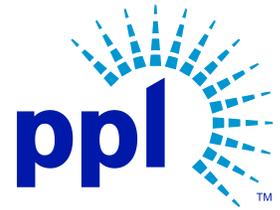


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**E-FILE**

July 27, 2023

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 June 30, 2023  
Docket No. M-2016-2522500**

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 June 30, 2023. 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 July 27, 2023, 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 or at (610) 774-5696.

Respectfully submitted,

A handwritten signature in blue ink that reads "Kimberly A. Klock". The signature is fluid and cursive, written in a professional style.

Kimberly A. Klock

Enclosures

cc via email: Patrick Cicero, Esquire  
NazAarah Sabree

Mr. Daniel Searfoorce  
Mr. Harry Bidelspach



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

*July 2023*

- 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 second quarter of 2023.

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

The following table provides data for the 12 months ending June 30, 2023.

SAIFI	BM 0.98	0.81
	STD 1.18	081
CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	BM 145	163
	STD 174	163
SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	BM 142	132
	STD 205	132
MAIFI <sup>1</sup>		.4
Average Number of Customers Served <sup>2</sup>		1,453,964
Number of Sustained Customer Interruptions (Trouble Cases)		22,477
Number of Customers Affected <sup>3</sup>		1,180,949
Customer Minutes of Interruptions (CMI)		191,919,704
Number of Customer Momentary Interruptions		526,203

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<sup>1</sup> Issues with the interface between PPL Electric's Meter software and Outage Management System have caused MAIFI to be understated. This issue does not affect SAIFI, SAIDI, or CAIDI.

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

<sup>3</sup> The data reflects the number of customers interrupted for each interruption event summed for all events, also known as customer interruptions. If a customer is affected by three separate cases of trouble, that customer represents three customer interruptions, but only one customer interrupted.

During the second quarter, there were no (0) PUC major events, three (3) PUC reportable events, and eleven (11) other storms that required the opening of one or more area emergency centers to manage restoration efforts.

For the rolling four quarters ending on 6/30/2023, storm impacts remain highly elevated by historical standards. PPL Electric has seen 20 storms (PUC and non-PUC) during the first six months of 2023. This is the most storms recorded from January through June for any year on record.

PPL Electric’s second quarter reliability performance saw SAIFI and SAIDI within the PUC standard and benchmark. CAIDI was within the PUC standard and 12% above the PUC benchmark value, largely attributable to ongoing elevated storm frequency. Smart Grid technology and automation benefit SAIFI and SAIDI but have a negative impact on CAIDI.

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 2021 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.

PPL Electric was a top decile SAIFI performer in the 2021 IEEE survey, as well as a top quartile SAIDI performer. Additionally, PPL Electric’s IEEE SAIFI was the single best among the 25 large utilities participating in the survey. Large utilities are those serving one million or more customers.

	IEEE CAIDI	IEEE SAIFI	IEEE SAIDI
2019	113	0.66	74
2020	99	0.69	69
2021	124	0.68	85
2022	124	0.68	84
R4Q ending 6/30/2023	125	0.67	84
IEEE First Quartile Ceiling	103	0.88	100
IEEE Second Quartile Ceiling	117	1.09	139

**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	CAIDI	SAIFI	Customers	Cases of Trouble	Customer Minutes Interrupted (CMI)
1	25801	549	165	3.33	1,842	81	1,010,787
2	23401	528	155	3.41	1,741	57	919,115
3	26603	463	138	3.36	1,602	63	741,627
4	25501	481	169	2.84	1,693	61	813,535
5	26604	417	183	2.28	2,425	75	1,010,452
6	58402	410	127	3.22	1,573	44	644,969
7	20401	799	296	2.70	1,309	60	1,046,249
8	47002	526	294	1.79	2,024	76	1,065,199
9	53601	404	107	3.78	1,122	31	453,352
10	15001	376	114	3.31	1,396	48	525,450
11	16801	400	159	2.51	1,657	53	662,421
12	10904	385	152	2.54	1,739	131	669,723
13	24703	403	183	2.20	1,623	26	654,011
14	64904	302	109	2.78	3,182	16	959,493
15	27102	560	184	3.05	896	47	501,961
16	17902	426	135	3.14	1,003	40	427,207
17	40201	322	120	2.68	1,675	75	538,571
18	10601	395	196	2.01	1,703	73	673,470
19	11506	387	150	2.59	1,302	71	504,509
20	26401	316	172	1.84	2,244	90	708,883
21	46001	304	161	1.88	2,361	42	716,718
22	27101	292	119	2.45	1,845	81	538,935
23	20403	301	162	1.86	1,959	92	590,606
24	13601	745	375	1.99	1,138	49	847,829

WPC Rank	Feeder ID	SAIDI	CAIDI	SAIFI	Customers	Cases of Trouble	Customer Minutes Interrupted (CMI)
25	29702	525	192	2.73	839	42	440,465
26	46702	374	180	2.08	1,257	52	470,054
27	21203	350	167	2.10	1,261	34	441,244
28	22406	415	170	2.44	956	39	397,216
29	64801	240	83	2.88	1,518	57	363,736
30	40901	332	155	2.14	1,147	52	380,331
31	53501	219	74	2.96	2,167	62	474,039
32	23902	299	167	1.79	1,491	39	445,713
33	46004	223	89	2.50	2,065	56	460,765
34	67801	260	174	1.49	2,153	26	559,884
35	21601	338	245	1.38	1,735	35	586,053
36	46602	239	105	2.28	1,556	72	372,013
37	15604	289	150	1.93	1,390	43	402,030
38	16101	344	235	1.46	1,566	63	538,377
39	45602	214	112	1.92	2,446	63	523,384
40	26601	309	166	1.86	1,262	42	390,556
41	46203	211	103	2.06	2,187	42	462,330
42	11003	432	156	2.77	722	18	311,577
43	16802	516	236	2.19	884	40	456,525
44	17002	219	61	3.60	1,076	40	235,352
45	46302	361	185	1.95	1,108	54	399,922
46	22703	244	156	1.56	1,671	18	408,247
47	24101	220	126	1.74	2,004	33	440,953
48	46206	230	96	2.40	1,220	26	281,083
49	65002	187	54	3.43	1,568	18	292,654
50	26001	428	327	1.31	1,453	75	622,397
51	64201	249	190	1.31	1,904	15	474,801
52	65702	291	247	1.18	1,923	25	560,510
53	29402	216	110	1.97	1,718	51	370,768
54	21901	195	120	1.62	2,616	47	509,644
55	52401	198	69	2.89	1,312	65	259,976
56	14306	184	97	1.91	2,611	11	480,194
57	45001	196	92	2.12	1,807	58	353,344
58	63201	237	142	1.66	1,529	35	361,696
59	17802	278	245	1.13	1,977	66	548,913
60	56803	193	63	3.08	1,280	35	247,482
61	14403	185	113	1.64	2,592	82	480,115
62	13606	290	226	1.28	1,645	30	476,681
63	42802	238	119	1.99	1,188	17	282,998

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

**01 Circuit 25801 -- SULLIVAN TRAIL 58-01**

Performance Analysis

The SULLIVAN TRAIL 58-01 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 4, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 326 customers for up to 425 minutes resulting in 138,481 CMI.

On September 9, 2022, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 791 customers for up to 133 minutes resulting in 105,535 CMI.

On December 16, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 165 customers for up to 814 minutes resulting in 134,184 CMI.

On June 7, 2023, an unidentified 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.

In total, the SULLIVAN TRAIL 58-01 circuit had 81 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (49); equipment failure (14); animal contacts (13); other (2); vehicles (2); nothing found (1).

Remedial Actions

- In 2022, hazard tree removal was performed.
- In 2022, a Proactive Circuit Analysis was performed with several minor remediations implemented.
- In 2023, additional fusing will be installed.
- In 2023, additional hazard tree removal will be evaluated.
- In 2023, settings on an existing recloser were optimized.
- In 2023, additional fusing will be installed.
- In 2023, two additional single-phase reclosers will be installed.
- In 2023, two sections of single-phase in a heavily wooded area will be evaluated for relocation.
- In 2023, a single-phase tap will be evaluated for additional protective devices.

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

### Performance Analysis

The HONESDALE 34-01 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 4, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,731 customers for up to 382 minutes resulting in 312,806 CMI.

On August 19, 2022, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 893 customers for up to 366 minutes resulting in 23,261 CMI.

On September 10, 2022, a vehicle contacted a pole causing an interruption. This outage affected 500 customers for up to 185 minutes resulting in 42,136 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.

In total, the HONESDALE 34-01 circuit had 57 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (26); equipment failure (13); nothing found (8); animal contacts (5); vehicles (5).

### Remedial Actions

- In 2022, additional animal guarding was installed.
- In 2022, two single-phase reclosers were installed.
- In 2023, several poles were replaced.
- In 2023, a single-phase recloser will be installed.
- In 2023, additional animal guarding will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2024, full circuit trimming will be performed.

