 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (60); animal contacts (20); equipment failure (9); nothing found (3); vehicles (1).

### Remedial Actions

- In 2024, several cross-arms were replaced.
- In 2024, proactive fault sensors will be installed
- In 2024, additional animal guarding will be installed.
- In 2025, two single-phase reclosers will be installed.
- In 2025, an existing recloser will be upgraded to a Smart Grid device.

## 46 Circuit 23101 -- MOSCOW 31-01

### Performance Analysis

The MOSCOW 31-01 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On October 11, 2023, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 453 customers for up to 589 minutes resulting in 229,763 CMI.

On January 9, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing an interruption. This outage affected 453 customers for up to 1,250 minutes resulting in 121,361 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 309 customers for up to 1,317 minutes resulting in 406,854 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 372 customers for up to 414 minutes resulting in 153,918 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 310 customers for up to 1,198 minutes resulting in 116,676 CMI.

In total, the MOSCOW 31-01 circuit had 86 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (59); animal contacts (11); equipment failure (10); nothing found (3); vehicles (2); contact or dig in (1).

### Remedial Actions

- In 2024, additional animal guarding was installed.
- In 2024, two existing reclosers were upgraded to Smart Grid devices.
- In 2024, several poles were replaced.
- In 2025, full circuit trimming will be performed.
- In 2025, several poles will be replaced.
- In 2025, proactive fault sensors will be installed.
- In 2025, an existing recloser will be replaced.
- In 2025, additional animal guarding will be installed.

## **47 Circuit 41802 -- GOWEN CITY 18-02**

### Performance Analysis

The GOWEN CITY 18-02 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On November 21, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 311 customers for up to 571 minutes resulting in 177,581 CMI.

On December 11, 2023, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 519 customers for up to 420 minutes resulting in 159,372 CMI.

On June 30, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 525 customers for up to 731 minutes resulting in 98,722 CMI.

In total, the GOWEN CITY 18-02 circuit had 53 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (37); animal contacts (9); nothing found (6); equipment failure (1).

### Remedial Actions

- In 2024, tree shielding cable will be installed.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2024, a section of three-phase conductor will be storm hardened.
- In 2024, additional animal guarding will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, a three-phase tie line will be evaluated.
- In 2024, several poles will be replaced.
- In 2025, a section of difficult-to-access conductor will be relocated.

## **48 Circuit 45702 -- LINDEN 57-02**

### Performance Analysis

The LINDEN 57-02 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a motor operated switch to be interrupted. This outage affected 494 customers for up to 1,308 minutes resulting in 213,426 CMI.

On May 8, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 502 customers for up to 422 minutes resulting in 128,939 CMI.

On July 7, 2024, a tree contacted a pole or pole arm causing an interruption. This outage affected 220 customers for up to 604 minutes resulting in 127,866 CMI.

On August 9, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 106 customers for up to 1,973 minutes resulting in 160,113 CMI.

On September 5, 2024, a vehicle contacted a pole causing an interruption. This outage affected 986 customers for up to 205 minutes resulting in 69,623 CMI.

In total, the LINDEN 57-02 circuit had 71 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (44); equipment failure (13); animal contacts (10); vehicles (2); contact or dig in (1); other (1).

#### Remedial Actions

- In 2024, additional animal guarding was installed.
- In 2024, additional fusing was installed.
- In 2024, refeeding a section of this circuit will be evaluated.
- In 2024, an existing recloser will be upgraded to a Smart Grid device.
- In 2024, additional sectionalizing will be installed.
- In 2025, full circuit trimming will be performed.

#### **49 Circuit 14008 -- SELLERSVILLE 40-08**

##### Performance Analysis

The SELLERSVILLE 40-08 circuit experienced one outage of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On September 17, 2024, a tree contacted an overhead switch causing a circuit breaker to trip to lockout. This outage affected 688 customers for up to 54 minutes resulting in 36,615 CMI.

In total, the SELLERSVILLE 40-08 circuit had 73 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (59); animal contacts (7); nothing found (4); equipment failure (2); other (1).

