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E-FILE

April 30, 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 March 31, 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 March 31, 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 April 30, 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,

A handwritten signature in blue ink that reads "Kimberly A. Klock". The signature is fluid and cursive, with the first name being the most prominent.

Kimberly A. Klock

Enclosures

cc via email: Patrick Cicero, Esquire
NazAarah Sabree

Mr. Daniel Searfoorce



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

April 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 first quarter of 2024.

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 March 31, 2024.

SAIFI	BM 0.98	0.98
	STD 1.18	0.98
CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	BM 145	265
	STD 174	265
SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	BM 142	260
	STD 205	260
MAIFI ¹		2.55
Average Number of Customers Served ²		1,459,175
Number of Sustained Customer Interruptions (Trouble Cases)		27,812
Number of Customers Affected		1,433,407
Customer Minutes of Interruptions (CMI)		379,138,502
Number of Customer Momentary Interruptions		3,720,891

¹ Beginning in Q1 2024, MAIFI results are obtained from meter data. The Q1 result is only data from Q1, not rolling 12 months. Additionally, meters are programmed not to send a power down until they have lost power for 35 seconds so as to not overwhelm the OMS system.

² 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 first quarter, there were no (0) PUC major events, six (6) PUC reportable events, and two (2) other storms that required the opening of one or more area emergency centers to manage restoration efforts.

For the rolling four quarters ending on 3/31/2024, storm impacts remain highly elevated by historical standards. PPL Electric saw forty-two storms (PUC and non-PUC) during the last four quarters. In the first quarter of 2024 alone, PPL Electric has seen 4 storms of 794 cases or higher, with the largest having 1,689 cases.

PPL Electric’s first-quarter reliability performance saw SAIFI within the PUC standard and benchmark. SAIDI and CAIDI were both behind the standard and the benchmark. Elevated SAIDI and CAIDI values are largely attributable to ongoing elevated storm frequency. Smart Grid technology and automation benefit SAIFI and SAIDI but have a negative impact on CAIDI. Additionally, the third quarter of 2023 was the stormiest on record with 19 total storms, of which six were PUC reportable, and the first quarter of 2024 has seen the most storm cases on record. Two of the top three most impactful storm quarters have occurred within the current rolling 12 months.

Quarter	Storm Cases (No Lights)
2024-Q1	5,868
2021-Q3	4,873
2023-Q3	3,786
2022-Q4	2,727
2018-Q2	2,700
2022-Q1	2,571
2023-Q2	2,200
2020-Q2	2,193
2007-Q2	2,170
2021-Q4	2,115
2020-Q4	2,045

Most Impactful Storm Quarters

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 2022 performance quartiles for large utilities

nationally, as issued by the IEEE annual reliability survey. This survey comprises some 100 utilities serving 85 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 3/31/2024	144	0.64	92
IEEE First Quartile Ceiling	101	0.82	85
IEEE Second Quartile Ceiling	120	1.02	115

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

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	22803	627	1.94	322.6	2,476	20	1,554,445	4,812
2	46802	786	1.98	396.5	1,951	81	1,534,947	3,868
3	13901	443	3.72	119.0	1,452	21	644,135	5,404
4	20401	584	2.86	204.2	1,311	63	765,751	3,750
5	10601	473	2.42	195.7	1,700	86	804,451	4,108
6	11506	13,691 ³	90.91	150.6	32	42	438,132	2,909
7	24602	531	2.43	218.3	1,435	71	762,901	3,490
8	25801	350	2.68	130.7	1,845	87	646,393	4,939
9	10904	503	1.96	256.4	1,744	125	878,045	3,421
10	43401	555	3.04	182.5	996	57	553,126	3,029
11	49804	358	3.11	115.0	1,341	77	480,672	4,173
12	13501	506	1.93	262.2	1,557	43	788,956	3,005
13	13905	310	4.64	66.8	1,119	38	347,751	5,194
14	23401	335	2.33	144.1	1,744	82	585,286	4,055
15	20402	556	1.67	333.0	1,631	26	908,216	2,723
16	65904	329	2.66	123.7	1,438	15	473,558	3,824
17	46302	559	2.33	240.4	1,113	66	622,409	2,588
18	26401	309	1.86	165.9	2,243	92	693,285	4,178
19	45402	357	2.00	178.8	1,646	81	589,074	3,287
20	28303	365	1.64	222.0	1,954	93	714,310	3,212
21	14403	291	2.04	142.7	2,598	92	756,140	5,298
22	25501	318	2.18	145.7	1,710	90	544,750	3,731
23	54101	293	2.53	115.7	1,706	67	501,140	4,321
24	25402	323	1.78	181.2	1,813	75	586,141	3,231

³ This circuit was reconfigured to a much lower customer count in the past four quarters, skewing its metrics calculations artificially high.

WPC Rank	Feeder ID	SAIDI	SAIFI	CAIDI	Customers	Cases of Trouble	Customer Minutes Interrupted (CMI)	Customer Interruptions (CI)
25	28604	353	1.56	227.0	1,839	54	650,322	2,860
26	40101	335	1.37	243.7	2,173	58	728,826	2,987
27	11103	619	1.32	467.9	1,589	17	984,133	2,102
28	20601	371	1.60	231.5	1,488	44	552,196	2,385
29	17902	350	2.48	141.2	979	56	343,436	2,426
30	67702	568	2.66	213.3	762	42	433,440	2,029
31	47002	256	2.21	115.9	2,020	65	518,986	4,461
32	65002	291	2.02	144.0	1,570	21	457,026	3,173
33	16802	456	2.43	187.6	884	59	403,431	2,149
34	67803	303	1.41	215.1	2,002	32	608,445	2,820
35	15001	371	1.60	232.5	1,399	62	519,152	2,232
36	45602	305	1.10	277.2	2,457	52	749,607	2,703
37	15701	257	3.21	80.0	1,187	54	306,092	3,815
38	15604	299	1.96	152.8	1,395	64	417,839	2,730
39	27402	500	1.58	315.9	1,266	36	633,875	2,004
40	53901	432	1.58	274.2	1,331	42	575,176	2,097
41	12402	534	3.48	153.4	558	39	298,431	1,943
42	13502	546	2.05	266.2	935	35	511,090	1,918
43	40901	302	2.12	142.5	1,147	51	346,653	2,430
44	23902	225	2.86	78.6	1,497	59	337,841	4,287
45	28102	496	1.74	285.8	1,090	57	540,669	1,892
46	14008	582	2.23	261.1	803	49	467,902	1,790
47	18001	825	2.47	334.3	699	56	576,791	1,725
48	50105	256	1.83	139.9	1,598	17	410,472	2,925
49	22601	358	1.58	226.9	1,248	40	447,401	1,969
50	44701	249	2.47	101.0	1,172	50	292,801	2,890
51	28402	267	1.49	179.3	1,643	47	439,608	2,447
52	42401	329	2.74	119.9	721	41	237,858	1,979
53	41902	299	1.55	192.3	1,386	77	414,414	2,155
54	65604	390	1.73	224.9	1,057	39	412,577	1,833
55	63403	215	2.36	91.0	1,465	44	315,289	3,463
56	27102	273	2.51	108.7	898	51	245,395	2,256
57	28602	276	1.13	244.3	1,958	42	540,908	2,212
58	44505	256	2.62	97.8	911	54	233,917	2,385
59	45302	262	1.83	142.9	1,227	51	322,638	2,249
60	20403	252	1.21	208.4	1,966	97	496,497	2,377
61	29503	562	1.38	406.2	1,132	52	637,161	1,566
62	61001	209	1.64	127.8	2,014	27	421,823	3,294
63	13601	306	1.65	185.4	1,137	55	348,468	1,877
64	24603	315	1.31	239.8	1,403	59	443,214	1,843

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

01 Circuit 22803 -- HAUTO 28-03

Performance Analysis

The HAUTO 28-03 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 18, 2023, a tree contacted an overhead switch causing a recloser to trip to lockout. This outage affected 1,682 customers for up to 229 minutes resulting in 378,747 CMI.

On September 23, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,143 customers for up to 507 minutes resulting in 1,074,664 CMI.

In total, the HAUTO 28-03 circuit had 19 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (10); equipment failure (7); animal contacts (1); nothing found (1).