## **03 Circuit 26603 -- BROOKSIDE 66-03**

### Performance Analysis

The BROOKSIDE 66-03 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 18, 2022, an unidentified issue occurred with an overhead switch causing a recloser to trip to lockout. This outage affected 1,001 customers for up to 112 minutes resulting in 111,211 CMI.

On September 23, 2022, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 1,491 customers for up to 137 minutes resulting in 188,548 CMI.

On August 30, 2022, during a period of strong wind, an unidentified issue occurred with a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,003 customers for up to 88 minutes resulting in 77,365 CMI.

In total, the BROOKSIDE 66-03 circuit had 63 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (37); equipment failure (16); animal contacts (5); nothing found (3); other (1); vehicles (1).

#### Remedial Actions

- In 2022, additional animal guarding was installed.
- In 2022, ten single-phase reclosers were installed.
- In 2022, numerous porcelain cutouts were replaced.
- In 2023, additional fusing will be installed.
- In 2023, additional animal guarding will be installed.
- In 2023, an additional single-phase recloser will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2025, full circuit trimming will be performed.

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

##### Performance Analysis

The MADISONVILLE 55-01 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 24, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 327 customers for up to 562 minutes resulting in 183,473 CMI.

On December 1, 2022, during a period of strong wind, a tree contact caused a circuit breaker to trip to lockout. This outage affected 1,692 customers for up to 400 minutes resulting in 289,076 CMI.

On December 1, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 537 customers for up to 245 minutes resulting in 31,600 CMI.

On January 29, 2023, a vehicle contacted a pole causing an interruption. This outage affected 820 customers for up to 408 minutes resulting in 129,664 CMI.

In total, the MADISONVILLE 55-01 circuit had 61 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (25); animal contacts (16); equipment failure (13); vehicles (4); nothing found (2); other (1).

### Remedial Actions

- In 2022, four poles were replaced.
- In 2022, hot spot trimming was performed.
- In 2022, two single-phase reclosers were installed.
- In 2022, three poles were replaced.
- In 2022, a section of underground conductor was replaced.
- In 2023, a section of underground conductor was replaced.
- In 2023, additional animal guarding will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2024, a section of difficult-to-access conductor will be relocated.

### **05 Circuit 26604 -- BROOKSIDE 66-04**

#### Performance Analysis

The BROOKSIDE 66-04 circuit experienced six outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 24, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 291 customers for up to 675 minutes resulting in 109,648 CMI.

On July 24, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 493 customers for up to 1,441 minutes resulting in 122,603 CMI.

On July 24, 2022, during a period of strong wind, a tree contacted an overhead transmission component causing a recloser to trip to lockout. This outage affected 105 customers for up to 1,199 minutes resulting in 125,877 CMI.

On February 22, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 531 customers for up to 61 minutes resulting in 31,923 CMI.

On June 12, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 984 customers for up to 235 minutes resulting in 231,230 CMI.

On September 27, 2022, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,179 customers for up to 15 minutes resulting in 17,095 CMI.

In total, the BROOKSIDE 66-04 circuit had 75 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (37); animal contacts (23); equipment failure (7); vehicles (5); contact or dig in (1); nothing found (1); other (1).

#### Remedial Actions

- In 2022, additional fusing was installed.
- In 2022, a Smart Grid device was installed.
- In 2022, six single-phase reclosers were installed.
- In 2022, additional animal guarding was installed.
- In 2023, three existing reclosers will be replaced with single-phase reclosers.
- In 2023, additional animal guarding will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2023, additional fusing will be installed.
- In 2023, five single-phase reclosers will be installed.
- In 2023, a new line and terminal will be evaluated.
- In 2024, a section of difficult-to-access three-phase conductor will be relocated.
- In 2024, a battery storage system will be installed on this circuit.
- In 2024, a section of this circuit will receive tree shielding cable.

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

#### Performance Analysis

The MOUNT ROCK 84-02 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On June 23, 2023, during a period of heavy rain, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 383 customers for up to 392 minutes resulting in 128,880 CMI.

On November 3, 2022, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,565 customers for up to 273 minutes resulting in 75,052 CMI.

On January 13, 2023, an equipment failure occurred on an overhead transformer causing a circuit breaker to trip to lockout. This outage affected 1,125 customers for up to 208 minutes resulting in 217,943 CMI.

In total, the MOUNT ROCK 84-02 circuit had 44 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (17); equipment failure (12); animal contacts (6); vehicles (4); nothing found (2); other (2); contact or dig in (1).

#### Remedial Actions

- In 2023, full circuit trimming will be performed.
- In 2023, a new tie line will be installed.

- In 2023, additional fusing will be installed.
- In 2023, a three-phase device will be evaluated for upgrade to remote operability.
- In 2023, a new tie line will be evaluated.
- In 2023, an additional three-phase sectionalizing device will be evaluated.

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

### Performance Analysis

The ASHFIELD 04-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On January 25, 2023, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,252 customers for up to 550 minutes resulting in 366,783 CMI.

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.

In total, the ASHFIELD 04-01 circuit had 60 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (26); equipment failure (13); animal contacts (12); nothing found (5); vehicles (4).

### Remedial Actions

- In 2022, a three-phase tie was constructed.
- In 2023, remotely operable tie devices were commissioned.
- In 2023, a remotely operable device was reprogrammed.
- In 2023, two additional Smart Grid devices will be evaluated.
- In 2023, additional fusing will be evaluated.
- In 2023, single-phase fuse coordination will be optimized.
- In 2025, a single-phase tie to the ASHFIELD 04-03 circuit will be constructed.

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

### Performance Analysis

The HUGHESVILLE 70-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 24, 2022, during a period of lightning, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 625 customers for up to 507 minutes resulting in 235,955 CMI.

In total, the HUGHESVILLE 70-02 circuit had 76 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (53); equipment failure (12); animal contacts (6); vehicles (3); nothing found (2).

#### Remedial Actions

- In 2022, an existing recloser was replaced with a Smart Grid device.
- In 2022, an existing cutout was replaced.
- In 2023, a section of difficult-to-access single-phase will be evaluated for relocation.
- In 2023, two sections of single-phase will be evaluated for undergrounding or reconductoring.
- In 2023, additional animal guarding will be installed.
- In 2024, several sections of this circuit will be storm hardened.

### **09 Circuit 53601 -- DALMATIA 36-01**

#### Performance Analysis

The DALMATIA 36-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 28, 2022, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,125 customers for up to 32 minutes resulting in 35,316 CMI.

On October 15, 2022, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 322 customers for up to 361 minutes resulting in 116,045 CMI.

On June 12, 2023, during a period of strong wind, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 746 customers for up to 122 minutes resulting in 82,234 CMI.

In total, the DALMATIA 36-01 circuit had 31 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (11); equipment failure (10); vehicles (5); nothing found (3); animal contacts (1); contact or dig in (1).

#### Remedial Actions

- In 2023, additional fusing was installed.
- In 2023, a three-phase device will be upgraded to remote operability.
- In 2023, the three-phase portion of this circuit will be reviewed for opportunities to reduce or eliminate vehicle related incidents.
- In 2025, a three-phase tie will be constructed to the HUNTER circuit.

## **10 Circuit 15001 -- BLUE MOUNTAIN 50-01**

### Performance Analysis

The BLUE MOUNTAIN 50-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 23, 2022, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,391 customers for up to 69 minutes resulting in 27,159 CMI.

On November 26, 2022, a vehicle contacted a pole causing an outage. This outage affected 1,092 customers for up to 10 minutes resulting in 10,909 CMI.

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 48 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (29); animal contacts (10); nothing found (4); equipment failure (3); vehicles (2).

### Remedial Actions

- In 2022, four additional single-phase reclosers were installed.
- In 2022, additional fusing was installed.
- In 2022, the protection scheme was evaluated. Several protection settings were revised as a result.
- In 2023, a pole was replaced.
- In 2023, additional fusing will be installed.
- In 2023, additional animal guarding will be installed.
- In 2023, settings will be optimized on a three-phase protective device.
- In 2024, an additional single-phase recloser will be installed.
- In 2024, a single-phase section will be reconfigured for increased reliability.
- In 2024, a Proactive Circuit Analysis will be performed.

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

### Performance Analysis

The WAGNERS 68-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 23, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 259 customers for up to 481 minutes resulting in 107,333 CMI.

On October 7, 2022, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 730 customers for up to 349 minutes resulting in 254,653 CMI.

On July 13, 2022, a dig in occurred on an underground conductor causing a recloser to trip to lockout. This outage affected 1,482 customers for up to 998 minutes resulting in 113,656 CMI.

