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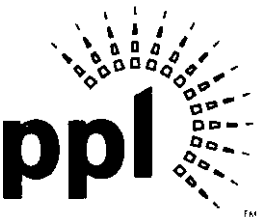


FEDERAL EXPRESS

January 31, 2020

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 December 31, 2019
Docket No. M-2016-2522508

Dear Ms. Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation ("PPL Electric") is an original of PPL Electric's Quarterly Reliability Report for the Period Ended December 31, 2019 ("Quarterly Reliability Report"). The report is being filed pursuant to 52 Pa. Code § 57.195(d).

Also enclosed in a sealed envelope, is a copy of the report containing competitively sensitive and proprietary information. The Company hereby requests that the Commission treat the report and the information contained therein as **PROPRIETARY** and **CONFIDENTIAL** and place the report in a non-public folder.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on January 31, 2020, which is the date it was deposited with an overnight express delivery service as shown on the delivery receipt attached to the mailing envelope.

In addition, please date and timestamp the enclosed extra copy of this letter and return it to me in the envelope provided.

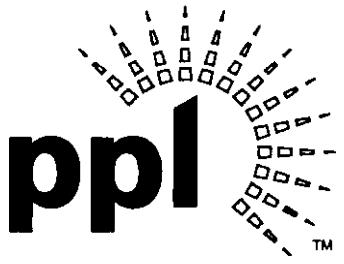
If you have any questions regarding this document, please call me or B. Kathryn Frazier, PPL Electric's Regulatory Affairs Manager at (610) 774-3372.

Very truly yours,

Kimberly A. Klock

Enclosures

cc: Tanya J. McCloskey, Esquire
Mr. Daniel Searfoorce
Mr. John R. Evans



PPL Electric Utilities Corporation

Quarterly Reliability Report

to the

Pennsylvania Public Utility Commission

January 2020

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 fourth quarter of 2019.

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 December 31, 2019.

SAIFI (Benchmark = 0.98; Rolling 12-month Std. = 1.18)	0.85
CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	176
SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	150
MAIFI	5.7
Average Number of Customers Served[1]	1,429,033
Number of Sustained Customer Interruptions (Trouble Cases)	21,497
Number of Customers Affected[2]	1,213,359
Customer Minutes of Interruptions (CMI)	213,915,132
Number of Customer Momentary Interruptions	8,083,956

During the fourth quarter, there were no (0) PUC major events, four (4) PUC reportable events, and no (0) other storms that required the opening of one or more area emergency centers to manage restoration efforts.

[1] 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.

[2] 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.

PPL Electric's 4th quarter reliability performance was within the PUC standard with the exception of CAIDI, which ended 1% above the PUC standard metric of 174. SAIFI remained below benchmark all four quarters.

2019 EDC Performance Scorecard											
Mertrics achieved GREEN		Benchmark Metrics not achieve YELLOW					Standard Metrics not achieved RED				
			Rolling 12-Month								
			Benchmark Score					Standard Score			
EDCs	Metrics	BM	Q1	Q2	Q3	Q4	STD	Q1	Q2	Q3	Q4
PPL	CAIDI	145	176	152	155	176	174	176	152	155	176
	SAIDI	142	160	131	122	150	205	160	131	122	150
	SAIFI	0.98	0.91	0.86	0.79	0.85	1.18	0.91	0.86	0.79	0.85

Because weather has a significant impact to 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. PPL Electric is consistently a first quartile SAIFI performer, a first quartile SAIDI performer, and a second quartile CAIDI performer. The table below lists PPL Electric's IEEE performance metrics compared to the performance quartiles for large utilities nationally, as issued by the IEEE annual reliability survey[3]. PPL Electric's continued focus on improving system reliability and response is directly related to the strong SAIFI performance.