## Remedial Actions

- In 2024, a section of single-phase was reconfigured.
- In 2024, proactive fault sensors were installed.
- In 2024, additional animal guarding will be installed.
- In 2024, additional fusing will be installed.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, a section of single-phase will be evaluated for relocation.
- In 2024, a single-phase tie will be evaluated.
- In 2024, a section of single-phase will be reconfigured.
- In 2025, two Smart Grid devices will be installed.
- In 2025, three single-phase reclosers will be installed.
- In 2025, a fuse will be replaced with a single-phase recloser, and additional fusing will be installed.
- In 2026, full circuit trimming will be performed.

## **50 Circuit 40201 -- BEAR GAP 02-01**

### Performance Analysis

The BEAR GAP 02-01 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing an interruption. This outage affected 84 customers for up to 3,622 minutes resulting in 202,123 CMI.

On June 18, 2024, during a period of strong wind, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 312 customers for up to 459 minutes resulting in 143,064 CMI.

In total, the BEAR GAP 02-01 circuit had 123 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (83); animal contacts (18); equipment failure (10); nothing found (9); vehicles (2); other (1).

### Remedial Actions

- In 2024, proactive fault sensors were installed.
- In 2024, additional fusing was installed.
- In 2024, hot spot trimming was performed.
- In 2024, several poles will be replaced.
- In 2026, full circuit trimming will be performed.

## **51 Circuit 20401 -- ASHFIELD 04-01**

### Performance Analysis

The ASHFIELD 04-01 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 13, 2024, during a period of strong wind, a tree contacted an overhead conductor. This outage affected 919 customers for up to 707 minutes resulting in 649,733 CMI.

On January 21, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 1,249 customers for up to 242 minutes resulting in 52,483 CMI.

On March 11, 2024, an unidentified issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 322 customers for up to 338 minutes resulting in 108,771 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 193 customers for up to 1,147 minutes resulting in 221,307 CMI.

In total, the ASHFIELD 04-01 circuit had 83 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (56); equipment failure (10); nothing found (8); animal contacts (7); vehicles (2).

### Remedial Actions

- In 2024, a new single-phase recloser was installed.
- In 2024, an additional Smart Grid device was installed with another to be installed this year.
- In 2024, a section of conductor was removed.
- In 2024, single-phase fuse coordination will be optimized.
- In 2024, ten additional fuses will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, a section of single-phase will be evaluated for rebuilding as three-phase.
- In 2025, a single-phase tie to the ASHFIELD 04-03 circuit will be re-evaluated.

## **52 Circuit 59101 -- WALKER 91-01**

### Performance Analysis

The WALKER 91-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 1,712 customers for up to 2,092 minutes resulting in 170,946 CMI.

On June 26, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,131 customers for up to 766 minutes resulting in 530,032 CMI.

On September 1, 2024, during a period of extreme temperatures, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 662 customers for up to 130 minutes resulting in 44,058 CMI.

In total, the WALKER 91-01 circuit had 78 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (48); equipment failure (19); animal contacts (6); nothing found (4); other (1).

### Remedial Actions

- In 2024, a new three-phase recloser will be installed.
- In 2024, a recloser will be replaced.
- In 2024, sections of single-phase will be evaluated for reconductoring.
- In 2024, additional three-phase sectionalizing devices will be evaluated.
- In 2025, full circuit trimming will be performed.

## **53 Circuit 45602 -- WOOLRICH 56-02**

### Performance Analysis

The WOOLRICH 56-02 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 26, 2024, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 1,008 customers for up to 530 minutes resulting in 462,795 CMI.

On April 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 1,012 customers for up to 2,071 minutes resulting in 847,119 CMI.

On July 23, 2024, a tree contacted an overhead conductor causing an interruption. This outage affected 375 customers for up to 428 minutes resulting in 158,991 CMI.

In total, the WOOLRICH 56-02 circuit had 78 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (37); animal contacts (20); equipment failure (13); nothing found (5); vehicles (3).

#### Remedial Actions

- In 2024, a section of three-phase conductor will be relocated.
- In 2024, an existing three-phase recloser will be upgraded to a Smart Grid device.
- In 2024, a three-phase tie line will be evaluated.
- In 2024, a new substation will be evaluated.
- In 2025, a section of difficult-to-access three-phase line will be relocated.
- In 2026, storm hardening will be performed on this circuit.

#### **54 Circuit 27102 -- GREENFIELD 71-02**

##### Performance Analysis

The GREENFIELD 71-02 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 9, 2024, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 403 customers for up to 1,292 minutes resulting in 103,244 CMI.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 895 customers for up to 277 minutes resulting in 36,452 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 897 customers for up to 3,187 minutes resulting in 1,348,043 CMI.