In total, the WAGNERS 68-01 circuit had 53 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (41); equipment failure (8); animal contacts (3); contact or dig in (1).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2023, a three-phase recloser was replaced.
- In 2023, additional animal guarding will be installed.
- In 2023, three single-phase reclosers will be installed.
- In 2023, an additional sectionalizer will be installed.
- In 2025, reconductoring will be performed on a section of this circuit.
- In 2025, a single-phase tie will be constructed.

### **12 Circuit 10904 -- COOPERSBURG 09-04**

#### Performance Analysis

The COOPERSBURG 09-04 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 27, 2022, a tree contacted a pole or pole arm causing an interruption. This outage affected 1,732 customers for up to 187 minutes resulting in 41,814 CMI.

In total, the COOPERSBURG 09-04 circuit had 131 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (100); equipment failure (12); animal contacts (9); vehicles (6); nothing found (3); other (1).

#### Remedial Actions

- In 2022, five additional single-phase reclosers were installed.
- In 2022, targeted trimming was performed.
- In 2022, a section of difficult-to-access single-phase was relocated.
- In 2022, a single-phase recloser was upgraded.
- In 2022, predictive fault indicators were installed.
- In 2022, a three-phase recloser was replaced.
- In 2022, additional animal guarding was installed.
- In 2023, additional animal guarding will be installed.
- In 2023, a section of conductor in a heavily wooded area will be evaluated for reconductoring with covered conductor.

- In 2023, a section of this circuit will be evaluated for reconfiguration.
- In 2023, settings on a protective device will be optimized.
- In 2023, additional fuses will be installed.
- In 2023, additional single-phase reclosers will be evaluated.
- In 2024, additional fuses will be installed.
- In 2025, the substation will be relocated outside of the flood zone.

### **13 Circuit 24703 -- FREELAND 47-03**

#### Performance Analysis

The FREELAND 47-03 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On March 3, 2023, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 547 customers for up to 602 minutes resulting in 184,422 CMI.

On August 4, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 414 customers for up to 627 minutes resulting in 186,858 CMI.

On August 4, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 297 customers for up to 367 minutes resulting in 108,987 CMI.

On December 24, 2022, during a period of extreme temperatures, an equipment failure occurred causing a circuit breaker to trip to lockout. This outage affected 1,618 customers for up to 22 minutes resulting in 34,204 CMI.

In total, the FREELAND 47-03 circuit had 26 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (10); equipment failure (7); animal contacts (6); nothing found (2); vehicles (1).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2022, hazard tree removal was performed.
- In 2022, a section of single-phase was extended.
- In 2022, an existing section of line was split into two sections with tie capability.
- In 2022, an existing Smart Grid device was replaced.
- In 2022, an additional single-phase recloser was installed.
- In 2023, a single-phase recloser will be installed.
- In 2023, a large single-phase tap will be transferred to an adjacent circuit.
- In 2023, 12 new fuses will be installed.
- In 2023, the circuit protection settings will be optimized.
- In 2025, a three-phase tie to the ST JOHNS 30-02 will be constructed.

## **14 Circuit 64904 -- MILLERSVILLE 49-04**

### Performance Analysis

The MILLERSVILLE 49-04 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 1, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 2,087 customers for up to 223 minutes resulting in 316,806 CMI.

On April 30, 2023, during a period of heavy rain, an equipment failure occurred on an overhead switch causing a circuit breaker to trip to lockout. This outage affected 3,180 customers for up to 81 minutes resulting in 97,556 CMI.

On June 27, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 2,956 customers for up to 827 minutes resulting in 416,697 CMI.

In total, the MILLERSVILLE 49-04 circuit had 16 outages between July 2022 and June 2023, with the causes breaking down as follows: equipment failure (6); tree related (6); contact or dig in (2); animal contacts (1); vehicles (1).

### Remedial Actions

- In 2023, additional fusing will be installed.
- In 2023, an additional single-phase recloser will be evaluated.
- In 2023, a section of single-phase will be evaluated for reconductoring.
- In 2025, a section of single-phase recloser will be recondotored.

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

### Performance Analysis

The GREENFIELD 71-02 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 6, 2022, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 416 customers for up to 497 minutes resulting in 145,037 CMI.

On December 16, 2022, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 73 customers for up to 1,501 minutes resulting in 106,526 CMI.

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.

In total, the GREENFIELD 71-02 circuit had 47 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (26); animal contacts (9); equipment failure (6); other (3); contact or dig in (1); nothing found (1); vehicles (1).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2022, numerous porcelain cutouts were replaced.
- In 2022, several poles were replaced.
- In 2023, one single-phase recloser was installed with two more to be installed this year.
- In 2023, additional animal guarding will be installed.
- In 2023, several porcelain cutouts will be replaced.
- In 2023, 16 poles will be replaced.
- In 2023, an additional Smart Grid device will be evaluated for this circuit.
- In 2024, a section of this circuit will be reconductored or relocated.
- In 2024, three single-phase reclosers will be installed.

### **16 Circuit 17902 -- BARTONSVILLE 79-02**

#### Performance Analysis

The BARTONSVILLE 79-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 28, 2022, a tree contacted an overhead conductor causing an outage. This outage affected 824 customers for up to 126 minutes resulting in 50,760 CMI.

In total, the BARTONSVILLE 79-02 circuit had 40 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (23); animal contacts (8); equipment failure (4); nothing found (3); contact or dig in (1); other (1).

#### Remedial Actions

- In 2022, two single-phase reclosers were installed.
- In 2022, several poles were replaced.
- In 2023, one section of three-phase was reconductored.
- In 2023, additional animal guarding will be installed.
- In 2023, a section of conductor will be relocated underground.
- In 2023, full circuit trimming will be performed.
- In 2023, two single-phase reclosers will be installed.
- In 2025, a single-phase tie will be constructed.

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

### Performance Analysis

The BEAR GAP 02-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 8, 2022, an equipment failure occurred on a pole or pole arm causing an interruption. This outage affected 629 customers for up to 161 minutes resulting in 73,615 CMI.

On December 22, 2022, during a period of heavy rain, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 1,675 customers for up to 161 minutes resulting in 65,742 CMI.

In total, the BEAR GAP 02-01 circuit had 75 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (46); equipment failure (15); animal contacts (9); nothing found (3); vehicles (2).

### Remedial Actions

- In 2022, a section of conductor in a heavily wooded area was undergrounded.
- In 2022, a section of single-phase conductor was relocated.
- In 2022, approximately 150 hazard trees were removed.
- In 2023, a three-phase recloser was replaced.
- In 2023, a section of difficult-to-access conductor will be evaluated for relocation.
- In 2023, additional fusing will be evaluated.

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

### Performance Analysis

The BLOOMING GLEN 06-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 21, 2022, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 390 customers for up to 779 minutes resulting in 104,060 CMI.

On August 1, 2022, a vehicle contact caused a recloser to trip to lockout. This outage affected 793 customers for up to 367 minutes resulting in 88,167 CMI.

On September 6, 2022, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 599 customers for up to 242 minutes resulting in 144,730 CMI.

In total, the BLOOMING GLEN 06-01 circuit had 73 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (49); equipment failure (12); animal contacts (8); nothing found (2); vehicles (2).

## Remedial Actions

- In 2022, additional fusing was installed at nine locations.
- In 2022, two single-phase reclosers were installed.
- In 2022, hot spot trimming was performed.
- In 2022, a section of inaccessible conductor was re-sourced.
- In 2022, full circuit trimming was performed.
- In 2022, a section of this circuit was re-conducted.
- In 2023, additional animal guarding will be installed.
- In 2023, additional fusing will be installed.
- In 2023, an additional single-phase recloser was installed.
- In 2023, an additional single-phase recloser will be installed.
- In 2023, a section of conductor will be evaluated for relocation.
- In 2023, additional protective devices will be evaluated.
- In 2023, an additional multi-phase tie line will be evaluated.
- In 2024, a section of this circuit will be relocated.
- In 2024, two additional multi-phase protective devices will be installed.

## **19 Circuit 11506 -- FREEMANSBURG 15-06**

### Performance Analysis

The FREEMANSBURG 15-06 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On April 9, 2023, an unidentified 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, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 414 customers for up to 600 minutes resulting in 134,980 CMI.

In total, the FREEMANSBURG 15-06 circuit had 71 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (46); equipment failure (13); animal contacts (6); nothing found (4); contact or dig in (1); other (1).

### Remedial Actions

- In 2022, a section of three-phase line was reconfigured.
- In 2022, full circuit trimming was complete.
- In 2022, additional fusing was installed.
- In 2022, an additional single-phase recloser was installed.
- In 2023, an additional single-phase recloser will be installed.
- In 2023, additional fusing will be installed.
- In 2023, coordination of protective devices will be evaluated.

- In 2023, two additional single-phase reclosers will be evaluated.
- In 2025, a new substation will be constructed.

## **20 Circuit 26401 -- INDIAN ORCHARD 64-01**

### Performance Analysis

The INDIAN ORCHARD 64-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On March 11, 2023, during a period of ice/sleet/snow, an improper operation occurred causing a recloser to trip to lockout. This outage affected 1,468 customers for up to 312 minutes resulting in 185,184 CMI.