Remedial Actions

- In 2023, an additional sectionalizing device was installed.
- In 2024, an additional recloser will be installed.
- In 2024, a new tie line will be evaluated.
- In 2024, reconductoring a section of this circuit will be evaluated.
- In 2024, proactive fault sensors will be installed.
- In 2025, full circuit trimming will be performed.

02 Circuit 46802 -- HEPBURN 68-02

Performance Analysis

The HEPBURN 68-02 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 30, 2023, 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 1,958 customers for up to 1,162 minutes resulting in 1,202,488 CMI.

In total, the HEPBURN 68-02 circuit had 85 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (51); equipment failure (26); animal contacts (5); nothing found (2); vehicles (1).

Remedial Actions

- In 2024, a section of single-phase in a difficult-to-access location was relocated.
- In 2024, a single-phase recloser was replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, additional fusing will be installed.
- In 2024, a three-phase tie will be evaluated.

03 Circuit 13901 -- SEIDERSVILLE 39-01

Performance Analysis

The SEIDERSVILLE 39-01 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,030 customers for up to 2,804 minutes resulting in 2,389,761 CMI.

On August 13, 2023, an equipment failure occurred on an overhead switch causing a circuit breaker to trip to lockout. This outage affected 3,501 customers for up to 388 minutes resulting in 414,462 CMI.

On August 21, 2023, an equipment failure occurred on an overhead splice causing a circuit breaker to trip to lockout. This outage affected 1,777 customers for up to 155 minutes resulting in 198,277 CMI.

In total, the SEIDERSVILLE 39-01 circuit had 24 outages between April 2023 and March 2024, with the causes breaking down as follows: equipment failure (12); tree related (9); nothing found (2); animal contacts (1).

Remedial Actions

- In 2023, a section of conductor was undergrounded.
- In 2023, a neighboring circuit was replaced reducing tie exposure on this circuit.
- In 2023, a section of this circuit in a heavily wooded area was removed and the customers re-sourced.
- In 2023 several poles and cross-arms were replaced.
- In 2024, full circuit trimming will be performed.
- In 2024, load balancing will be performed on this circuit.

04 Circuit 20401 -- ASHFIELD 04-01

Performance Analysis

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

On June 2, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,247 customers for up to 484 minutes resulting in 485,378 CMI.

On January 13, 2024, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. 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 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.

In total, the ASHFIELD 04-01 circuit had 83 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (51); equipment failure (12); animal contacts (10); nothing found (8); vehicles (2).

Remedial Actions

- In 2023, remotely operable tie devices were commissioned.
- In 2023, a remotely operable device was reprogrammed.
- In 2024, single-phase fuse coordination will be optimized.
- In 2024, two additional Smart Grid devices will be installed.
- In 2024, ten additional fuses will be installed.
- In 2024, a new single-phase recloser will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2025, a single-phase tie to the ASHFIELD 04-03 circuit will be re-evaluated.

05 Circuit 10601 -- BLOOMING GLEN 06-01

Performance Analysis

The BLOOMING GLEN 06-01 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 9, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 767 customers for up to 408 minutes resulting in 145,465 CMI.

On July 10, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 407 customers for up to 1,420 minutes resulting in 120,656 CMI.

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.

In total, the BLOOMING GLEN 06-01 circuit had 97 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (76); animal contacts (12); equipment failure (6); nothing found (3).

Remedial Actions

- In 2023, an additional single-phase recloser was installed.
- In 2023, additional animal guarding was installed.
- In 2023, additional fusing was installed.
- In 2023, proactive fault sensors were installed.
- In 2024, a dissimilar metal connection was identified by fault sensors and remediated.
- In 2024, an additional Smart Grid device will be evaluated for this circuit.
- In 2024, additional single-phase reclosers will be installed.
- In 2024, additional fusing will be installed.
- In 2024, additional animal guarding will be installed.

06 Circuit 11506 -- FREEMANSBURG 15-06

Performance Analysis

The FREEMANSBURG 15-06 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 9, 2023, an issue occurred causing a circuit breaker to trip to lockout. This outage affected 1,306 customers for up to 66 minutes resulting in 85,108 CMI.

On June 27, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 414 customers for up to 600 minutes resulting in 134,980 CMI.

On August 7, 2023, 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 2,819 minutes resulting in 483,976 CMI.

On August 8, 2023, during a period of strong wind, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 1,223 customers for up to 1,097 minutes resulting in 688,011 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 327 customers for up to 329 minutes resulting in 107,347 CMI.

In total, the FREEMANSBURG 15-06 circuit had 53 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (39); equipment failure (6); animal contacts (4); nothing found (2); other (1); vehicles (1).

Remedial Actions

- In 2023, two additional single-phase reclosers were installed.
- In 2023, additional fusing was installed.
- In 2024, additional fusing will be installed.
- In 2024, additional single-phase reclosers will be installed.
- In 2024, an additional tie will be evaluated.
- In 2024, a section of this circuit will be reconductored.
- In 2024, several poles will be replaced.
- In 2025, a new substation will be constructed.

07 Circuit 24602 -- VARDEN 46-02

Performance Analysis

The VARDEN 46-02 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 30, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 351 customers for up to 608 minutes resulting in 213,337 CMI.

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.

In total, the VARDEN 46-02 circuit had 85 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (62); animal contacts (8); equipment failure (8); nothing found (3); other (2); vehicles (2).

Remedial Actions

- In 2023, two single-phase reclosers were installed.
- In 2023, several poles were replaced with more scheduled for 2024.
- In 2024, additional animal guarding will be installed.
- In 2024, full circuit trimming will be performed.
- In 2024, proactive fault sensors will be installed on this circuit.
- In 2024, a new Smart Grid device will be installed.

08 Circuit 25801 -- SULLIVAN TRAIL 58-01

Performance Analysis

The SULLIVAN TRAIL 58-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On June 7, 2023, an issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,733 customers for up to 162 minutes resulting in 18,757 CMI.

On September 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 99 customers for up to 1,183 minutes resulting in 117,048 CMI.

In total, the SULLIVAN TRAIL 58-01 circuit had 113 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (72); animal contacts (24); equipment failure (12); nothing found (2); vehicles (2); other (1).

Remedial Actions

- In 2023, settings on an existing recloser were optimized.
- In 2023, additional fusing was installed.
- In 2023, two additional single-phase reclosers 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, single-phase ties will be evaluated.
- In 2024, proactive fault sensors will be installed.
- In 2024, a section of this circuit will be transferred to a neighboring circuit.
- In 2024, a three-phase tie line will be evaluated.

09 Circuit 10904 -- COOPERSBURG 09-04

Performance Analysis

The COOPERSBURG 09-04 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 29, 2023, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 510 customers for up to 324 minutes resulting in 22,648 CMI.

On August 7, 2023, during a period of heavy rain, an issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,499 customers for up to 581 minutes resulting in 809,265 CMI.

In total, the COOPERSBURG 09-04 circuit had 175 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (143); equipment failure (12); animal contacts (11); nothing found (4); vehicles (3); other (2).

Remedial Actions

- In 2023, additional fusing was installed.
- In 2023, a cross-arm was replaced.
- In 2023, proactive fault sensors were installed.
- In 2024, several poles will be replaced.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, two existing reclosers will be replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, additional single-phase reclosers will be evaluated.
- In 2024, additional fusing will be installed.
- In 2024, several sections of this circuit were reconductored.
- In 2024, undergrounding a portion of this circuit will be evaluated.

10 Circuit 43401 -- BENTON 34-01

Performance Analysis

The BENTON 34-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 51 customers for up to 2,181 minutes resulting in 111,195 CMI.

On September 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 747 customers for up to 4,169 minutes resulting in 562,495 CMI.

In total, the BENTON 34-01 circuit had 78 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (65); equipment failure (5); nothing found (4); animal contacts (3); other (1).

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 will be relocated.
- 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 three-phase sectionalizing device will be evaluated.

11 Circuit 49804 -- UNIVERSITY 98-04

Performance Analysis

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

On July 12, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 694 customers for up to 90 minutes resulting in 62,237 CMI.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,318 customers for up to 2,861 minutes resulting in 974,347 CMI.

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 causing a circuit breaker to trip to lockout. This outage affected 1,112 customers for up to 266 minutes resulting in 61,982 CMI.