On April 4, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 96 customers for up to 1,340 minutes resulting in 112,066 CMI.

On July 15, 2024, during a period of strong wind, a tree contact caused a recloser to trip to lockout. This outage affected 790 customers for up to 318 minutes resulting in 205,720 CMI.

In total, the GREENFIELD 71-02 circuit had 89 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (66); animal contacts (10); equipment failure (6); vehicles (5); contact or dig in (1); nothing found (1).

## Remedial Actions

- In 2024, several poles will be replaced.
- In 2024, a section of this circuit will be reconductored or relocated.
- In 2024, four single-phase reclosers will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, a section of this circuit will be transferred to a neighboring circuit.
- In 2024, additional animal guarding will be installed.
- In 2025, a section of this circuit will be reconductored.
- In 2025, an additional Smart Grid device will be installed.

## **55 Circuit 15701 -- TANNERSVILLE 57-01**

### Performance Analysis

The TANNERSVILLE 57-01 circuit experienced one outage of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 145 customers for up to 1,617 minutes resulting in 234,391 CMI.

In total, the TANNERSVILLE 57-01 circuit had 56 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (29); equipment failure (11); animal contacts (10); other (3); contact or dig in (2); vehicles (1).

### Remedial Actions

- In 2024, additional fusing was installed.
- In 2024 a new Smart Grid device will be installed.
- In 2025, proactive fault sensors will be installed.
- In 2025, a single-phase recloser will be installed.
- In 2024, a section of three-phase will be extended.
- In 2024, additional animal guarding will be installed.
- In 2025, a section of this circuit in a difficult-to-access location will be relocated.
- In 2025, an existing recloser will be replaced with a Smart Grid device.

## **56 Circuit 17805 -- GILBERT 78-05**

### Performance Analysis

The GILBERT 78-05 circuit experienced six outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 136 customers for up to 894 minutes resulting in 121,452 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 418 customers for up to 318 minutes resulting in 118,656 CMI.

On March 24, 2024, a vehicle contacted a pole. This outage affected 1,265 customers for up to 243 minutes resulting in 42,632 CMI.

On July 17, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 129 customers for up to 873 minutes resulting in 102,161 CMI.

On July 17, 2024, during a period of strong wind, an unidentified issue occurred causing a recloser to trip to lockout. This outage affected 443 customers for up to 322 minutes resulting in 142,486 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead splice causing a load break fuse to operate. This outage affected 115 customers for up to 1,529 minutes resulting in 175,741 CMI.

In total, the GILBERT 78-05 circuit had 75 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (30); animal contacts (20); equipment failure (13); vehicles (6); other (4); nothing found (2).

#### Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, a new three-phase tie line will be evaluated.
- In 2024, additional animal guarding will be installed.
- In 2025, proactive fault sensors will be installed.
- In 2025, three single-phase reclosers will be installed.

#### **57 Circuit 45902 -- AUBURN 59-02**

##### Performance Analysis

The AUBURN 59-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 113 customers for up to 1,208 minutes resulting in 136,396 CMI.

On February 13, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 40 customers for up to 2,522 minutes resulting in 100,880 CMI.

On June 28, 2024, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 442 customers for up to 577 minutes resulting in 206,151 CMI.

On September 23, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 458 customers for up to 378 minutes resulting in 102,222 CMI.

In total, the AUBURN 59-02 circuit had 82 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (54); animal contacts (11); equipment failure (8); nothing found (3); vehicles (3); other (2); contact or dig in (1).

### Remedial Actions

- In 2024, full circuit trimming was performed.
- In 2024, proactive fault sensors were installed.
- In 2024, two sections of difficult-to-access conductor will be relocated.
- In 2024, a section of difficult-to-access three-phase conductor will be evaluated for relocation.
- In 2024, several poles will be replaced.
- In 2025, additional fusing will be installed.
- In 2025, a section of difficult-to-access conductor will be relocated.

### **58 Circuit 51502 -- SWATARA 15-02**

#### Performance Analysis

The SWATARA 15-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 590 customers for up to 958 minutes resulting in 224,951 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an underground conductor causing a circuit breaker to trip to lockout. This outage affected 210 customers for up to 823 minutes resulting in 172,764 CMI.