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.

In total, the INDIAN ORCHARD 64-01 circuit had 90 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (46); animal contacts (21); equipment failure (17); nothing found (4); Improper Design (1); other (1).

### Remedial Actions

- In 2023, additional animal guarding will be installed.
- In 2023, a section of difficult-to-access conductor will be evaluated for relocation.
- In 2025, full circuit trimming will be performed.
- In 2025, four single-phase reclosers will be installed.

## **21 Circuit 46001 -- BERWICK 60-01**

### Performance Analysis

The BERWICK 60-01 circuit experienced five outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 9, 2022, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 575 customers for up to 453 minutes resulting in 229,840 CMI.

On September 17, 2022, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 575 customers for up to 137 minutes resulting in 78,775 CMI.

On October 4, 2022, during a period of heavy rain, a vehicle contact caused a recloser to trip to lockout. This outage affected 933 customers for up to 33 minutes resulting in 30,789 CMI.

On June 14, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 578 customers for up to 116 minutes resulting in 4,128 CMI.

On June 27, 2023, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 293 customers for up to 437 minutes resulting in 116,977 CMI.

In total, the BERWICK 60-01 circuit had 42 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (23); equipment failure (11); animal contacts (4); vehicles (2); nothing found (1); other (1).

### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2022, additional fusing was installed.
- In 2022, several poles and cross-arms were replaced.
- In 2022, an additional single-phase recloser was installed.
- In 2022, a section of difficult-to-access conductor was eliminated, and the downstream customers transferred to an adjacent circuit.
- In 2023, a new three-phase tie will be constructed.
- In 2023, a section of this circuit will be evaluated for reconductoring and relocation.
- In 2023, a new single-phase tie will be evaluated.
- In 2025, a new line and terminal will be constructed for this circuit.

## **22 Circuit 27101 – GREENFIELD 71-01**

### Performance Analysis

The GREENFIELD 71-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 4, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,480 customers for up to 228 minutes resulting in 49,208 CMI.

On January 25, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,100 customers for up to 43 minutes resulting in 12,708 CMI.

In total, the GREENFIELD 71-01 circuit had 81 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (44); animal contacts (17); equipment failure (17); vehicles (2); nothing found (1).

## Remedial Actions

- In 2023, additional animal guarding will be installed.
- In 2023, numerous porcelain cutouts will be installed.
- In 2023, 13 poles will be replaced.
- In 2023, an additional Smart Grid device will be evaluated.
- In 2023, a new tie line will be evaluated.

## **23 Circuit 20403 -- ASHFIELD 04-03**

### Performance Analysis

The ASHFIELD 04-03 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 27, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 533 customers for up to 177 minutes resulting in 48,475 CMI.

In total, the ASHFIELD 04-03 circuit had 92 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (58); animal contacts (10); nothing found (10); equipment failure (9); vehicles (4); other (1).

### Remedial Actions

- In 2022, a single-phase recloser was installed.
- In 2022, approximately seven miles of this circuit received tree trimming.
- In 2023, ten single-phase reclosers were installed.
- In 2023, a single-phase tie will be constructed to the ASHFIELD 01 circuit.
- In 2023, a section of conductor will be evaluated for relocation.
- In 2023, additional fusing will be evaluated.
- In 2024, two sections of difficult-to-access conductor will be relocated.
- In 2024, full circuit trimming will be performed.

## **24 Circuit 13601 -- RICHLAND 36-01**

### Performance Analysis

The RICHLAND 36-01 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 12, 2022, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 222 customers for up to 817 minutes resulting in 177,011 CMI.

On December 24, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 164 customers for up to 970 minutes resulting in 130,734 CMI.

On March 3, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 221 customers for up to 926 minutes resulting in 106,626 CMI.

On March 3, 2023, during a period of strong wind, a tree contacted an overhead fuse causing an interruption. This outage affected 105 customers for up to 958 minutes resulting in 100,590 CMI.

In total, the RICHLAND 36-01 circuit had 49 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (32); equipment failure (5); animal contacts (4); nothing found (4); vehicles (4).

#### Remedial Actions

- In 2022, hazard tree removal was performed.
- In 2022, a pole was replaced.
- In 2022, a single-phase recloser was installed.
- In 2022, an additional fuse was installed.
- In 2023, several poles will be replaced.
- In 2023, additional fusing will be installed.
- In 2023, coordination of protective devices will be evaluated.

### **25 Circuit 29702 -- ANGELS 91-02**

#### Performance Analysis

The ANGELS 91-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 15, 2022, an animal interfered with an overhead switch causing a recloser to trip to lockout. This outage affected 835 customers for up to 85 minutes resulting in 24,288 CMI.

In total, the ANGELS 91-02 circuit had 42 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (32); animal contacts (5); equipment failure (3); vehicles (2).

#### Remedial Actions

- In 2022, two single-phase reclosers were installed.
- In 2023, an additional single-phase recloser was installed.
- In 2023, additional animal guarding will be installed.
- In 2023, several poles will be replaced or relocated.
- In 2023, an additional single-phase recloser will be installed.

## **26 Circuit 46702 -- RENOVO 67-02**

### Performance Analysis

The RENOVO 67-02 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 13, 2022, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 846 customers for up to 49 minutes resulting in 41,454 CMI.

On March 6, 2023, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 49 customers for up to 2,240 minutes resulting in 104,799 CMI.

In total, the RENOVO 67-02 circuit had 52 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (46); animal contacts (2); equipment failure (2); nothing found (2).

### Remedial Actions

- In 2022, an additional sectionalizing device was installed.
- In 2022, an additional single-phase recloser was installed.
- In 2023, additional single-phase reclosers will be evaluated for this circuit.
- In 2023, protective tree cable will be evaluated for this circuit.
- In 2024, full circuit trimming will be performed.

## **27 Circuit 21203 -- EAST CARBONDALE 12-03**

### Performance Analysis

The EAST CARBONDALE 12-03 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 14, 2022, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 882 customers for up to 201 minutes resulting in 78,914 CMI.

In total, the EAST CARBONDALE 12-03 circuit had 34 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (16); equipment failure (11); nothing found (5); animal contacts (2).

### Remedial Actions

- In 2023, additional animal guarding will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2023, additional single-phase reclosers will be installed.

- In 2023, a portion of this line will be transferred to an adjacent circuit.
- In 2023, an existing recloser will be replaced.
- In 2023, a section of this line will be evaluated for reconductoring and an additional single-phase recloser.
- In 2024, a section of line will be reconducted.
- In 2024, a section of this circuit will be relocated.
- In 2026, full circuit trimming will be performed.

## **28 Circuit 22406 -- MORGAN 24-06**

### Performance Analysis

The MORGAN 24-06 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On December 16, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 148 customers for up to 955 minutes resulting in 141,322 CMI.

On December 16, 2022, during a period of heavy rain, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 994 customers for up to 2,086 minutes resulting in 50,459 CMI.

In total, the MORGAN 24-06 circuit had 39 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (24); animal contacts (10); equipment failure (3); contact or dig in (1); other (1).

### Remedial Actions

- In 2022, 127 hazard trees were removed.
- In 2022, additional animal guarding was installed.
- In 2023, additional fusing was installed.
- In 2023 a section of underground cable was installed.
- In 2023, numerous porcelain cutouts were replaced.
- In 2023, an additional single-phase recloser will be installed.
- In 2024, a new Smart Grid device will be installed.

## **29 Circuit 64801 -- MOUNT NEBO 48-01**

### Performance Analysis

The MOUNT NEBO 48-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 2, 2022, during a period of heavy rain, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,511 customers for up to 448 minutes resulting in 124,942 CMI.

On July 31, 2022, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,512 customers for up to 125 minutes resulting in 39,273 CMI.

In total, the MOUNT NEBO 48-01 circuit had 57 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (30); animal contacts (10); equipment failure (9); vehicles (5); nothing found (2); contact or dig in (1).

#### Remedial Actions

- In 2022, four single-phase reclosers were installed.
- In 2022, a section of three-phase conductor was relocated.
- In 2022, additional animal guarding was installed.
- In 2023, a section of three-phase conductor was relocated.
- In 2024, three fuses will be installed.
- In 2025, a section of three-phase conductor will be relocated.
- In 2025, a single-phase tap will be re-sourced.
- In 2025, full circuit trimming will be performed.

### **30 Circuit 40901 -- JERSEY SHORE 09-01**

#### Performance Analysis

The JERSEY SHORE 09-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

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.

In total, the JERSEY SHORE 09-01 circuit had 52 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (37); animal contacts (6); equipment failure (6); nothing found (2); vehicles (1).

#### Remedial Actions

- In 2023, an additional Smart Grid device will be evaluated.
- In 2023, tree guarding cable will be evaluated.
- In 2023, four porcelain cutouts will be replaced.
- In 2023, additional animal guarding will be evaluated.