In total, the UNIVERSITY 98-04 circuit had 91 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (57); animal contacts (16); equipment failure (9); nothing found (7); contact or dig in (1); Improper Design (1).

Remedial Actions

- In 2023, a three-phase sectionalizing device was installed.
- In 2023, a section of single-phase line was relocated underground.
- In 2023, several single-phase sectionalizing devices were installed.
- In 2024, a three-phase tie line will be constructed.
- In 2024, several single-phase reclosers will be upgraded to Smart grid devices.
- In 2024, a single-phase tie line will be constructed.
- In 2024, a section of conductor will be undergrounded.

12 Circuit 13501 -- MC MICHAELS 35-01

Performance Analysis

The MC MICHAELS 35-01 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 30, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 1,046 customers for up to 168 minutes resulting in 117,712 CMI.

On September 8, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 131 customers for up to 830 minutes resulting in 108,602 CMI.

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.

In total, the MC MICHAELS 35-01 circuit had 42 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (14); animal contacts (12); equipment failure (10); vehicles (3); contact or dig in (1); nothing found (1); other (1).

Remedial Actions

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

13 Circuit 13905 -- SEIDERSVILLE 39-05

Performance Analysis

The SEIDERSVILLE 39-05 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On June 8, 2023, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,122 customers for up to 71 minutes resulting in 76,054 CMI.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 146 customers for up to 2,432 minutes resulting in 245,868 CMI.

On March 23, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 3,110 customers for up to 173 minutes resulting in 153,929 CMI.

In total, the SEIDERSVILLE 39-05 circuit had 45 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (22); animal contacts (11); equipment failure (6); nothing found (2); other (2); vehicles (2).

Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, several poles will be replaced.
- In 2024, the circuit breaker will be replaced.
- In 2024, hot spot tree trimming will be performed.

14 Circuit 23401 -- HONESDALE 34-01

Performance Analysis

The HONESDALE 34-01 circuit experienced six outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 1, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 747 customers for up to 315 minutes resulting in 160,588 CMI.

On June 21, 2023, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 497 customers for up to 459 minutes resulting in 111,130 CMI.

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 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.

In total, the HONESDALE 34-01 circuit had 90 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (50); equipment failure (15); animal contacts (14); nothing found (5); other (4); vehicles (2).

Remedial Actions

- In 2023, several poles were replaced with more to be replaced in 2024.
- In 2023, a section of underground conductor was replaced.
- In 2023, additional animal guarding was installed.
- In 2024, additional fusing was installed.
- In 2024, a section of this circuit was reconductored.
- 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.

15 Circuit 20402 -- ASHFIELD 04-02

Performance Analysis

The ASHFIELD 04-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 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.

In total, the ASHFIELD 04-02 circuit had 34 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (20); animal contacts (6); equipment failure (5); other (2); nothing found (1).

Remedial Actions

- In 2024, additional fusing will be installed.
- In 2024, transferring a section of this circuit will be evaluated.
- In 2024, additional sectionalizing will be evaluated.
- In 2025, full circuit trimming will be performed.

16 Circuit 65904 -- SOUTH AKRON 59-04

Performance Analysis

The SOUTH AKRON 59-04 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 28, 2023, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 3,389 customers for up to 416 minutes resulting in 454,557 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 771 customers for up to 247 minutes resulting in 190,282 CMI.

In total, the SOUTH AKRON 59-04 circuit had 20 outages between April 2023 and March 2024, with the causes breaking down as follows: equipment failure (11); animal contacts (5); tree related (3); nothing found (1).

Remedial Actions

- In 2023, this circuit was infrared scanned for vulnerabilities when carrying higher load. Several remediations were performed including replacing crimps.
- In 2023, additional fusing was installed.
- In 2024, additional animal guarding will be installed.
- In 2024, additional fusing will be installed.

17 Circuit 46302 -- ROHRSBURG 63-02

Performance Analysis

The ROHRSBURG 63-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 7, 2023, during a period of strong wind, a tree contacted a pole or pole arm causing a load break disconnect switch to be interrupted. This outage affected 182 customers for up to 867 minutes resulting in 157,794 CMI.

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.

In total, the ROHRSBURG 63-02 circuit had 83 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (57); animal contacts (9); nothing found (8); equipment failure (7); 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.

18 Circuit 26401 -- INDIAN ORCHARD 64-01

Performance Analysis

The INDIAN ORCHARD 64-01 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 19, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 617 customers for up to 195 minutes resulting in 83,952 CMI.

On September 16, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 616 customers for up to 141 minutes resulting in 86,732 CMI.

On September 24, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break disconnect switch to be interrupted. This outage affected 722 customers for up to 345 minutes resulting in 37,250 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 616 customers for up to 194 minutes resulting in 119,504 CMI.

In total, the INDIAN ORCHARD 64-01 circuit had 107 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (58); animal contacts (27); equipment failure (13); nothing found (5); other (4).

Remedial Actions

- In 2023, a section of difficult-to-access conductor was relocated.
- In 2024, additional animal guarding will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, several poles will be replaced.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2025, full circuit trimming will be performed.

19 Circuit 45402 -- WEST BLOOMSBURG 54-02

Performance Analysis

The WEST BLOOMSBURG 54-02 circuit experienced eight outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead transformer causing an interruption. This outage affected 291 customers for up to 2,635 minutes resulting in 129,213 CMI.

On August 9, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 291 customers for up to 405 minutes resulting in 117,648 CMI.

On December 10, 2023, during a period of heavy rain, an animal interfered with an overhead transformer causing a recloser to trip to lockout. This outage affected 538 customers for up to 123 minutes resulting in 60,976 CMI.

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 142 customers for up to 1,021 minutes resulting in 144,882 CMI.

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 898 customers for up to 2,116 minutes resulting in 244,763 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 137 customers for up to 1,720 minutes resulting in 203,757 CMI.

On February 13, 2024, during a period of ice/sleet/snow, a tree contacted an overhead switch causing a recloser to trip to lockout. This outage affected 92 customers for up to 1,355 minutes resulting in 124,581 CMI.

On February 28, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 522 customers for up to 1,122 minutes resulting in 306,828 CMI.

In total, the WEST BLOOMSBURG 54-02 circuit had 125 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (99); animal contacts (9); equipment failure (6); nothing found (6); other (2); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2023, the protection settings on this circuit were reviewed and optimized.
- In 2023, a Proactive Circuit Analysis was performed with several minor remediations implemented.
- In 2024, hot spot trimming will be performed.
- In 2024, multiple sections of three-phase line will be evaluated for storm hardening.
- In 2024, moving a section of single-phase conductor to underground will be evaluated.

20 Circuit 28303 -- NEWFOUNDLAND 83-03

Performance Analysis

The NEWFOUNDLAND 83-03 circuit experienced seven outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On December 11, 2023, during a period of ice/sleet/snow, an 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 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 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 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.

In total, the NEWFOUNDLAND 83-03 circuit had 123 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (80); animal contacts (25); equipment failure (11); nothing found (6); other (1).

Remedial Actions

- In 2024, an existing recloser was replaced with a Smart Grid device.
- In 2024, full circuit trimming will be performed.
- In 2024, several poles will be replaced.
- 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.

21 Circuit 14403 -- SO SLATINGTON 44-03

Performance Analysis

The SO SLATINGTON 44-03 circuit experienced six outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 28, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 1,629 customers for up to 584 minutes resulting in 28,751 CMI.

On August 16, 2023, an equipment failure occurred on an overhead splice causing an interruption. This outage affected 555 customers for up to 134 minutes resulting in 35,820 CMI.

On August 18, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 908 customers for up to 399 minutes resulting in 270,781 CMI.

On January 13, 2024, during a period of strong wind, an issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 294 customers for up to 437 minutes resulting in 128,313 CMI.

On February 13, 2024, during a period of ice/sleet/snow, an issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 902 customers for up to 961 minutes resulting in 69,223 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 665 customers for up to 1,843 minutes resulting in 156,800 CMI.

In total, the SO SLATINGTON 44-03 circuit had 111 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (63); equipment failure (22); animal contacts (15); other (7); nothing found (3); vehicles (1).