On June 30, 2024, a vehicle contact caused a recloser to trip to lockout. This outage affected 449 customers for up to 580 minutes resulting in 188,213 CMI.

On September 21, 2024, during a period of heavy rain, an equipment failure occurred on an overhead switch causing a circuit breaker to trip to lockout. This outage affected 1,927 customers for up to 298 minutes resulting in 153,788 CMI.

In total, the SWATARA 15-02 circuit had 18 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (9); animal contacts (4); equipment failure (2); vehicles (2); contact or dig in (1).

## Remedial Actions

- In 2023, proactive fault sensors were installed on this circuit.
- In 2024, an additional three-phase sectionalizing device will be evaluated.
- In 2024, resourcing a section of line will be evaluated.

## **59 Circuit 28102 -- TWIN LAKES 81-02**

### Performance Analysis

The TWIN LAKES 81-02 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 133 customers resulting in 191,312 CMI.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 211 customers for up to 1,200 minutes resulting in 253,200 CMI.

On June 27, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 213 customers for up to 710 minutes resulting in 129,294 CMI.

In total, the TWIN LAKES 81-02 circuit had 68 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (45); animal contacts (11); equipment failure (6); nothing found (6).

### Remedial Actions

- In 2024, a single-phase recloser was installed.
- In 2024, several poles were replaced.
- In 2024, a new Smart Grid device will be installed.
- In 2024, numerous porcelain cutouts will be replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, a Proactive Circuit Analysis will be performed.

## **60 Circuit 16505 -- STROUDSBURG 65-05**

### Performance Analysis

The STROUDSBURG 65-05 circuit experienced two outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On May 27, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 1,332 customers for up to 422 minutes resulting in 321,005 CMI.

On August 9, 2024, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 647 customers for up to 344 minutes resulting in 113,055 CMI.

In total, the STROUDSBURG 65-05 circuit had 40 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (18); equipment failure (11); animal contacts (10); vehicles (1).

### Remedial Actions

- In 2024, additional animal guarding will be installed.
- In 2025, proactive fault sensors will be installed.
- In 2025, a new Smart Grid device will be installed.
- In 2025, five single-phase reclosers will be installed.

## **61 Circuit 27901 -- BEAR CREEK 79-01**

### Performance Analysis

The BEAR CREEK 79-01 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On June 27, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,494 customers for up to 56 minutes resulting in 83,215 CMI.

On July 17, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 330 customers for up to 459 minutes resulting in 124,575 CMI.

On August 28, 2024, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,200 customers for up to 184 minutes resulting in 50,274 CMI.

In total, the BEAR CREEK 79-01 circuit had 52 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (34); animal contacts (6); equipment failure (5); vehicles (4); nothing found (3).

## Remedial Actions

- In 2024, multiple dead-ends were replaced.
- In 2024, proactive fault sensors will be installed.
- In 2024, protection settings on several devices will be reviewed and optimized.
- In 2025, full circuit trimming will be performed.

## **62 Circuit 41002 -- LAURELTON 10-02**

### Performance Analysis

The LAURELTON 10-02 circuit experienced four outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On January 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 333 customers for up to 1,166 minutes resulting in 225,624 CMI.

On January 14, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 333 customers for up to 456 minutes resulting in 127,965 CMI.

On January 14, 2024, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 65 customers for up to 3,144 minutes resulting in 204,344 CMI.

On April 12, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 306 customers for up to 637 minutes resulting in 185,161 CMI.

In total, the LAURELTON 10-02 circuit had 94 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (63); animal contacts (16); equipment failure (12); vehicles (2); nothing found (1).

### Remedial Actions

- In 2024, an additional Smart Grid device will be evaluated.
- In 2024, a section of difficult-to-access single-phase conductor will be evaluated for relocation.
- In 2024, additional fusing will be installed.
- In 2024, additional animal guarding will be installed.
- In 2025, full circuit trimming will be performed.
- In 2025, a section of this circuit will be reconductored.

## **63 Circuit 24502 -- GOULDSBORO 45-02**

### Performance Analysis

The GOULDSBORO 45-02 circuit experienced three outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 183 customers for up to 1,296 minutes resulting in 219,960 CMI.

On June 24, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 185 customers for up to 587 minutes resulting in 108,570 CMI.