	IEEE CAIDI	IEEE SAIFI	IEEE SAIDI
2017	116	0.60	70.0
2018	112	0.74	82.5
2019	113	0.66	74.3
IEEE First Quartile Ceiling	100	0.80	85
IEEE Second Quartile Ceiling	114	1.00	112

[3] http://grouper.ieee.org/groups/td/dist/sd/doc/

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 reliability index 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	MAIFI	Customers	Cases of Trouble	Customer Minutes Interrupted (CMI)
1	45002	1428	384	3.7	15.3	1,949	81	2,782,617
2	46301	2601	700	3.7	7.4	1,055	49	2,743,726
3	43401	2821	725	3.9	14.6	972	41	2,741,579
4	45501	1624	1194	1.4	12.4	1,427	33	2,316,782
5	40201	1383	339	4.1	16.5	1,667	112	2,304,909
6	44301	1046	313	3.3	7.3	2,049	96	2,142,362
7	43402	1969	913	2.2	3.0	1,036	59	2,039,742
8	56501	845	218	3.9	21.1	2,397	57	2,025,629
9	28602	993	359	2.8	2.2	1,924	53	1,910,385
10	26703	875	292	3.0	5.1	1,890	71	1,654,262
11	46001	678	281	2.4	5.5	2,331	63	1,580,958
12	43202	1362	368	3.7	8.9	1,152	68	1,569,387
13	55001	1202	72	16.8	77.5	1,288	93	1,548,343
14	45302	1273	388	3.3	5.7	1,205	54	1,533,740
15	47704	1055	264	4.0	6.3	1,383	64	1,458,875
16	53601	1306	416	3.1	6.4	1,103	47	1,440,636
17	43201	1467	505	2.9	10.5	956	46	1,402,723
18	18502	758	307	2.5	14.8	1,833	103	1,389,586
19	45402	831	453	1.8	15.4	1,631	87	1,355,702
20	56802	858	145	5.9	17.5	1,521	85	1,304,932
21	42701	896	404	2.2	3.5	1,453	102	1,302,190
22	45602	763	359	2.1	13.5	1,628	49	1,242,775
23	59002	513	175	2.9	9.2	2,231	78	1,144,399
24	46206	624	264	2.4	2.0	1,822	48	1,136,173

WPC Rank	Feeder ID	SAIDI	CAIDI	SAIFI	MAIFI	Customers	Cases of Trouble	Customer Minutes Interrupted (CMI)
25	20103	655	194	3.4	7.2	1,735	12	1,136,125
26	59202	644	209	3.1	22.5	1,704	78	1,098,212
27	46302	995	459	2.2	3.6	1,088	78	1,083,094
28	52402	612	230	2.7	9.0	1,667	81	1,020,095
29	21206	393	251	1.6	12.0	2,476	22	973,417
30	26604	398	185	2.2	13.8	2,432	76	967,251
31	56803	763	477	1.6	3.9	1,255	56	957,685
32	40602	408	135	3.0	5.4	2,303	68	940,188
33	28101	558	163	3.4	32.4	1,670	72	931,916
34	41602	1092	320	3.4	10.2	838	73	915,508
35	23604	427	546	0.8	7.3	2,119	23	903,790
36	53901	684	240	2.9	53.6	1,317	60	900,947
37	29702	1070	418	2.6	10.2	830	52	888,002
38	21705	318	334	1.0	4.5	2,763	34	877,596
39	11804	770	709	1.1	3.8	1,134	28	873,647
40	41701	881	624	1.4	3.0	986	58	868,767
41	24901	380	244	1.6	15.0	2,277	53	864,856
42	26001	597	235	2.5	11.5	1,430	74	854,190
43	26601	644	160	4.0	14.9	1,323	38	851,497
44	18501	589	159	3.7	15.6	1,443	47	850,485
45	40101	384	77	5.0	8.9	2,130	59	816,911
46	46004	389	278	1.4	7.1	2,066	58	802,858
47	45502	1278	519	2.5	18.1	618	32	790,064
48	20403	411	379	1.1	7.2	1,918	67	787,992
49	17902	770	215	3.6	6.2	1,011	42	778,514
50	48302	467	283	1.7	3.9	1,660	45	775,985
51	25501	463	314	1.5	7.2	1,673	51	775,085
52	41401	631	317	2.0	14.8	1,226	43	773,816
53	44502	883	292	3.0	14.3	870	63	768,254
54	47002	382	273	1.4	4.2	1,997	69	762,166
55	40502	389	101	3.9	15.5	1,938	73	753,503
56	52401	588	297	2.0	7.4	1,281	81	753,441
57	24602	501	170	3.0	13.8	1,501	68	751,495
58	57003	493	167	2.9	3.9	1,495	10	737,170
59	41002	608	418	1.5	17.2	1,213	72	736,986
60	21502	200	324	0.6	37.6	3,673	15	734,004
61	45902	550	191	2.9	8.3	1,334	44	733,663
62	45001	403	149	2.7	10.1	1,777	65	715,332
63	54701	638	146	4.4	43.3	1,108	53	707,222