## **31 Circuit 53501 -- ELIZABETHVILLE 35-01**

### Performance Analysis

The ELIZABETHVILLE 35-01 circuit experienced six outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 14, 2022, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 1,203 customers for up to 14 minutes resulting in 16,842 CMI.

On August 28, 2022, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 2,171 customers for up to 14 minutes resulting in 28,518 CMI.

On October 3, 2022, during a period of heavy rain, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 575 customers for up to 164 minutes resulting in 93,937 CMI.

On December 22, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 563 customers for up to 129 minutes resulting in 72,627 CMI.

On December 22, 2022, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 563 customers for up to 241 minutes resulting in 135,683 CMI.

On May 31, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 805 customers for up to 58 minutes resulting in 46,690 CMI.

In total, the ELIZABETHVILLE 35-01 circuit had 62 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (36); equipment failure (12); animal contacts (7); vehicles (6); nothing found (1).

### Remedial Actions

- In 2022, eight single-phase reclosers were installed.
- In 2023, a single-phase recloser was installed.
- In 2023, fusing was installed at two locations.
- In 2023, additional three-phase sectionalizing devices will be evaluated.
- In 2023, additional single-phase fusing will be evaluated.
- In 2023, circuit coordination and protection will be reviewed.
- In 2024, an additional fuse will be installed.
- In 2025, full circuit trimming will occur.

### **32 Circuit 23902 -- EFFORT MOUNTAIN 39-02**

#### Performance Analysis

The EFFORT MOUNTAIN 39-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On December 17, 2022, a vehicle contact caused a recloser to trip to lockout. This outage affected 779 customers for up to 637 minutes resulting in 214,246 CMI.

In total, the EFFORT MOUNTAIN 39-02 circuit had 39 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (22); animal contacts (11); equipment failure (3); vehicles (2); other (1).

#### Remedial Actions

- In 2022, hazard tree removal was performed.
- In 2022, several poles were replaced.
- In 2022, a section of conductor was extended.
- In 2022, a three-phase capacitor bank was replaced.
- In 2023, several poles were replaced with more to be performed.
- In 2023, a section of multi-phase conductor was extended.
- In 2023, a section of single-phase conductor was relocated.
- In 2023, additional animal guarding was installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2023, a single-phase recloser will be installed.

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

#### Performance Analysis

The BERWICK 60-04 circuit experienced four outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 10, 2022, a tree contacted an overhead conductor causing an outage. This outage affected 793 customers for up to 13 minutes resulting in 9,833 CMI.

On September 7, 2022, during a period of heavy rain, a tree contacted an overhead conductor. This outage affected 793 customers for up to 25 minutes resulting in 19,825 CMI.

On December 6, 2022, during a period of heavy rain, an equipment failure occurred on an overhead conductor. This outage affected 795 customers for up to 13 minutes resulting in 10,335 CMI.

On February 10, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 796 customers for up to 59 minutes resulting in 16,234 CMI.

In total, the BERWICK 60-04 circuit had 56 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (33); equipment failure (9); animal contacts (8); nothing found (3); vehicles (2); other (1).

#### Remedial Actions

- In 2022, additional fusing was installed.
- In 2022, additional single-phase reclosers were installed.
- In 2023, additional fusing will be installed.
- In 2023, an additional single-phase Smart Grid device was installed.
- In 2023, the protection/coordination settings on this circuit will be reviewed and optimized.
- In 2024, full circuit trimming will be performed.
- In 2024, two single-phase reclosers will be installed.

### **34 Circuit 67801 -- WEST LANCASTER 78-01**

#### Performance Analysis

The WEST LANCASTER 78-01 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 1, 2022, 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 271 minutes resulting in 481,975 CMI.

In total, the WEST LANCASTER 78-01 circuit had 26 outages between July 2022 and June 2023, with the causes breaking down as follows: equipment failure (11); tree related (9); animal contacts (4); nothing found (1); vehicles (1).

#### Remedial Actions

- In 2022, a new three-phase tie was constructed.
- In 2022, a section of single-phase was recondored.
- In 2022, full circuit trimming was performed.
- In 2022, two additional single-phase reclosers were installed.
- In 2022, two sections of single-phase were relocated.
- In 2022, two sections of single-phase were re-sourced.
- In 2023, three single-phase reclosers will be installed.
- In 2023, additional animal guarding will be installed.
- In 2023, several spans of rear lot single-phase to be evaluated for recondoring.
- In 2024, additional fusing in rear lot sections of single-phase will be installed.
- In 2024, ten additional sectionalizing devices will be installed.
- In 2024, several sections of single-phase will be storm hardened.
- In 2025, a new three-phase sectionalizing device will be installed.

### **35 Circuit 21601 -- EYNON 16-01**

#### Performance Analysis

The EYNON 16-01 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On March 4, 2023, during a period of strong wind, an issue occurred with a pole or pole arm causing an interruption. This outage affected 328 customers for up to 555 minutes resulting in 148,839 CMI.

In total, the EYNON 16-01 circuit had 35 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (14); equipment failure (10); animal contacts (7); nothing found (2); other (1); vehicles (1).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2023, additional animal guarding will be installed.
- In 2023, additional fusing will be installed.
- In 2023, numerous porcelain cutouts will be replaced.
- In 2023, an additional Smart Grid device will be evaluated.
- In 2024, a section of difficult-to-access conductor will be relocated.

### **36 Circuit 46602 -- LARRYS CREEK 66-02**

#### Performance Analysis

The LARRYS CREEK 66-02 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 22, 2022, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 839 customers for up to 186 minutes resulting in 61,216 CMI.

On September 21, 2022, an equipment failure occurred on an overhead splice causing a recloser to trip to lockout. This outage affected 836 customers for up to 43 minutes resulting in 35,948 CMI.

On November 18, 2022, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 659 customers for up to 29 minutes resulting in 18,629 CMI.

In total, the LARRYS CREEK 66-02 circuit had 72 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (43); equipment failure (17); nothing found (6); animal contacts (3); other (2); vehicles (1).

## Remedial Actions

- In 2022, two additional single-phase reclosers were installed.
- In 2023, additional animal guarding will be installed.
- In 2023, an additional single-phase recloser will be installed.
- In 2023, additional fusing will be installed.
- In 2023, an existing recloser will be upgraded to a Smart Grid device.
- In 2024, several porcelain cutouts will be replaced.
- In 2024, full circuit trimming will be performed.

### **37 Circuit 15604 -- NO STROUDSBURG 56-04**

#### Performance Analysis

The NO STROUDSBURG 56-04 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 22, 2022, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 553 customers for up to 118 minutes resulting in 4,954 CMI.

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.

In total, the NO STROUDSBURG 56-04 circuit had 43 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (26); equipment failure (9); animal contacts (6); nothing found (2).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2023, four single-phase reclosers were installed with another to be performed.
- In 2023, several poles and cross-arms were replaced.
- In 2023, a section of single-phase conductor was relocated.
- In 2023, additional animal guarding will be installed.
- In 2025, a single-phase tie will be installed.

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

#### Performance Analysis

The BINGEN 61-01 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On January 5, 2023, a tree contacted an overhead conductor causing an interruption. This outage affected 428 customers for up to 482 minutes resulting in 206,107 CMI.

In total, the BINGEN 61-01 circuit had 63 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (47); animal contacts (6); equipment failure (6); nothing found (2); vehicles (2).

#### Remedial Actions

- In 2022, a single-phase recloser was installed.
- In 2022, additional animal guarding was installed.
- In 2023, full circuit trimming was performed.
- In 2023, additional single-phase reclosers will be evaluated.
- In 2023, additional animal guarding will be installed.
- In 2023, additional fusing will be evaluated.
- In 2024, four additional single-phase reclosers will be installed.
- In 2024, a new Smart Grid device will be installed.

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

#### Performance Analysis

The WOOLRICH 56-02 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 10, 2022, an equipment failure occurred on an overhead switch causing an interruption. This outage affected 530 customers for up to 82 minutes resulting in 43,454 CMI.

On February 10, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 729 customers for up to 124 minutes resulting in 28,708 CMI.

On March 8, 2023, during a period of ice/sleet/snow, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 1,426 customers for up to 1,099 minutes resulting in 125,785 CMI.

In total, the WOOLRICH 56-02 circuit had 63 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (38); equipment failure (13); animal contacts (8); nothing found (4).

#### Remedial Actions

- In 2023, additional animal guarding was installed.
- In 2023, two additional single-phase reclosers will be installed.
- In 2023, a section of difficult-to-access three-phase conductor will be evaluated for undergrounding or tree cable.
- In 2023, a section of three-phase conductor will be evaluated for relocation.
- In 2023, full circuit trimming will be performed.
- In 2024, an existing recloser will be upgraded to a Smart Grid device.