On August 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 144 customers for up to 929 minutes resulting in 133,682 CMI.

In total, the GOULDSBORO 45-02 circuit had 81 outages between October 2023 and September 2024, with the causes breaking down as follows: tree related (56); animal contacts (11); equipment failure (9); other (2); vehicles (2); nothing found (1).

### Remedial Actions

- In 2023, a section of difficult-to-access conductor was relocated.
- In 2024, numerous porcelain cutouts will be replaced.
- In 2024, additional animal guarding will be installed.
- In 2025, full circuit trimming will be performed.

## **64 Circuit 12302 -- LANARK 23-02**

### Performance Analysis

The LANARK 23-02 circuit experienced five outages of over 100,000 CMI or 500 CI between October 2023 and September 2024.

On March 11, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 599 customers for up to 47 minutes resulting in 28,153 CMI.

On March 23, 2024, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 632 customers for up to 537 minutes resulting in 194,040 CMI.

On April 3, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 593 customers for up to 2,851 minutes resulting in 68,347 CMI.

On May 26, 2024, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,993 customers for up to 387 minutes resulting in 119,999 CMI.

On August 13, 2024, an unidentified issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 640 customers for up to 20 minutes resulting in 12,800 CMI.

In total, the LANARK 23-02 circuit had 25 outages between October 2023 and September 2024, with the causes breaking down as follows: equipment failure (8); tree related (8); other (3); animal contacts (2); nothing found (2); vehicles (2).

#### Remedial Actions

- In 2024, phase respacing was implemented on a section of this circuit.
- In 2024, multiple poles will be replaced.
- In 2024, full circuit trimming was performed.
- In 2024, a new single-phase tie will be constructed.

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.*

The following table shows a breakdown of service interruption causes for the 12 months ended at the current quarter.

| Cause Description                    | Trouble Cases | Percent of Trouble Cases | Customer Interruptions | Percent of Customer Interruptions | Customer Minutes   | Percent of Customer Minutes |
|--------------------------------------|---------------|--------------------------|------------------------|-----------------------------------|--------------------|-----------------------------|
| <b>Animals</b>                       | 5,277         | 17.3%                    | 77,383                 | 4.7%                              | 6,768,396          | 1.3%                        |
| <b>Contact / Dig-In</b>              | 192           | 0.6%                     | 7,782                  | 0.5%                              | 913,518            | 0.2%                        |
| <b>Directed by Non-PPL Authority</b> | 50            | 0.2%                     | 3,695                  | 0.2%                              | 689,106            | 0.1%                        |
| <b>Equipment Failures</b>            | 5,425         | 17.7%                    | 302,603                | 18.2%                             | 43,964,748         | 8.5%                        |
| <b>Improper Design</b>               | 2             | 0.0%                     | 1,113                  | 0.1%                              | 62,063             | 0.0%                        |
| <b>Improper Installation</b>         | 4             | 0.0%                     | 3,469                  | 0.2%                              | 317,530            | 0.1%                        |
| <b>Improper Operation</b>            | 10            | 0.0%                     | 2,534                  | 0.2%                              | 97,882             | 0.0%                        |
| <b>Nothing Found</b>                 | 1,384         | 4.5%                     | 82,662                 | 5.0%                              | 14,670,399         | 2.8%                        |
| <b>Other Controllable</b>            | 78            | 0.3%                     | 15,496                 | 0.9%                              | 394,412            | 0.1%                        |
| <b>Other Non Control</b>             | 433           | 1.4%                     | 39,134                 | 2.4%                              | 7,848,426          | 1.5%                        |
| <b>Other Public</b>                  | 24            | 0.1%                     | 11,780                 | 0.7%                              | 1,886,998          | 0.4%                        |
| <b>Tree Related</b>                  | 16,929        | 55.4%                    | 1,004,869              | 60.6%                             | 426,040,121        | 81.9%                       |
| <b>Unknown</b>                       | -             | 0.0%                     | -                      | 0.0%                              | -                  | 0.0%                        |
| <b>Vehicles</b>                      | 776           | 2.5%                     | 105,787                | 6.4%                              | 16,254,999         | 3.1%                        |
| <b>Total</b>                         | <b>30,584</b> | <b>100.0%</b>            | <b>1,658,307</b>       | <b>100.0%</b>                     | <b>519,908,599</b> | <b>100.0%</b>               |

Analysis of causes contributing to the majority of service interruptions:

**Weather Conditions:** PPL Electric records weather conditions, such as wind or lightning, as contributing factors to service interruptions, but does not code them as direct interruption causes. Therefore, some fluctuations in cause categories, especially tree and equipment related causes, are attributable to weather variations. For the current reporting period, weather was considered a significant contributing cause in 57% of cases, 67% of customer interruptions, and 88% of CMI.