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

01 Circuit 45002 -- LIMESTONE 50-02

Performance Analysis

The LIMESTONE 50-02 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,519 customers for up to 2,706 minutes resulting in 360,644 CMI.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 146 customers for up to 2,830 minutes resulting in 113,275 CMI.

On October 27, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 1,365 customers for up to 560 minutes resulting in 634,142 CMI.

On December 1, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 1,366 customers for up to 817 minutes resulting in 1,001,158 CMI.

In total, the LIMESTONE 50-02 circuit had 83 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (62); equipment failure (11); nothing found (4); animal contacts (3); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2019, a section of difficult-to-access conductor was relocated.
- In 2019, additional fusing was installed.
- In 2019, a new Smart Grid device was installed.
- In 2019 and 2020, ten poles will be replaced.
- In 2019, a Proactive Circuit Analysis was performed. As a result, a single-phase recloser will be installed.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, aerial cable will be installed in a heavily wooded section of this circuit.
- In 2020, a new substation will be evaluated.
- In 2021, a section of difficult-to-access conductor will be relocated.

02 Circuit 46301 -- ROHRSBURG 63-01

Performance Analysis

The ROHRSBURG 63-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 14, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,052 customers for up to 4,937 minutes resulting in 2,242,417 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 110 customers for up to 1,255 minutes resulting in 138,006 CMI.

In total, the ROHRSBURG 63-01 circuit had 49 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (28); equipment failure (13); nothing found (5); animal contacts (2); vehicles (1).

Remedial Actions

- In 2019, multiple porcelain cutouts were replaced.
- In 2019, full circuit trimming was performed.
- In 2019, multiple poles were replaced.
- In 2020, two additional single-phase reclosers will be installed.

03 Circuit 43401 -- BENTON 34-01

Performance Analysis

The BENTON 34-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 972 customers for up to 5,114 minutes resulting in 2,407,429 CMI.

In total, the BENTON 34-01 circuit had 42 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (30); equipment failure (6); animal contacts (2); nothing found (2); vehicles (2).

Remedial Actions

- In 2019, an additional single-phase recloser was installed.
- In 2019, an additional Smart Grid device was installed.
- In 2019, a Proactive Circuit Analysis was performed. Results are currently being evaluated.

- In 2020, additional single-phase fusing will be installed.
- In 2020, full circuit trimming will be performed.

04 Circuit 45501 -- DERRY 55-01

Performance Analysis

The DERRY 55-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,415 customers for up to 3,799 minutes resulting in 2,174,287 CMI.

In total, the DERRY 55-01 circuit had 33 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (24); equipment failure (5); animal contacts (3); nothing found (1).

Remedial Actions

- In 2019, multiple porcelain cutouts will be replaced.
- In 2020, a section of difficult to access conductor will be relocated and reconfigured.
- In 2020, additional single-phase fusing will be installed.
- In 2021, a section of difficult-to-access conductor will be relocated.
- In 2021, a single-phase recloser will be installed.