Remedial Actions

- In 2023, multiple poles were replaced.
- In 2023, a cross-arm and insulator were replaced.
- In 2023, proactive fault sensors were installed.
- In 2023, an existing recloser was replaced with a Smart Grid device.
- In 2023, several dissimilar metal connections were remediated.
- In 2024, several cross arms were replaced after being identified by proactive fault sensors.
- In 2024, two additional Smart Grid devices will be installed.
- In 2024, a section of single-phase will be re-sourced.
- In 2024, a single-phase recloser will be installed.
- In 2024, several sections of conductor will be replaced or relocated.
- In 2024, the protection settings for this circuit will be reviewed.

22 Circuit 25501 -- MADISONVILLE 55-01

Performance Analysis

The MADISONVILLE 55-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 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.

In total, the MADISONVILLE 55-01 circuit had 113 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (77); equipment failure (16); animal contacts (12); nothing found (7); other (1).

Remedial Actions

- In 2023, a section of underground conductor was replaced.
- In 2024, a Smart Grid device was installed.
- In 2024, additional animal guarding will be installed.
- In 2024, a single-phase recloser will be replaced.
- In 2024, proactive fault sensors will be installed on this circuit.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2026, full circuit trimming will be performed.

23 Circuit 54101 -- S SHERMANSDALE 41-01

Performance Analysis

The S SHERMANSDALE 41-01 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 18, 2023, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 265 customers for up to 466 minutes resulting in 113,786 CMI.

On August 22, 2023, a tree contacted an overhead conductor causing an interruption. This outage affected 1,702 customers for up to 214 minutes resulting in 117,351 CMI.

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 252 customers for up to 738 minutes resulting in 127,842 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.

In total, the S SHERMANSDALE 41-01 circuit had 97 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (62); equipment failure (17); animal contacts (12); nothing found (4); vehicles (2).

Remedial Actions

- In 2023, proactive fault sensors were installed on this circuit.
- In 2024, three additional fuses were installed, with three more to be installed.
- In 2024, full circuit trimming will be performed.
- In 2024, an additional single-phase recloser will be installed.
- In 2024, transferring a section of single-phase conductor to a neighboring circuit will be evaluated.
- In 2025, an existing recloser will be converted to remote operability.

24 Circuit 25402 -- LAKE HARMONY 54-02

Performance Analysis

The LAKE HARMONY 54-02 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 24, 2023, a vehicle contact caused a recloser to trip to lockout. This outage affected 885 customers for up to 65 minutes resulting in 48,577 CMI.

On November 15, 2023, an animal interfered with an overhead component 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, 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 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.

In total, the LAKE HARMONY 54-02 circuit had 89 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (56); animal contacts (16); equipment failure (10); vehicles (5); nothing found (2).

Remedial Actions

- In 2024, a section of conductor will be evaluated for relocation.

- In 2024, additional fusing will be installed.
- In 2024, additional Smart Grid devices will be evaluated.
- In 2024, proactive fault sensors will be installed.
- In 2024, relocating a Smart Grid device will be evaluated.
- In 2024, tree shielding cable will be evaluated.
- In 2024, a three-phase tie will be evaluated.
- In 2024, hot spot trimming will be performed.
- In 2026, full circuit trimming will be performed.

25 Circuit 28604 -- BLYTHEBURN 86-04

Performance Analysis

The BLYTHEBURN 86-04 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 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.

In total, the BLYTHEBURN 86-04 circuit had 82 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (53); animal contacts (16); equipment failure (6); nothing found (5); contact or dig in (1); vehicles (1).

Remedial Actions

- In 2024, fusing will be installed at over 30 locations.
- In 2024, a three-phase tie will be evaluated.
- In 2024, additional sectionalizing will be evaluated.

26 Circuit 40101 -- HUNTER 01-01

Performance Analysis

The HUNTER 01-01 circuit experienced eight outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On December 19, 2023, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 925 customers for up to 448 minutes resulting in 380,719 CMI.

On January 9, 2024, during a period of strong wind, a tree contacted an overhead switch causing a recloser to trip to lockout. This outage affected 637 customers for up to 156 minutes resulting in 99,372 CMI.

On January 9, 2024, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 687 customers for up to 1,249 minutes resulting in 182,906 CMI.

On January 13, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 688 customers for up to 64 minutes resulting in 43,708 CMI.

On February 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 2,170 customers for up to 7 minutes resulting in 15,190 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 53 customers for up to 3,388 minutes resulting in 141,168 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 691 customers for up to 4,792 minutes resulting in 739,528 CMI.

On February 28, 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 692 customers for up to 14 minutes resulting in 9,224 CMI.

In total, the HUNTER 01-01 circuit had 77 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (53); equipment failure (10); animal contacts (8); nothing found (4); vehicles (2).

Remedial Actions

- In 2023, a pole was replaced.
- In 2024, a single-phase recloser will be installed.
- In 2024, two sections of this circuit will be storm hardened.
- In 2024, proactive fault sensors will be installed.
- In 2024, additional fusing will be installed.
- In 2024, several cross-arms will be replaced.
- In 2025, full circuit trimming will be performed.
- In 2026, a new tie line will be constructed.

27 Circuit 11103 -- EGYPT 11-03

Performance Analysis

The EGYPT 11-03 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 24, 2023, during a period of heavy rain, a vehicle contact caused a circuit breaker to trip to lockout. This outage affected 1,296 customers for up to 11 minutes resulting in 14,217 CMI.

On October 14, 2023, during a period of heavy rain, a vehicle contacted a pole. This outage affected 652 customers for up to 1,476 minutes resulting in 961,281 CMI.

In total, the EGYPT 11-03 circuit had 14 outages between April 2023 and March 2024, with the causes breaking down as follows: animal contacts (4); tree related (4); vehicles (3); nothing found (2); equipment failure (1).

Remedial Actions

- In 2023, a pole was replaced.
- In 2023, load balancing was performed.
- In 2025, full circuit trimming will be performed.

28 Circuit 20601 -- GREENWOOD 06-01

Performance Analysis

The GREENWOOD 06-01 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 18, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 461 customers for up to 905 minutes resulting in 261,115 CMI.

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 a sectionalizing device to operate. 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.

In total, the GREENWOOD 06-01 circuit had 52 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (35); equipment failure (8); animal contacts (5); vehicles (3); contact or dig in (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 single-phase reclosers will be evaluated.
- In 2024, relocating or rebuilding a section of conductor will be evaluated.
- In 2024, a new tie line will be evaluated.

29 Circuit 17902 -- BARTONSVILLE 79-02

Performance Analysis

The BARTONSVILLE 79-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 733 customers for up to 654 minutes resulting in 411,881 CMI.

On August 8, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 95 customers for up to 1,893 minutes resulting in 179,832 CMI.

On March 11, 2024, an issue occurred causing a recloser to trip to lockout. This outage affected 378 customers for up to 286 minutes resulting in 107,356 CMI.

In total, the BARTONSVILLE 79-02 circuit had 66 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (46); animal contacts (11); equipment failure (6); nothing found (2); other (1).

Remedial Actions

- In 2023, a section of three-phase was reconductored.
- In 2023, two single-phase reclosers were installed.
- In 2023, a section of conductor was relocated underground.
- In 2024, additional animal guarding will be installed.
- In 2024, several poles will be replaced.
- In 2024, full circuit trimming will be performed.
- In 2025, a Smart Grid device will be installed.
- In 2025, additional single-phase reclosers will be installed.
- In 2025, a single-phase tie will be constructed.

30 Circuit 67702 -- WERNERSVILLE 77-02

Performance Analysis

The WERNERSVILLE 77-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 22, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 765 customers for up to 760 minutes resulting in 630,389 CMI.

On July 7, 2023, a tree contacted an overhead conductor causing an interruption. This outage affected 513 customers for up to 368 minutes resulting in 109,720 CMI.

On January 10, 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 762 customers for up to 276 minutes resulting in 128,529 CMI.

In total, the WERNERSVILLE 77-02 circuit had 49 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (36); animal contacts (5); equipment failure (5); nothing found (2); vehicles (1).

Remedial Actions

- In 2023, an additional fuse was installed.
- In 2024, additional fusing was installed.
- In 2024, several sections of single-phase will be evaluated for reconductoring.
- In 2024 an additional single-phase protective device will be evaluated.
- In 2025, a section of single-phase will be reconductored.
- In 2026, full circuit trimming will be performed.