## **40 Circuit 26601 -- BROOKSIDE 66-01**

### Performance Analysis

The BROOKSIDE 66-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 24, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 183 customers for up to 685 minutes resulting in 103,166 CMI.

On August 7, 2022, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 564 customers for up to 15 minutes resulting in 8,460 CMI.

In total, the BROOKSIDE 66-01 circuit had 42 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (23); equipment failure (8); animal contacts (7); nothing found (2); vehicles (2).

### Remedial Actions

- In 2022, a section of difficult-to-access conductor was relocated.
- In 2022, additional animal guarding was installed.
- In 2022, additional fusing was installed.
- In 2023, several cutouts will be installed.
- In 2023, additional fusing will be installed.
- In 2023, an additional tie and three additional Smart Grid devices will be evaluated.
- In 2024, a section of difficult-to-access conductor will be relocated.

## **41 Circuit 46203 -- DANVILLE 62-03**

### Performance Analysis

The DANVILLE 62-03 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 18, 2022, during a period of heavy rain, an equipment failure occurred causing a recloser to trip to lockout. This outage affected 1,033 customers for up to 236 minutes resulting in 87,419 CMI.

On November 8, 2022, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 659 customers for up to 9 minutes resulting in 5,779 CMI.

On February 1, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 659 customers for up to 127 minutes resulting in 14,804 CMI.

In total, the DANVILLE 62-03 circuit had 42 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (21); equipment failure (11); animal contacts (6); nothing found (3); other (1).

#### Remedial Actions

- In 2023, additional fusing was installed with more to be performed.
- In 2023, an additional Smart Grid device was installed.
- In 2023, the protection/coordination settings on this circuit will be optimized.
- In 2023, two cutouts will be replaced.
- In 2023, full circuit trimming will be performed.

### **42 Circuit 11003 -- EAST GREENVILLE 10-03**

#### Performance Analysis

The EAST GREENVILLE 10-03 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 14, 2022, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 721 customers for up to 403 minutes resulting in 114,511 CMI.

In total, the EAST GREENVILLE 10-03 circuit had 18 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (16); animal contacts (1); equipment failure (1).

#### Remedial Actions

- In 2022, the transmission line that feeds East Greenville received tree trimming.
- In 2022, a new Smart Grid device was installed.
- In 2023, additional fusing will be installed.
- In 2024, an additional single-phase recloser will be installed.
- In 2024, the transmission line that feeds East Greenville substation will be rebuilt.
- In 2025, full circuit trimming will be performed.

### **43 Circuit 16802 -- WAGNERS 68-02**

#### Performance Analysis

The WAGNERS 68-02 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On February 24, 2023, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 300 customers for up to 467 minutes resulting in 139,932 CMI.

On March 14, 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 300 customers for up to 791 minutes resulting in 137,885 CMI.

In total, the WAGNERS 68-02 circuit had 40 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (29); equipment failure (6); animal contacts (2); vehicles (2); nothing found (1).

#### Remedial Actions

- In 2022, full circuit trimming was performed.
- In 2023, an existing recloser was replaced with another replacement planned.
- In 2023, several poles were replaced or reinforced.
- In 2023, additional animal guarding will be installed.

#### **44 Circuit 17002 -- RIDGE ROAD 70-02**

#### Performance Analysis

The RIDGE ROAD 70-02 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 1, 2022, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,072 customers for up to 21 minutes resulting in 10,542 CMI.

On March 14, 2023, during a period of strong wind, a tree contacted an overhead splice causing a circuit breaker to trip to lockout. This outage affected 1,078 customers for up to 269 minutes resulting in 37,939 CMI.

In total, the RIDGE ROAD 70-02 circuit had 40 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (26); equipment failure (7); animal contacts (3); nothing found (2); other (1); vehicles (1).

#### Remedial Actions

- In 2022, a Proactive Circuit Analysis was performed with several minor remediations implemented.
- In 2023, additional animal guarding will be installed.
- In 2023, additional fusing will be evaluated.
- In 2023, the protection settings on this circuit will be re-evaluated.
- In 2023, a pole will be replaced.
- In 2023, additional single-phase reclosers will be evaluated.
- In 2024, a three-phase recloser will be upgraded.
- In 2025, full circuit trimming will be performed.

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

### Performance Analysis

The ROHRSBURG 63-02 circuit experienced no outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

In total, the ROHRSBURG 63-02 circuit had 54 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (36); animal contacts (11); nothing found (5); equipment failure (2).

### Remedial Actions

- In 2022, additional fusing was installed.
- In 2022, a section of difficult-to-access conductor was relocated.
- In 2023, a section of difficult-to-access conductor will be evaluated for relocation.
- In 2023, additional fusing will be installed.
- In 2025, full circuit trimming will be performed.

## **46 Circuit 22703 -- MINOOKA 27-03**

### Performance Analysis

The MINOOKA 27-03 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 2, 2022, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,667 customers for up to 503 minutes resulting in 338,886 CMI.

In total, the MINOOKA 27-03 circuit had 18 outages between July 2022 and June 2023, with the causes breaking down as follows: equipment failure (8); tree related (5); animal contacts (3); vehicles (2).

### Remedial Actions

- In 2022, additional animal guarding was installed.
- In 2022, a targeted line patrol was performed with several minor remediations implemented.
- In 2023, additional animal guarding will be installed.
- In 2023, switching improvements will be evaluated.

## **47 Circuit 24101 -- EAST HAZLETON 41-01**

### Performance Analysis

The EAST HAZLETON 41-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On March 3, 2023, during a period of strong wind, an equipment failure occurred on an overhead switch. This outage affected 2,007 customers for up to 317 minutes resulting in 299,816 CMI.

On April 3, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,001 customers for up to 121 minutes resulting in 58,154 CMI.

In total, the EAST HAZLETON 41-01 circuit had 33 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (13); animal contacts (8); equipment failure (8); nothing found (2); other (2).

### Remedial Actions

- In 2022, a Proactive Circuit Review was performed with several minor remediations implemented.
- In 2022, full circuit trimming was performed.
- In 2023, a single-phase recloser was replaced and relocated.
- In 2023, an existing three-phase recloser was replaced.

## **48 Circuit 46206 -- DANVILLE 62-06**

### Performance Analysis

The DANVILLE 62-06 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 20, 2022, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 563 customers for up to 100 minutes resulting in 43,871 CMI.

On March 4, 2023, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,219 customers for up to 135 minutes resulting in 47,731 CMI.

In total, the DANVILLE 62-06 circuit had 26 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (14); equipment failure (6); animal contacts (3); nothing found (2); vehicles (1).

## Remedial Actions

- In 2022, a Proactive Circuit Analysis was performed.
- In 2023, full circuit trimming will be performed.
- In 2023, additional fusing will be installed.
- In 2025, this circuit will be split, reducing the load.

## **49 Circuit 65002 -- NEFFSVILLE 50-02**

### Performance Analysis

The NEFFSVILLE 50-02 circuit experienced five outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 6, 2022, a tree contacted a pole or pole arm causing an interruption. This outage affected 1,024 customers for up to 312 minutes resulting in 25,415 CMI.

On July 28, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 1,025 customers for up to 113 minutes resulting in 76,768 CMI.

On November 24, 2022, a vehicle contact caused a circuit breaker to trip to lockout. This outage affected 541 customers for up to 15 minutes resulting in 8,001 CMI.

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.

In total, the NEFFSVILLE 50-02 circuit had 18 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (12); equipment failure (4); animal contacts (1); vehicles (1).

### Remedial Actions

- In 2022, additional fusing was installed.
- In 2022, the circuit breaker was updated with new relays.
- In 2023, full circuit trimming was performed.
- In 2023, the protection settings on this circuit were optimized.
- In 2023, two fuses will be installed.

## **50 Circuit 26001 -- WEST DAMASCUS 60-01**

### Performance Analysis

The WEST DAMASCUS 60-01 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 24, 2022, 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 1,244 minutes resulting in 117,518 CMI.

In total, the WEST DAMASCUS 60-01 circuit had 75 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (38); equipment failure (19); animal contacts (11); nothing found (5); other (1); vehicles (1).

### Remedial Actions

- In 2023, full circuit trimming will be performed.
- In 2023, several poles were replaced.
- In 2023, hazard tree removal will be removed.
- In 2023, additional animal guarding will be installed.

## **51 Circuit 64201 -- KINZER 42-01**

### Performance Analysis

The KINZER 42-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 1, 2022, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 344 customers for up to 529 minutes resulting in 124,528 CMI.

On June 16, 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 825 customers for up to 626 minutes resulting in 233,996 CMI.

On June 20, 2023, a vehicle contact caused a recloser to trip to lockout. This outage affected 825 customers for up to 100 minutes resulting in 82,194 CMI.

In total, the KINZER 42-01 circuit had 15 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (7); equipment failure (4); vehicles (3); animal contacts (1).