**Tree Related:** Vegetation is one of the largest single contributors to the number of cases of trouble, customer interruptions and customer minutes. For the current reporting period, approximately 85% of the cases of trouble, 87% of the customer interruptions and 95% of the customer minutes attributed to tree related outages were weather-related.

**Animals:** Animals accounted for approximately 17% of PPL Electric's cases of trouble. Although this represents a significant number of cases, the effect on SAIFI and CAIDI is small because approximately 74% of the number of cases of trouble were associated with individual distribution transformers. PPL Electric has distribution and substation animal guarding programs to focus on systematically protecting existing facilities most at risk of incurring animal-caused interruptions. All PPL Electric substations are animal guarded.

**Vehicles:** Although vehicles cause a small percentage of the number of cases of trouble, they can account for a larger percentage of customer interruptions and customer minutes, because main distribution lines generally are located along major thoroughfares with higher traffic densities. In addition, vehicle-related cases often result in extended repair times to replace broken poles. PPL Electric has a program to identify and relocate poles that are subject to multiple vehicle hits.

**Equipment Failure:** Equipment failure is one of the largest single contributors to the number of cases of trouble, customer interruptions and customer minutes. However, approximately 33% of the cases of trouble, 39% of the customer interruptions and 56% of the customer minutes attributed to equipment failure were weather-related and, as such, are not considered to be strong indicators of equipment condition or performance.

**Nothing Found:** This description is recorded when the responding crew can find no cause for the interruption. That is, when there is no evidence of equipment failure, damage, or contact after a line patrol is completed. For example, during heavy thunderstorms, when a line fuse blows and, when closed for test, the fuse holds, and a patrol reveals nothing.

6) *Quarterly and year-to-date information on progress toward meeting transmission and distribution inspection and maintenance goals/objectives. (For first, second and third quarter reports only.)*

| Inspection & Maintenance Goals/Objectives                 | Annual Budget (units) | 3rd Quarter |        | Year-to-date |        |
|---|-----------------------|-------------|--------|--------------|--------|
|   |                       | Budget      | Actual | Budget       | Actual |
| <b>Transmission</b>                                       |                       |             |        |              |        |
| Transmission C-tag poles (# of poles)                     | 57                    | 35          | 35     | 46           | 46     |
| Transmission arm replacements (# of arms)                 | 2                     | 0           | 0      | 1            | 1      |
| Transmission air break switch inspections (# of switches) | 1                     | 0           | 0      | 1            | 1      |
| Transmission surge arrester installations (# of sets)     | 4                     | 0           | 0      | 1            | 1      |
| Transmission structure inspections (# of activities)      | 6,859                 | 0           | 0      | 1,125        | 4,653  |
| Transmission tree side trim-Bulk Power (linear feet)      | N/A                   |             | 512    |              | 18,710 |
| Transmission herbicide-Bulk Power (# of acres)            | N/A                   |             | 1,778  |              | 1,821  |
| Transmission reclearing (# of miles) BES Only             | 823                   | 348         | 348    | 786          | 786    |
| Transmission reclearing (# of miles) 69 kV                | 1,642                 | 171         | 171    | 1,375        | 1,375  |
| Transmission reclearing (# of miles) 138 kV               | 88                    | 29          | 29     | 74           | 74     |
| Transmission danger tree removals-Bulk Power (# of trees) | N/A                   |             | 181    |              | 1,491  |
| <b>Substation</b>   |                       |             |        |              |        |
| Substation batteries (# of activities) <sup>4</sup>       | 122                   | 0           | 0      | 122          | 122    |
| Circuit breakers (# of activities)                        | 0                     | 0           | 2      | 0            | 5      |
| Substation inspections (# of activities)                  | 1,250                 | 313         | 309    | 939          | 1,164  |
| Transformer maintenance (# of activities)                 | 374                   | 94          | 138    | 282          | 662    |