31 Circuit 47002 -- HUGHESVILLE 70-02

Performance Analysis

The HUGHESVILLE 70-02 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 15, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 2,030 customers for up to 128 minutes resulting in 91,014 CMI.

In total, the HUGHESVILLE 70-02 circuit had 80 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (52); animal contacts (11); equipment failure (10); vehicles (4); nothing found (3).

Remedial Actions

- In 2024, additional animal guarding will be installed.
- In 2024, a section of single-phase will be evaluated for relocation.
- In 2025, a section of single-phase will be relocated underground or reconducted.
- In 2024, three sections of three phase conductor will be evaluated for relocation.
- In 2024, the circuit breaker will be replaced.

32 Circuit 65002 -- NEFFSVILLE 50-02

Performance Analysis

The NEFFSVILLE 50-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 1, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 654 customers for up to 276 minutes resulting in 93,208 CMI.

On June 6, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,568 customers for up to 35 minutes resulting in 25,507 CMI.

On January 6, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 655 customers for up to 468 minutes resulting in 306,474 CMI.

In total, the NEFFSVILLE 50-02 circuit had 18 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (9); equipment failure (7); animal contacts (2).

Remedial Actions

- In 2023, two fuses were installed.
- In 2024, proactive fault sensors were installed.
- In 2024, three fuses will be installed.
- In 2024, a three-phase tie line will be evaluated.
- In 2025, full circuit trimming will be performed.

33 Circuit 16802 -- WAGNERS 68-02

Performance Analysis

The WAGNERS 68-02 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On October 18, 2023, a vehicle contact caused an interruption. This outage affected 308 customers for up to 346 minutes resulting in 106,497 CMI.

In total, the WAGNERS 68-02 circuit had 53 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (37); animal contacts (8); equipment failure (3); vehicles (3); nothing found (2).

Remedial Actions

- In 2023, an existing recloser was replaced.
- In 2023, several poles were replaced or reinforced.
- In 2024, additional animal guarding will be installed.
- In 2024, an existing recloser will be replaced.
- In 2024, an additional sectionalizing device will be installed.

34 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 April 2023 and March 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 34 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (14); equipment failure (12); animal contacts (4); nothing found (3); other (1).

Remedial Actions

- In 2024, additional animal guarding will be installed.
- In 2024, full circuit trimming will be performed.
- In 2024, additional fusing will be installed.
- In 2024, a sectionalizing device will be replaced.
- In 2025, a section of this circuit will be reconducted.

35 Circuit 15001 -- BLUE MOUNTAIN 50-01

Performance Analysis

The BLUE MOUNTAIN 50-01 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On June 28, 2023, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 654 customers for up to 403 minutes resulting in 187,976 CMI.

In total, the BLUE MOUNTAIN 50-01 circuit had 67 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (42); animal contacts (14); equipment failure (4); nothing found (3); other (2); vehicles (2).

Remedial Actions

- In 2023, several poles were replaced.
- In 2023, additional fusing was installed.
- In 2024, several single-phase reclosers were replaced.
- In 2024, an additional single-phase recloser was installed.
- In 2024, proactive fault sensors were installed.
- In 2024, the coordination settings on this circuit will be optimized.
- In 2024, a Proactive Circuit Analysis will be performed.
- In 2024, a section of this circuit will be reconductored.
- In 2025, a section of single-phase conductor will be reconfigured.
- In 2026, full circuit trimming will be performed.

36 Circuit 45602 -- WOOLRICH 56-02

Performance Analysis

The WOOLRICH 56-02 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 2, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 729 customers for up to 273 minutes resulting in 38,041 CMI.

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.

In total, the WOOLRICH 56-02 circuit had 57 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (31); animal contacts (12); equipment failure (11); nothing found (2); vehicles (1).

Remedial Actions

- In 2023, additional animal guarding was installed.
- In 2023, two additional single-phase reclosers were installed.
- In 2023, proactive fault sensors were installed.
- In 2023, full circuit trimming was performed.
- 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 2025, a section of difficult-to-access three-phase line will be relocated.

37 Circuit 15701 -- TANNERSVILLE 57-01

Performance Analysis

The TANNERSVILLE 57-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 17, 2023, a vehicle contacted a pole causing a sectionalizing device to operate. This outage affected 533 customers for up to 15 minutes resulting in 7,995 CMI.

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 63 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (37); animal contacts (10); equipment failure (10); other (3); contact or dig in (1); nothing found (1); vehicles (1).

Remedial Actions

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

38 Circuit 15604 -- NO STROUDSBURG 56-04

Performance Analysis

The NO STROUDSBURG 56-04 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On June 2, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 322 customers for up to 780 minutes resulting in 180,691 CMI.

On September 7, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 501 customers for up to 1,514 minutes resulting in 367,667 CMI.

On September 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 473 customers for up to 563 minutes resulting in 266,204 CMI.

On September 8, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 559 customers for up to 483 minutes resulting in 32,628 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 555 customers for up to 342 minutes resulting in 189,810 CMI.

In total, the NO STROUDSBURG 56-04 circuit had 89 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (57); animal contacts (18); equipment failure (8); nothing found (3); vehicles (2); other (1).

Remedial Actions

- In 2024, additional fusing was installed.
- In 2024, proactive fault sensors were installed.
- In 2024, additional animal guarding will be installed.
- In 2024, an additional sectionalizing device will be added.
- In 2024, an existing recloser will be replaced.
- In 2024, single-phase tie lines will be evaluated.
- In 2026, a section of this circuit will be reconductored.

39 Circuit 27402 -- KEYSER AVENUE 74-02

Performance Analysis

The KEYSER AVENUE 74-02 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 10, 2023, during a period of heavy rain, the circuit was taken out of service at the direction of a non-PPL authority. This outage affected 772 customers for up to 1,304 minutes resulting in 488,821 CMI.

In total, the KEYSER AVENUE 74-02 circuit had 21 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (12); animal contacts (3); nothing found (2); other (2); equipment failure (1); vehicles (1).

Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, a single-phase recloser will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, numerous cutouts will be replaced.

40 Circuit 53901 -- HALIFAX 39-01

Performance Analysis

The HALIFAX 39-01 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 17, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 264 customers for up to 568 minutes resulting in 141,336 CMI.

On July 24, 2023, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 239 customers for up to 1,864 minutes resulting in 202,990 CMI.

On July 25, 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 435 customers for up to 233 minutes resulting in 100,819 CMI.

On December 26, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 717 customers for up to 272 minutes resulting in 45,344 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 117 customers for up to 1,659 minutes resulting in 194,031 CMI.

In total, the HALIFAX 39-01 circuit had 58 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (34); equipment failure (10); animal contacts (6); nothing found (6); other (1); vehicles (1).

Remedial Actions

- In 2023, two single-phase reclosers were installed.
- In 2023, additional fusing was installed.
- In 2024, two additional fuses were installed with another one to be installed.
- In 2024, a new Smart Grid device will be installed.
- In 2024, substation protection capabilities will be upgraded.
- In 2024, poles at a river-crossing location will be upgraded to a larger class and from wood to steel.

41 Circuit 12402 -- MILFORD 24-02

Performance Analysis

The MILFORD 24-02 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 17, 2023, an animal interfered with a substation component causing a circuit breaker to trip to lockout. This outage affected 558 customers for up to 6 minutes resulting in 3,348 CMI.

On August 18, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 556 customers for up to 90 minutes resulting in 48,276 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 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.

In total, the MILFORD 24-02 circuit had 57 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (46); animal contacts (4); nothing found (3); contact or dig in (2); other (2).

Remedial Actions

- In 2023, additional fusing was installed.
- In 2024, additional animal guarding will be installed.
- In 2024, full circuit trimming will be performed.
- In 2024, three single-phase reclosers will be installed.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, additional fusing will be installed.
- In 2024, a single-phase recloser will be replaced.

42 Circuit 13502 -- MC MICHAELS 35-02

Performance Analysis

The MC MICHAELS 35-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 23, 2023, a vehicle contacted a pole causing an interruption. This outage affected 263 customers for up to 813 minutes resulting in 208,315 CMI.

On December 18, 2023, during a period of strong wind, a tree contacted an overhead splice causing a circuit breaker to trip to lockout. This outage affected 514 customers for up to 477 minutes resulting in 205,069 CMI.

On March 12, 2024, a tree contacted an overhead conductor. This outage affected 514 customers for up to 9 minutes resulting in 4,425 CMI.