## Remedial Actions

- In 2022, an existing tie switch was replaced with a Smart Grid device.
- In 2022, additional animal guarding was installed.
- In 2022, one fuse was installed.
- In 2024, two fuses will be installed.
- In 2024, full circuit trimming will be performed.

## **52 Circuit 65702 -- ROSEVILLE 57-02**

### Performance Analysis

The ROSEVILLE 57-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On October 1, 2022, a vehicle contacted a pole causing a circuit breaker to trip to lockout. This outage affected 1,102 customers for up to 550 minutes resulting in 382,529 CMI.

In total, the ROSEVILLE 57-02 circuit had 25 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (10); animal contacts (6); equipment failure (4); nothing found (2); vehicles (2); contact or dig in (1).

### Remedial Actions

- In 2022, a three-phase sectionalizing device was installed.
- In 2023, a section of single-phase was resourced.
- In 2023, animal guarding in rear-lot areas will be installed.
- In 2023, a single-phase recloser will be installed.
- In 2024, three fuses will be installed.
- In 2024, additional fusing for high customer count single-phase taps will be evaluated.
- In 2024, a three-phase recloser will be installed.
- In 2024, full circuit trimming will be performed.

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

### Performance Analysis

The BELTZVILLE 69/12 KV 94-02 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 18, 2022, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 309 customers for up to 330 minutes resulting in 101,837 CMI.

On January 3, 2023, an unidentified issue occurred causing a recloser to trip to lockout. This outage affected 666 customers for up to 21 minutes resulting in 13,986 CMI.

On May 13, 2023, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 911 customers for up to 21 minutes resulting in 18,520 CMI.

In total, the BELTZVILLE 69/12 KV 94-02 circuit had 51 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (25); animal contacts (13); equipment failure (8); nothing found (4); vehicles (1).

#### Remedial Actions

- In 2023, three single-phase reclosers were installed.
- In 2023, full circuit trimming will be performed.
- In 2023, an existing recloser will be replaced with a Smart grid device.
- In 2023, transferring a section of this feeder to another circuit will be evaluated.
- In 2024, a section of difficult-to-access conductor will be relocated.
- In 2024, an existing recloser will be upgraded to a Smart Grid device.

### **54 Circuit 21901 -- HUMBOLDT 19-01**

#### Performance Analysis

The HUMBOLDT 19-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 5, 2022, an equipment failure occurred on an overhead transformer causing a recloser to trip to lockout. This outage affected 630 customers for up to 88 minutes resulting in 14,670 CMI.

On March 31, 2023, an equipment failure occurred on an overhead transformer causing an interruption. This outage affected 592 customers for up to 413 minutes resulting in 77,403 CMI.

On April 30, 2023, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 1,105 customers for up to 756 minutes resulting in 59,214 CMI.

In total, the HUMBOLDT 19-01 circuit had 47 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (22); equipment failure (12); animal contacts (7); nothing found (2); vehicles (2); contact or dig in (1); other (1).

#### Remedial Actions

- In 2023, eleven single-phase reclosers will be installed.
- In 2023, forty fuses will be installed.
- In 2023, a large section of single-phase will be evaluated for additional sectionalizing.

## **55 Circuit 52401 -- GREEN PARK 24-01**

### Performance Analysis

The GREEN PARK 24-01 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On July 23, 2022, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 565 customers for up to 116 minutes resulting in 65,364 CMI.

On March 27, 2023, an unidentified issue occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,318 customers for up to 12 minutes resulting in 14,919 CMI.

On April 16, 2023, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 562 customers for up to 84 minutes resulting in 47,118 CMI.

In total, the GREEN PARK 24-01 circuit had 65 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (40); equipment failure (11); animal contacts (7); nothing found (3); vehicles (2); contact or dig in (1); other (1).

### Remedial Actions

- In 2022, five fuses were installed.
- In 2022, a section of single-phase was relocated.
- In 2022, additional sectionalizing devices were installed.
- In 2023, full circuit trimming will be performed.
- In 2023, an additional sectionalizing device will be installed.
- In 2023, a new battery storage installation will be installed.
- In 2025, a section of single-phase will be relocated.
- In 2025, a section of single-phase will be relocated underground.
- In 2025, an additional sectionalizing device will be installed.

## **56 Circuit 14306 -- SUMNER 43-06**

### Performance Analysis

The SUMNER 43-06 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 7, 2022, an animal interfered with a substation component causing a circuit breaker to trip to lockout. This outage affected 2,600 customers for up to 23 minutes resulting in 58,734 CMI.

On March 24, 2023, a vehicle contact caused an interruption. This outage affected 2,098 customers for up to 649 minutes resulting in 353,478 CMI.

In total, the SUMNER 43-06 circuit had 11 outages between July 2022 and June 2023, with the causes breaking down as follows: other (4); tree related (3); equipment failure (2); animal contacts (1); vehicles (1).

#### Remedial Actions

- In 2023, full circuit trimming will be performed.
- In 2023, additional fusing will be installed.
- In 2023, new tie devices will be evaluated.
- In 2023, substation animal guarding will be evaluated.
- In 2024, protective devices on the transmission line will be upgraded to telemetric devices.
- In 2025, all transformer protectors in the substation will be replaced.

### **57 Circuit 45001 -- LIMESTONE 50-01**

#### Performance Analysis

The LIMESTONE 50-01 circuit experienced no outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

In total, the LIMESTONE 50-01 circuit had 58 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (35); equipment failure (11); animal contacts (8); vehicles (3); nothing found (1).

#### Remedial Actions

- In 2022, additional fusing was installed.
- In 2023, an additional single-phase recloser was installed.
- In 2023, two sections of difficult-to-access conductor will be evaluated for relocation.
- In 2023, an additional Smart Grid device will be evaluated for this circuit.

### **58 Circuit 63201 -- MORGANTOWN 32-01**

#### Performance Analysis

The MORGANTOWN 32-01 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On December 20, 2022, a vehicle contacted a pole causing a recloser to trip to lockout. This outage affected 746 customers for up to 111 minutes resulting in 65,521 CMI.

On March 30, 2023, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 780 customers for up to 301 minutes resulting in 148,043 CMI.

In total, the MORGANTOWN 32-01 circuit had 35 outages between July 2022 and June 2023, with the causes breaking down as follows: equipment failure (21); tree related (7); animal contacts (3); vehicles (3); nothing found (1).

#### Remedial Actions

- In 2022, additional fusing was installed.
- In 2023, a section of single-phase was reconductored.
- In 2023, a section of three-phase conductor will be relocated.
- In 2023, additional fusing will be evaluated for six locations.
- In 2026, full circuit trimming will be performed.

### **59 Circuit 17802 -- GILBERT 78-02**

#### Performance Analysis

The GILBERT 78-02 circuit experienced one outage of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On April 29, 2023, during a period of heavy rain, a tree contacted a pole or pole arm causing an interruption. This outage affected 240 customers for up to 774 minutes resulting in 109,384 CMI.

In total, the GILBERT 78-02 circuit had 66 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (41); animal contacts (11); equipment failure (9); vehicles (4); nothing found (1).

#### Remedial Actions

- In 2022, a single-phase recloser was installed.
- In 2022, full circuit trimming was performed.
- In 2022, hot spot trimming was performed.
- In 2022, several poles were replaced or relocated.
- In 2023, additional animal guarding will be installed.
- In 2023, two sections of difficult-to-access single-phase will be relocated.
- In 2023, several poles will be replaced.
- In 2023, three single-phase reclosers will be installed.
- In 2024, two existing reclosers will be replaced with Smart Grid devices.

## **60 Circuit 56803 -- BENVENUE 68-03**

### Performance Analysis

The BENVENUE 68-03 circuit experienced three outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On August 31, 2022, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 772 customers for up to 76 minutes resulting in 58,548 CMI.

On January 25, 2023, during a period of ice/sleet/snow, an equipment failure occurred on a pole or pole arm causing a load break fuse to operate. This outage affected 662 customers for up to 134 minutes resulting in 6,208 CMI.

On March 27, 2023, an unidentified issue occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,284 customers for up to 19 minutes resulting in 23,522 CMI.

In total, the BENVENUE 68-03 circuit had 35 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (14); equipment failure (13); animal contacts (4); other (2); nothing found (1); vehicles (1).

### Remedial Actions

- In 2022, five additional single-phase sectionalizing devices were installed.
- In 2022, settings on a three-phase device were optimized for coordination.
- In 2023, a section of single-phase conductor will be evaluated for relocation.
- In 2023, the coordination settings on this circuit will be reviewed.
- In 2025, a three-phase Smart Grid device will be installed.

## **61 Circuit 14403 -- SO SLATINGTON 44-03**

### Performance Analysis

The SO SLATINGTON 44-03 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On November 20, 2022, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 699 customers for up to 296 minutes resulting in 127,969 CMI.

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.