<sup>4</sup> An issue was identified with closing out substation maintenance activities in 2023 leading to artificially low numbers in 2023 and high numbers in 2024. We are working on correcting this issue. Inspection and maintenance activities in both years were generally executed according to schedule.

| Inspection & Maintenance Goals/Objectives                  | Annual Budget (units) | 3rd Quarter |        | Year-to-date |        |
|--|-----------------------|-------------|--------|--------------|--------|
|  |                       | Budget      | Actual | Budget       | Actual |
| <b>Distribution</b>  |                       |             |        |              |        |
| Distribution C-tag poles replaced (# of poles)             | 2,250                 | 563         | 254    | 1,688        | 548    |
| C-truss distribution poles (# of poles) <sup>5</sup>       | 14,000                | 474         | 20     | 1,344        | 557    |
| Capacitor (MVAR added)                                     | N/A                   |             | 0.6    |              | 1.1    |
| OCR Replacements (# of)                                    | 104                   | 30          | 25     | 74           | 57     |
| Distribution pole inspections (# of poles)                 | 50,000                | 17,378      | 17,378 | 45,787       | 45,787 |
| Distribution line inspections (miles)                      | 7,528                 | 0           | 0      | 2,582        | 2,808  |
| Group re-lamping (# of lamps)                              | 0                     | 0           | 0      | 0            | 0      |
| Test sections of underground distribution cable            | N/A                   |             | 23     |              | 69     |
| Distribution tree trimming (# of miles)                    | 4,028                 | 1,084       | 1,084  | 3,439        | 3,439  |
| Distribution herbicide (# of acres)                        | N/A                   |             | 313    |              | 619    |
| Distribution >18" removals within R/W (# of trees)         | N/A                   |             |        |              |        |
| Distribution hazard tree removals outside R/W (# of trees) | N/A                   |             | 2,267  |              | 5,406  |
| LTN manhole inspections (# of) <sup>6</sup>                | 0                     | 0           | 0      | 0            | 0      |
| LTN vault inspections (# of)                               | 0                     | 0           | 0      | 0            | 0      |
| LTN network protector overhauls (# of)                     | 0                     | 0           | 0      | 0            | 0      |
| LTN reverse power trip testing (# of)                      | 0                     | 0           | 0      | 0            | 0      |

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<sup>5</sup> C-truss poles began in early Q3.

<sup>6</sup> Due to planned 2024 LTN upgrades, inspections will not be required.

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.*

The following table provides the operation and maintenance (O&M) expenses for PPL Electric which includes the work identified in response to Item (6).

| Activity                      | 3rd Quarter             |                   |                   | Year-to-date      |                   |
|-------------------------------|-------------------------|-------------------|-------------------|-------------------|-------------------|
|                               | Annual Budget<br>(000s) | Budget<br>(\$000) | Actual<br>(\$000) | Budget<br>(\$000) | Actual<br>(\$000) |
| Provide Electric Service      | 6,371                   | 1,443             | 373               | 4,920             | 4,215             |
| Vegetation Management         | 29,115                  | 8,142             | 11,818            | 24,171            | 35,352            |
| Customer Response             | 54,995                  | 17,161            | 2,914             | 43,069            | 48,245            |
| Reliability Maintenance       | 19,034                  | 4,308             | 4,713             | 14,117            | 15,737            |
| System Upgrade                | 194                     | 91                | 2                 | 191               | 18                |
| Customer Service/Accounts     | 67,720                  | 17,005            | 47,282            | 47,821            | 147,899           |
| Others                        | 47,948                  | 13,463            | 19,725            | 40,720            | 46,369            |
| <b>Total O&amp;M Expenses</b> | <b>225,376</b>          | <b>61,612</b>     | <b>86,827</b>     | <b>175,011</b>    | <b>297,835</b>    |

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.*

The following table provides the capital expenditures for PPL Electric which includes transmission and distribution (“T&D”) activities.