In total, the MC MICHAELS 35-02 circuit had 34 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (19); animal contacts (8); equipment failure (5); nothing found (1); vehicles (1).

Remedial Actions

- In 2024, several poles were replaced.
- In 2024, additional animal guarding will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2025, full circuit trimming will be performed.

43 Circuit 40901 -- JERSEY SHORE 09-01

Performance Analysis

The JERSEY SHORE 09-01 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 9, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 554 customers for up to 422 minutes resulting in 173,002 CMI.

On May 12, 2023, an equipment failure occurred on an overhead switch causing a motor operated switch to be interrupted. This outage affected 768 customers for up to 19 minutes resulting in 14,330 CMI.

On September 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 241 customers for up to 1,616 minutes resulting in 325,661 CMI.

In total, the JERSEY SHORE 09-01 circuit had 56 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (35); equipment failure (11); animal contacts (6); nothing found (2); vehicles (2).

Remedial Actions

- In 2024, an additional Smart Grid device will be installed.
- In 2024, tree guarding cable will be evaluated.
- In 2024, four porcelain cutouts will be replaced.
- In 2024, animal guarding will be installed.
- In 2025, the circuit breaker will be replaced.

- In 2025, relays in the substation will be upgraded.

44 Circuit 23902 -- EFFORT MOUNTAIN 39-02

Performance Analysis

The EFFORT MOUNTAIN 39-02 circuit experienced five outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 92 customers for up to 1,410 minutes resulting in 129,710 CMI.

On December 29, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,252 customers for up to 202 minutes resulting in 32,808 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 503 customers for up to 457 minutes resulting in 96,374 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 98 customers for up to 1,679 minutes resulting in 156,549 CMI.

On March 27, 2024, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 782 customers for up to 7 minutes resulting in 5,474 CMI.

In total, the EFFORT MOUNTAIN 39-02 circuit had 62 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (38); animal contacts (10); equipment failure (7); nothing found (3); vehicles (3); other (1).

Remedial Actions

- In 2023, several poles were replaced.
- In 2023, a single-phase recloser was installed and another was replaced.
- In 2023, a section of multi-phase conductor was extended.
- In 2023, a section of single-phase conductor was relocated.
- In 2024, additional animal guarding was installed.
- In 2024, a capacitor bank was replaced.
- In 2024, numerous porcelain cutouts will be replaced.
- In 2024, additional single-phase reclosers will be evaluated.
- In 2024, a tie line will be evaluated.
- In 2025, full circuit trimming will be performed.

45 Circuit 28102 -- TWIN LAKES 81-02

Performance Analysis

The TWIN LAKES 81-02 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 22, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 213 customers for up to 574 minutes resulting in 109,843 CMI.

On July 14, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 212 customers for up to 1,318 minutes resulting in 153,538 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 133 customers for up to 0 minutes 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.

In total, the TWIN LAKES 81-02 circuit had 65 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (44); animal contacts (12); equipment failure (7); nothing found (2).

Remedial Actions

- In 2023, a single-phase recloser was installed.
- In 2023, proactive fault sensors were installed.
- In 2023, several poles were replaced with more scheduled for 2024.
- In 2024, a new Smart Grid device will be installed.
- In 2024, numerous porcelain cutouts will be replaced.
- In 2024, a single-phase recloser will be installed.
- In 2024, additional animal guarding will be installed.
- In 2026, full circuit trimming will be performed.

46 Circuit 14008 -- SELLERSVILLE 40-08

Performance Analysis

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

On July 19, 2023, a vehicle contacted a pole causing a transformer to be interrupted. This outage affected 690 customers for up to 676 minutes resulting in 87,347 CMI.

In total, the SELLERSVILLE 40-08 circuit had 65 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (54); animal contacts (3); nothing found (3); equipment failure (2); other (2); vehicles (1).

Remedial Actions

- In 2023, a section of single-phase line was extended.
- In 2023, proactive fault sensors were installed.
- In 2024, additional animal guarding will be installed.
- In 2024, additional fusing will be installed.
- In 2024, two single-phase reclosers will be installed.
- In 2024, two additional Smart Grid devices will be installed.

47 Circuit 18001 -- ZIONSVILLE 80-01

Performance Analysis

The ZIONSVILLE 80-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 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.

In total, the ZIONSVILLE 80-01 circuit had 79 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (66); animal contacts (4); equipment failure (4); nothing found (3); other (2).

Remedial Actions

- In 2024, full circuit trimming will be performed.
- In 2024, several poles will be replaced.
- In 2024, an additional Smart Grid device will be installed.
- In 2024, proactive fault sensors will be installed.
- In 2024, sections of this circuit will be evaluated for reconductoring and relocation.

48 Circuit 50105 -- HARRISBURG 69 KV LINE 01-05

Performance Analysis

The HARRISBURG 69 KV LINE 01-05 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On May 6, 2023, a vehicle contacted a pole causing an interruption. This outage affected 561 customers for up to 370 minutes resulting in 193,548 CMI.

On November 11, 2023, a vehicle contact caused a circuit breaker to trip to lockout. This outage affected 1,598 customers for up to 540 minutes resulting in 145,087 CMI.

On November 22, 2023, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 592 customers for up to 84 minutes resulting in 49,728 CMI.

In total, the HARRISBURG 69 KV LINE 01-05 circuit had 14 outages between April 2023 and March 2024, with the causes breaking down as follows: equipment failure (5); tree related (5); vehicles (2); animal contacts (1); nothing found (1).

Remedial Actions

- In 2023, full circuit trimming was performed.
- In 2023, additional fusing was installed.
- In 2024, additional fusing was installed.
- In 2024, three cross-arms will be replaced.
- In 2024, a new substation will be commissioned with upgraded circuit breakers.
- In 2024, proactive fault sensors will be installed.

49 Circuit 22601 -- KIMBLES 26-01

Performance Analysis

The KIMBLES 26-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 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.

In total, the KIMBLES 26-01 circuit had 48 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (22); animal contacts (10); equipment failure (10); nothing found (5); vehicles (1).

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.

50 Circuit 44701 -- MUNCY 47-01

Performance Analysis

The MUNCY 47-01 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On June 3, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 315 customers for up to 384 minutes resulting in 121,179 CMI.

On July 18, 2023, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,170 customers for up to 281 minutes resulting in 100,530 CMI.

On January 28, 2024, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 715 customers for up to 131 minutes resulting in 58,052 CMI.

In total, the MUNCY 47-01 circuit had 51 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (28); animal contacts (11); equipment failure (8); contact or dig in (1); nothing found (1); other (1); vehicles (1).

Remedial Actions

- In 2024, a set of two-phase manual disconnects was installed.
- In 2024, additional animal guarding will be installed.
- In 2024, an additional line inspection will be performed for high-risk segments.
- In 2026, full circuit trimming will be performed.

51 Circuit 28402 -- HARTLAND 84-02

Performance Analysis

The HARTLAND 84-02 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 8, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 912 customers for up to 440 minutes resulting in 212,082 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 408 customers for up to 365 minutes resulting in 148,907 CMI.

In total, the HARTLAND 84-02 circuit had 62 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (45); animal contacts (6); equipment failure (6); vehicles (3); contact or dig in (1); nothing found (1).

Remedial Actions

- In 2024, a section of line that was contacting trees due to a foreign utility pole issue was remediated.
- In 2024, additional fusing will be installed.
- In 2024, the protection settings on this circuit will be reviewed and optimized.
- In 2024, additional sectionalizing will be evaluated.
- In 2024, two new reclosers will be evaluated.
- In 2024, relocating two sections of difficult-to-access conductor will be evaluated.

52 Circuit 42401 -- GIRARD MANOR 24-01

Performance Analysis

The GIRARD MANOR 24-01 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 17, 2023, 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 385 minutes resulting in 132,947 CMI.

On August 16, 2023, an animal interfered with an overhead transmission component causing a recloser to trip to lockout. This outage affected 717 customers for up to 8 minutes resulting in 5,191 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 722 customers for up to 4,065 minutes resulting in 337,116 CMI.

In total, the GIRARD MANOR 24-01 circuit had 47 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (35); animal contacts (5); equipment failure (4); nothing found (3).