In total, the SO SLATINGTON 44-03 circuit had 82 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (47); equipment failure (16); animal contacts (10); vehicles (5); nothing found (2); other (2).

#### Remedial Actions

- In 2022, three fuses were installed.
- In 2022, a single-phase section of line was reconfigured.
- In 2022, a deteriorated crossarm and insulator were replaced.
- In 2022, predictive fault indicators were installed.
- In 2022, full circuit trimming was performed.
- In 2023, multiple poles were replaced.
- In 2023, a crossarm and insulator were replaced.
- In 2023, a single-phase recloser will be installed.
- In 2023, an additional single-phase recloser will be evaluated.

### **62 Circuit 13606 -- RICHLAND 36-06**

#### Performance Analysis

The RICHLAND 36-06 circuit experienced no outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

In total, the RICHLAND 36-06 circuit had 30 outages between July 2022 and June 2023, with the causes breaking down as follows: tree related (23); equipment failure (3); vehicles (2); animal contacts (1); nothing found (1).

#### Remedial Actions

- In 2022, additional single-phase reclosers were installed.
- In 2023, additional animal guarding will be installed.
- In 2023, additional fusing will be installed.
- In 2023, coordination of protective devices will be reviewed.
- In 2023, additional single-phase reclosers will be evaluated.
- In 2024, full circuit trimming will be performed.

### **63 Circuit 42802 -- SELINGSGROVE 28-02**

#### Performance Analysis

The SELINGSGROVE 28-02 circuit experienced two outages of over 100,000 CMI or 500 CI between July 2022 and June 2023.

On September 20, 2022, an animal interfered with an underground component causing a circuit breaker to trip to lockout. This outage affected 1,196 customers for up to 39 minutes resulting in 35,014 CMI.

On June 4, 2023, an equipment failure on a pole or pole arm caused an interruption. This outage affected 461 customers for up to 265 minutes resulting in 121,709 CMI.

In total, the SELINGSGROVE 28-02 circuit had 17 outages between April 2022 and March 2023, with the causes breaking down as follows: equipment failure (7); animal contacts (4); vehicles (3); nothing found (2); other (1).

#### Remedial Actions

- In 2023, an additional Smart Grid device was installed.
- In 2023, relocating and reprogramming a Smart Grid device will be evaluated.
- In 2024, six fuses will be resized to improve protection coordination.
- In 2024, 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
<b>Animals</b>	4,026	17.9%	80,692	6.8%	5,453,701	2.8%
<b>Contact / Dig-In</b>	158	0.7%	10,742	0.9%	967,690	0.5%
<b>Directed by Non-PPL Authority</b>	69	0.3%	9,225	0.8%	488,291	0.3%
<b>Equipment Failures</b>	4,913	21.9%	256,426	21.7%	27,976,730	14.6%
<b>Improper Design</b>	2	0.0%	1,633	0.1%	189,644	0.1%
<b>Improper Installation</b>	5	0.0%	556	0.0%	47,525	0.0%
<b>Improper Operation</b>	-	0.0%	-	0.0%	-	0.0%
<b>Nothing Found</b>	899	4.0%	53,410	4.5%	6,167,237	3.2%
<b>Other Controllable</b>	57	0.3%	11,456	1.0%	613,579	0.3%
<b>Other Non-Control</b>	211	0.9%	31,608	2.7%	1,808,542	0.9%
<b>Other Public</b>	31	0.1%	3,641	0.3%	171,048	0.1%
<b>Tree Related</b>	11,317	50.3%	617,182	52.3%	135,028,768	70.4%
<b>Unknown</b>	-	0.0%	-	0.0%	-	0.0%
<b>Vehicles</b>	789	3.5%	104,378	8.8%	13,006,948	6.8%
<b>Total</b>	<b>22,477</b>	<b>100.0%</b>	<b>1,180,949</b>	<b>100.0%</b>	<b>191,919,704</b>	<b>100.0%</b>

Analysis of causes contributing to the majority of service interruptions:

**Weather Conditions:** PPL Electric records weather conditions, such as wind or lightning, as contributing factors to service interruptions, but does not code them as direct interruption causes. Therefore, some fluctuations in cause categories, especially tree- and equipment-related causes, are attributable to weather variations. For the current reporting period, weather was considered a significant contributing cause in 49% of cases, 56% of customer interruptions, and 75% 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 78% of the cases of trouble, 81% of the customer interruptions and 89% of the customer minutes attributed to tree related outages were weather-related.

**Animals:** Animals accounted for approximately 18% 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 accounted for a large percentage of customer interruptions and customer minutes, because main distribution lines generally are located along major thoroughfares with higher traffic densities. In addition, vehicle-related cases often result in extended repair times to replace broken poles. PPL Electric has a program to identify and relocate poles that are subject to multiple vehicle hits.

**Equipment Failure:** Equipment failure is one of the largest single contributors to the number of cases of trouble, customer interruptions and customer minutes. However, approximately 33% of the cases of trouble, 41% of the customer interruptions and 49% 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)	2nd Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
<b>Transmission</b>					
Transmission C-tag poles (# of poles)	88	3	3	4	4
Transmission arm replacements (# of arms)	18	1	1	2	2
Transmission air break switch inspections (# of switches)	2	0	0	2	2
Transmission surge arrester installations (# of sets)	72	0	0	0	0
Transmission structure inspections (# of activities)	14,524	3,121	3,121	6,707	6,707
Transmission tree side trim-Bulk Power (linear feet)	N/A				
Transmission herbicide-Bulk Power (# of acres)	N/A				
Transmission reclearing (# of miles) BES Only	901	162	85	513	374
Transmission reclearing (# of miles) 69 kV	1,651	246	205	371	306
Transmission reclearing (# of miles) 138 kV	65	21	21	21	65
Transmission danger tree removals-Bulk Power (# of trees)	N/A				
<b>Substation</b>					
Substation batteries (# of activities)	457	38	18	63	35
Circuit breakers (# of activities)	223	0	0	0	0
Substation inspections (# of activities)	1,776	501	290	879	641
Transformer maintenance (# of activities)	786	269	59	293	59

Inspection & Maintenance Goals/Objectives	Annual Budget (units)	2nd Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
<b>Distribution</b>					
Distribution C-tag poles replaced (# of poles)	1,800	450	382	900	856
C-truss distribution poles (# of poles)	2,400	400	250	400	250
Capacitor (MVAR added)	N/A				
OCR Replacements (# of)	33	0	0	33	0
Distribution pole inspections (# of poles)	80,000	15,000	16,500	25,000	25,000
Distribution line inspections (miles)	400	0	0	400	0
Group re-lamping (# of lamps)	0	0	0	0	0
Test sections of underground distribution cable	N/A	70	70	118	118
Distribution tree trimming (# of miles)	5,261	1,174	856	2,260	1,875
Distribution herbicide (# of acres)	N/A		31		83
Distribution >18" removals within R/W (# of trees)	N/A		497		1,452
Distribution hazard tree removals outside R/W (# of trees)	N/A				4,718
LTN manhole inspections (# of)	0	0	0	0	0
LTN vault inspections (# of)	70	23	8	23	8
LTN network protector overhauls (# of)	48	16	0	16	0
LTN reverse power trip testing (# of)	33	11	2	11	2

- 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	2nd Quarter			Year-to-date	
	Annual Budget (000s)	Budget (\$000)	Actual (\$000)	Budget (\$000)	Actual (\$000)
Provide Electric Service	4,867	1,154	1,959	2,296	3,904
Vegetation Management	32,144	8,637	6,628	15,984	15,954
Customer Response	55,137	13,864	16,611	26,148	39,144
Reliability Maintenance	16,632	5,161	5,274	12,670	11,959
System Upgrade	2,144	686	1,087	1,199	1,131
Customer Service/Accounts	100,417	19,646	39,278	44,820	82,563
Others	64,476	15,473	13,536	32,433	29,056
<b>Total O&amp;M Expenses</b>	<b>275,818</b>	<b>64,621</b>	<b>84,374</b>	<b>135,550</b>	<b>183,712</b>

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

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

Activity	2nd Quarter			Year-to-date	
	Annual Budget (000s)	Budget (\$000)	Actual (\$000)	Budget (\$000)	Actual (\$000)
New Service/Revenue	81,753	19,327	31,172	39,918	69,561
System Upgrade	255,756	41,854	60,902	95,183	114,984
Reliability & Maintenance	365,545	81,730	110,933	181,470	201,195
Customer Response	44,107	11,885	13,172	21,241	32,795
Other	22,024	5,123	6,162	9,677	11,442
<b>Total</b>	<b>769,185</b>	<b>159,920</b>	<b>222,342</b>	<b>347,490</b>	<b>429,978</b>

***PPL Electric Utilities Corporation***

***Worst Performing Circuit Definition***

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

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

***PPL Electric Utilities Corporation***

***Job Descriptions***

***Transmission and Distribution***

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

## Appendix B

### *Electrical*

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

## Appendix B

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