| Activity                     | 3rd Quarter             |                   |                   | Year-to-date      |                   |
|------------------------------|-------------------------|-------------------|-------------------|-------------------|-------------------|
|                              | Annual Budget<br>(000s) | Budget<br>(\$000) | Actual<br>(\$000) | Budget<br>(\$000) | Actual<br>(\$000) |
| New Service/Revenue          | 118,093                 | 31,006            | 43,395            | 89,749            | 113,743           |
| System Upgrade               | 388,584                 | 90,841            | 91,633            | 275,281           | 234,705           |
| Reliability &<br>Maintenance | 530,530                 | 160,333           | 144,762           | 397,718           | 386,122           |
| Customer Response            | 63,181                  | 19,281            | 34,922            | 47,417            | 111,309           |
| Other                        | 22,823                  | 8,780             | 8,394             | 18,347            | 14,805            |
| <b>Total</b>                 | <b>1,123,211</b>        | <b>310,241</b>    | <b>323,107</b>    | <b>828,512</b>    | <b>860,684</b>    |

***PPL Electric Utilities Corporation***

***Worst Performing Circuit Definition***

PPL Electric uses an equal weighting of circuit SAIDI and system SAIFI contribution over the previous four quarters to define the worst performing circuits on its system. IEEE Major Event days are excluded. This ranking system was put in place as of the first quarter of 2020, for the following reasons:

- Increased targeting of problem areas versus circuits that may be reasonable performers but are simply long circuits that have been in storms.
- It prioritizes the circuits contributing the most toward system SAIFI.
- It is less biased towards long, rural circuits and more reflective of the customer experience.

***PPL Electric Utilities Corporation***

***Job Descriptions***

***Transmission and Distribution***

|                            |  |
|----------------------------|--|
| Groundhand                 | <ul style="list-style-type: none"><li>• Performs manual labor and assists employees in higher job classifications.</li></ul>   |
| Helper                     | <ul style="list-style-type: none"><li>• Performs semi-skilled labor at any work location on de-energized overhead and underground transmission, and distribution facilities to prepare the employee for entrance into the Journeyman Lineman Apprenticeship Program.</li></ul>   |
| Journeyman Lineman         | <ul style="list-style-type: none"><li>• Works alone or as part of a crew on the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.</li></ul>   |
| Journeyman Lineman-Trainee | <ul style="list-style-type: none"><li>• Works alone or as part of a crew on the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.</li></ul>   |
| Lineman Leader             | <ul style="list-style-type: none"><li>• Responsible for completing assigned work by directing one or multiple groups of employees involved in the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.</li><li>• Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job.</li><li>• Performs all the direct duties of the Journeyman Lineman when not acting as a Lineman Leader.</li></ul> |
| Troubleman                 | <ul style="list-style-type: none"><li>• Investigates and resolves trouble calls, voltage abnormalities on transmission and distribution systems associated with, but not limited to, PPL Electric facilities.</li></ul>  |

## Appendix B

### *Electrical*

|  |  |
|--|--|
| Electrician Leader<br>- Substation<br>- Network<br>- Underground     | <ul style="list-style-type: none"><li>• Responsible for completing assigned work by directing one or multiple groups of employees involved in the construction and maintenance activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.</li><li>• Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job.</li><li>• Performs all direct duties of the Journeyman Electrician when not acting as a leader.</li></ul> |
| Helper<br>- Substation<br>- Network<br>- Underground                 | <ul style="list-style-type: none"><li>• Performs manual labor at any work location including those areas containing non-exposed energized electrical equipment, and to prepare the employee for entrance into the Apprenticeship Program.</li></ul>  |
| Laborer<br>- Substation<br>- Network<br>- Underground                | <ul style="list-style-type: none"><li>• Performs manual labor and assists employees in higher job classifications.</li></ul>   |
| Journeyman Electrician<br>- Substation<br>- Network<br>- Underground | <ul style="list-style-type: none"><li>• Normally under limited supervision performs and is responsible for work associated with, but not limited to, PPL Electric facilities involving the highest degree of skill in construction and maintenance work associated with substations, LTN or underground distribution and transmission.</li><li>• Uses microprocessor-based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.</li></ul>   |

## Appendix B

|  |  |
|--|--|
| <p>Journeyman<br/>Electrician - Trainee</p> <ul style="list-style-type: none"><li>- Substation</li><li>- Network</li><li>- Underground</li></ul> | <ul style="list-style-type: none"><li>• Normally under limited supervision performs and is responsible for work associated with, but not limited to, PPL Electric facilities involving the highest degree of skill in construction and maintenance work associated with substations, LTN or underground distribution and transmission.</li><li>• Uses microprocessor-based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.</li></ul> |
|--|--|