Remedial Actions

- In 2024, an additional sectionalizing device will be evaluated.
- In 2024, protection settings will be adjusted on one device to minimize momentary outages.
- In 2024, hot spot trimming will be completed.
- In 2024, additional fusing will be installed at several locations.
- In 2024, two existing poles will be replaced.
- In 2024, two cross-arms will be replaced.

53 Circuit 41902 -- REED 19-02

Performance Analysis

The REED 19-02 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 21, 2023, a tree contacted an overhead conductor causing an interruption. This outage affected 295 customers for up to 486 minutes resulting in 130,769 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 1,384 customers for up to 4,600 minutes resulting in 1,088,646 CMI.

In total, the REED 19-02 circuit had 96 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (54); animal contacts (21); equipment failure (12); nothing found (7); other (1); vehicles (1).

Remedial Actions

- In 2023, an existing recloser was replaced with a Smart Grid device.
- In 2024, a section of inaccessible single-phase conductor was relocated to roadside.
- In 2024, proactive fault sensors will be installed.
- In 2024, a section of single-phase conductor will be upgraded to multi-phase.
- In 2024, a single-phase recloser will be replaced with a Smart Grid device.
- In 2024, additional animal guarding will be installed.
- In 2024, a pole will be replaced.

54 Circuit 65604 -- QUARRYVILLE 56-04

Performance Analysis

The QUARRYVILLE 56-04 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 7, 2023, during a period of strong wind, an equipment failure occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,049 customers for up to 6 minutes resulting in 5,863 CMI.

On December 10, 2023, during a period of heavy rain, a tree contact occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,057 customers for up to 327 minutes resulting in 344,263 CMI.

On January 9, 2024, during a period of strong wind, a vehicle contact caused a recloser to trip to lockout. This outage affected 430 customers for up to 1,562 minutes resulting in 226,240 CMI.

In total, the QUARRYVILLE 56-04 circuit had 47 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (24); equipment failure (9); nothing found (8); animal contacts (4); other (1); vehicles (1).

Remedial Actions

- In 2024, animal guarding will be installed.
- In 2024, additional fusing will be installed at seven locations.
- In 2024, an existing three-phase recloser will be reprogrammed for single-phase operation.

55 Circuit 63403 -- HONEYBROOK 34-03

Performance Analysis

The HONEYBROOK 34-03 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 21, 2023, during a period of lightning, an issue occurred with an overhead switch causing a recloser to trip to lockout. This outage affected 2,649 customers for up to 256 minutes resulting in 141,154 CMI.

In total, the HONEYBROOK 34-03 circuit had 48 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (29); equipment failure (10); animal contacts (3); contact or dig in (2); nothing found (2); other (2).

Remedial Actions

- In 2023, additional fusing was installed.
- In 2024, additional fusing will be installed.
- In 2024, proactive fault sensors will be installed.

56 Circuit 27102 -- GREENFIELD 71-02

Performance Analysis

The GREENFIELD 71-02 circuit experienced four outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 14, 2023, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 896 customers for up to 287 minutes resulting in 34,725 CMI.

On September 9, 2023, 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 453 minutes resulting in 189,354 CMI.

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.

In total, the GREENFIELD 71-02 circuit had 62 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (39); animal contacts (11); vehicles (6); equipment failure (5); nothing found (1).

Remedial Actions

- In 2023, three single-phase reclosers were installed.
- In 2023, additional animal guarding was installed.
- In 2023, several porcelain cutouts were replaced.
- In 2024, several poles will be replaced.
- In 2024, a section of this circuit will be reconnected or relocated.
- In 2024, four single-phase reclosers will be installed.
- In 2024, proactive fault sensors will be installed on this circuit.
- In 2024, some customers on this circuit will be transferred to a neighboring circuit.
- In 2025, a section of this circuit will be reconnected.
- In 2025, an additional Smart Grid device will be installed.

57 Circuit 28602 -- BLYTHEBURN 86-02

Performance Analysis

The BLYTHEBURN 86-02 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 22, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 387 customers for up to 342 minutes resulting in 126,744 CMI.

On May 25, 2023, a vehicle contact caused a sectionalizing device to be interrupted. This outage affected 543 customers for up to 292 minutes resulting in 158,148 CMI.

On September 23, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 242 customers for up to 450 minutes resulting in 108,870 CMI.

In total, the BLYTHEBURN 86-02 circuit had 57 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (37); animal contacts (7); equipment failure (7); vehicles (4); nothing found (1); other (1).

Remedial Actions

- In 2024, additional fusing will be installed.
- In 2024, a new tie line will be evaluated.
- In 2024, full circuit trimming will be performed.

58 Circuit 44505 -- HAMILTON 45-05

Performance Analysis

The HAMILTON 45-05 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 17, 2023, an animal interfered with an overhead component causing a circuit breaker to trip to lockout. This outage affected 909 customers for up to 81 minutes resulting in 13,959 CMI.

On January 14, 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 376 customers for up to 1,992 minutes resulting in 540,089 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 913 customers for up to 2,185 minutes resulting in 1,015,252 CMI.

In total, the HAMILTON 45-05 circuit had 63 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (34); animal contacts (14); equipment failure (11); vehicles (3); nothing found (1).

Remedial Actions

- In 2025, full circuit trimming will be performed.
- In 2025, a section of inaccessible multi-phase line will be evaluated for re-sourcing.
- In 2025, additional sectionalizing devices will be evaluated.
- In 2026, the substation relays will be upgraded.

59 Circuit 45302 -- WEST BERWICK 53-02

Performance Analysis

The WEST BERWICK 53-02 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On September 2, 2023, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 773 customers for up to 76 minutes resulting in 18,994 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 454 customers for up to 1,241 minutes resulting in 353,120 CMI.

In total, the WEST BERWICK 53-02 circuit had 55 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (29); animal contacts (10); equipment failure (8); nothing found (4); vehicles (3); other (1).

Remedial Actions

- In 2024, this circuit will be evaluated for improved sectionalizing.
- In 2024, three sections of difficult-to-access conductor will be relocated.
- In 2024, additional fusing will be installed.
- In 2025, a Proactive Circuit Analysis will be performed.

60 Circuit 20403 -- ASHFIELD 04-03

Performance Analysis

The ASHFIELD 04-03 circuit experienced three outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On April 22, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 163 customers for up to 821 minutes resulting in 120,761 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 479 customers for up to 3,294 minutes resulting in 309,997 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 480 customers for up to 380 minutes resulting in 146,019 CMI.

In total, the ASHFIELD 04-03 circuit had 128 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (81); animal contacts (19); equipment failure (18); nothing found (7); vehicles (2); other (1).

Remedial Actions

- In 2023, ten single-phase reclosers were installed.
- In 2024, a single-phase tie will be constructed to the ASHFIELD 01 circuit.
- In 2024, a section of conductor will be evaluated for relocation.
- In 2024, additional fusing will be installed.
- In 2024, two sections of difficult-to-access conductor will be relocated.
- In 2024, full circuit trimming will be performed.

61 Circuit 29503 -- LEDGEDALE 95-03

Performance Analysis

The LEDGEDALE 95-03 circuit experienced one outage of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On December 3, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 464 customers for up to 453 minutes resulting in 172,776 CMI.

In total, the LEDGEDALE 95-03 circuit had 61 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (39); equipment failure (9); animal contacts (7); nothing found (4); other (2).

Remedial Actions

- In 2024, additional single-phase reclosers will be installed.
- In 2024, additional animal guarding will be installed.
- In 2024, a Proactive Circuit Analysis will be performed.
- In 2024, several poles will be replaced.

62 Circuit 61001 -- DONERVILLE 10-01

Performance Analysis

The DONERVILLE 10-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On July 27, 2023, 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 2,020 customers for up to 371 minutes resulting in 176,980 CMI.

On January 8, 2024, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 682 customers for up to 251 minutes resulting in 171,147 CMI.

In total, the DONERVILLE 10-01 circuit had 15 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (8); animal contacts (3); equipment failure (2); nothing found (1); vehicles (1).

Remedial Actions

- In 2024, additional fusing was installed.
- In 2024, an additional three-phase recloser will be installed.
- In 2024, installation of Smart Grid device will be evaluated.
- In 2024, animal guarding will be installed.
- In 2024, an existing three-phase recloser will be reprogrammed for single-phase operation.
- In 2025, full circuit trimming will be performed.

63 Circuit 13601 -- RICHLAND 36-01

Performance Analysis

The RICHLAND 36-01 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 809 customers for up to 1,151 minutes resulting in 495,193 CMI.

On January 13, 2024, during a period of strong wind, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 597 customers for up to 221 minutes resulting in 131,945 CMI.

In total, the RICHLAND 36-01 circuit had 69 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (45); equipment failure (8); nothing found (7); animal contacts (6); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2023, additional fusing was installed.
- In 2023, several poles were replaced.
- In 2023, proactive fault sensors were installed on this circuit.
- In 2024, coordination of protective devices will be evaluated.
- 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, an existing three-phase recloser will be upgraded to single-phase operation.
- In 2024, an additional single-phase recloser will be installed and another relocated.

64 Circuit 24603 -- VARDEN 46-03

Performance Analysis

The VARDEN 46-03 circuit experienced two outages of over 100,000 CMI or 500 CI between April 2023 and March 2024.

On August 7, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 81 customers for up to 1,257 minutes resulting in 101,769 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 671 customers for up to 1,470 minutes resulting in 787,079 CMI.

In total, the VARDEN 46-03 circuit had 81 outages between April 2023 and March 2024, with the causes breaking down as follows: tree related (56); equipment failure (10); animal contacts (9); nothing found (3); other (2); vehicles (1).

Remedial Actions

- In 2024, two single-phase reclosers will be installed.
- In 2024, numerous cutouts will be replaced.
- In 2024, several poles will be replaced.
- In 2026, full circuit trimming will be performed.

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
Animals	4,838	17.4%	63,521	4.4%	4,652,551	1.2%
Contact / Dig-In	177	0.6%	8,220	0.6%	962,068	0.3%
Directed by Non-PPL Authority	58	0.2%	4,542	0.3%	785,546	0.2%
Equipment Failures	5,131	18.4%	276,957	19.3%	41,484,065	10.9%
Improper Design	3	0.0%	1,226	0.1%	71,848	0.0%
Improper Installation	7	0.0%	3,665	0.3%	353,804	0.1%
Improper Operation	8	0.0%	2,396	0.2%	96,138	0.0%
Nothing Found	1,297	4.7%	88,563	6.2%	12,615,906	3.3%
Other Controllable	60	0.2%	5,930	0.4%	320,586	0.1%
Other Non-Control	458	1.6%	44,768	3.1%	8,403,057	2.2%
Other Public	40	0.1%	3,929	0.3%	258,761	0.1%
Tree Related	14,944	53.7%	829,422	57.9%	292,966,109	77.3%
Unknown	1	0.0%	5	0.0%	547	0.0%
Vehicles	790	2.8%	100,263	7.0%	16,167,516	4.3%
Total	27,812	100.0%	1,433,407	100.0%	379,138,502	100.0%

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 56% of cases, 68% of customer interruptions, and 86% 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 84% 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 19% 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. However, when animal contacts affect substation equipment, the effect may be widespread and potentially can interrupt thousands of customers on multiple circuits. In addition to guarding new distribution transformers and substations, PPL Electric initiated distribution and substation animal guarding programs in 2009 to focus systematically on protecting existing facilities most at risk of incurring animal-caused interruptions. A complete effectiveness review of this strategy is being evaluated.

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 34% of the cases of trouble, 43% of the customer interruptions and 61% 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 or a single-phase OCR locks open and when closed for test, the fuse holds, or the OCR remains closed, 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)	1st Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
Transmission					
Transmission C-tag poles (# of poles)	57	3	3	3	3
Transmission arm replacements (# of arms)	2	0	0	0	0
Transmission air break switch inspections (# of switches)	1	0	0	0	0
Transmission surge arrester installations (# of sets)	4	1	1	1	1
Transmission structure inspections (# of activities)	6,859	3,528	3,528	3,528	3,528
Transmission tree side trim-Bulk Power (linear feet)	N/A		4,445		4,445
Transmission herbicide-Bulk Power (# of acres)	N/A		33		33
Transmission reclearing (# of miles) BES Only	823	304	304	304	304
Transmission reclearing (# of miles) 69 kV	1,642	554	554	554	554
Transmission reclearing (# of miles) 138 kV	88	45	45	45	45
Transmission danger tree removals-Bulk Power (# of trees)	N/A		679		679
Substation					
Substation batteries (# of activities)	122	122	122	122	122
Circuit breakers (# of activities)	0	0	0	0	0
Substation inspections (# of activities)	1,250	313	422	313	422
Transformer maintenance (# of activities)	374	94	97	94	97

Inspection & Maintenance Goals/Objectives	Annual Budget (units)	1st Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
Distribution					
Distribution C-tag poles replaced (# of poles)	2,250	563	152	563	152
C-truss distribution poles (# of poles)	14,000	0	0	0	0
Capacitor (MVAR added)	N/A		0		0
OCR Replacements (# of)	91	22	4	22	4
Distribution pole inspections (# of poles)	50,000	11,659	11,659	11,659	11,659
Distribution line inspections (miles)	7,528	1,882	1,243	1,882	1,243
Group re-lamping (# of lamps)	0	0	0	0	0
Test sections of underground distribution cable	N/A		18		18
Distribution tree trimming (# of miles)	4,028	1,258	1,258	1,258	1,258
Distribution herbicide (# of acres)	N/A		179		179
Distribution >18" removals within R/W (# of trees)	N/A				
Distribution hazard tree removals outside R/W (# of trees)	N/A		2,367		2,367
LTN manhole inspections (# of)	326	0	0	0	0
LTN vault inspections (# of)	361	0	0	0	0
LTN network protector overhauls (# of)	84	0	0	0	0
LTN reverse power trip testing (# of)	28	0	0	0	0

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	1st Quarter			Year-to-date	
	Annual Budget (000s)	Budget (\$000)	Actual (\$000)	Budget (\$000)	Actual (\$000)
Provide Electric Service	6,371	1,724	1,368	1,724	1,368
Vegetation Management	29,115	7,539	14,106	7,539	14,106
Customer Response	54,995	12,628	16,022	12,628	16,022
Reliability Maintenance	19,034	4,783	4,852	4,783	4,852
System Upgrade	194	0	(1)	0	(1)
Customer Service/Accounts	67,720	19,709	64,481	19,709	64,481
Others	47,948	14,017	14,701	14,017	14,701
Total O&M Expenses	225,376	60,399	115,529	60,399	115,529

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	1st Quarter			Year-to-date	
	Annual Budget (000s)	Budget (\$000)	Actual (\$000)	Budget (\$000)	Actual (\$000)
New Service/Revenue	118,093	26,786	36,652	26,786	36,652
System Upgrade	388,584	67,554	52,676	67,554	52,676
Reliability & Maintenance	530,530	113,890	107,549	113,890	107,549
Customer Response	63,181	13,428	43,119	13,428	43,119
Other	22,823	4,470	8,952	4,470	8,952
Total	1,123,211	226,129	248,947	226,129	248,947

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">• Performs manual labor and assists employees in higher job classifications.
Helper	<ul style="list-style-type: none">• 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.
Journeyman Lineman	<ul style="list-style-type: none">• 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.
Journeyman Lineman-Trainee	<ul style="list-style-type: none">• 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.
Lineman Leader	<ul style="list-style-type: none">• 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.• Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job.• Performs all the direct duties of the Journeyman Lineman when not acting as a Lineman Leader.
Troubleman	<ul style="list-style-type: none">• Investigates and resolves trouble calls, voltage abnormalities on transmission and distribution systems associated with, but not limited to, PPL Electric facilities.

Appendix B

Electrical

Electrician Leader - Substation - Network - Underground	<ul style="list-style-type: none">• 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.• Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job.• Performs all direct duties of the Journeyman Electrician when not acting as a leader.
Helper - Substation - Network - Underground	<ul style="list-style-type: none">• 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.
Laborer - Substation - Network - Underground	<ul style="list-style-type: none">• Performs manual labor and assists employees in higher job classifications.
Journeyman Electrician - Substation - Network - Underground	<ul style="list-style-type: none">• 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.• Uses microprocessor-based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.

Appendix B

<p>Journeyman Electrician - Trainee</p> <ul style="list-style-type: none">- Substation- Network- Underground	<ul style="list-style-type: none">• 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.• Uses microprocessor-based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.
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