05 Circuit 40201 -- BEAR GAP 02-01

Performance Analysis

The BEAR GAP 02-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 109 customers for up to 2,499 minutes resulting in 204,668 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 1,337 customers for up to 3,997 minutes resulting in 1,263,476 CMI.

In total, the BEAR GAP 02-01 circuit had 113 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (79); equipment failure (15); animal contacts (13); nothing found (6).

Remedial Actions

- In 2019, additional fusing was installed at eight locations.
- In 2020, two single-phase reclosers will be installed.
- In 2020, full circuit trimming will be performed.
- In 2020, a section of existing conductor will be relocated and reconductored.
- In 2020, several sections of difficult-to-access conductor will be evaluated for relocation.
- In 2020, a section of conductor will be evaluated for undergrounding or aerial cable.

06 Circuit 44301 -- BEAVERTOWN 43-01

Performance Analysis

The BEAVERTOWN 43-01 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,034 customers for up to 407 minutes resulting in 827,838 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 474 customers for up to 2,416 minutes resulting in 468,909 CMI.

On May 3, 2019, a tree contacted an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 2,021 customers for up to 67 minutes resulting in 135,407 CMI.

On May 23, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 470 customers for up to 321 minutes resulting in 143,535 CMI.

In total, the BEAVERTOWN 43-01 circuit had 98 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (61); equipment failure (20); animal contacts (7); nothing found (7); vehicles (2); other (1).

Remedial Actions

- In 2019, a section of difficult-to-access single-phase was relocated.
- In 2019, additional fusing was installed on this circuit.
- In 2019, 40 poles were replaced.
- In 2021, two sections of three-phase conductor will be relocated.
- In 2021, two additional Smart Grid devices will be installed.
- In 2021, full circuit trimming will be performed.

07 Circuit 43402 -- BENTON 34-02

Performance Analysis

The BENTON 34-02 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,041 customers for up to 30 minutes resulting in 1,096,131 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 146 customers for up to 1,080 minutes resulting in 157,680 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 83 customers for up to 3,496 minutes resulting in 163,157 CMI.

In total, the BENTON 34-02 circuit had 59 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (44); equipment failure (8); nothing found (3); animal contacts (2); other (2).

Remedial Actions

- In 2019, multiple porcelain cutouts were replaced.
- In 2020, a section of difficult-to-access single-phase conductor will be relocated.
- In 2020, full circuit trimming will be performed.

08 Circuit 56501 -- ROCKVILLE 65-01

Performance Analysis

The ROCKVILLE 65-01 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,029 customers for up to 301 minutes resulting in 305,766 CMI.

On October 17, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,218 customers for up to 478 minutes resulting in 553,479 CMI.

On November 28, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,917 customers for up to 537 minutes resulting in 762,553 CMI.

In total, the ROCKVILLE 65-01 circuit had 57 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (40); equipment failure (11); animal contacts (4); nothing found (1); other (1).

Remedial Actions

- In 2019, full circuit tree trimming was performed.
- In 2019, voltage support devices were installed to increase tie capability.
- In 2019, an existing recloser was upgraded to a Smart Grid device.
- In 2020, additional animal guarding will be installed at 15 locations.
- In 2020, a section of line will be re-sourced.
- In 2020, an additional Smart Grid device will be installed.
- In 2020, an additional tie line will be installed.
- In 2020, two new Smart Grid devices will be evaluated.
- In 2020, three-phase reconductoring will be evaluated for this circuit.
- In 2020, a new substation will be evaluated.

09 Circuit 28602 -- BLYTHEBURN 86-02

Performance Analysis

The BLYTHEBURN 86-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 769 customers for up to 2,201 minutes resulting in 860,351 CMI.

On September 11, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 349 customers for up to 584 minutes resulting in 162,681 CMI.

In total, the BLYTHEBURN 86-02 circuit had 54 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (36); animal contacts (5); other (5); equipment failure (4); nothing found (3); vehicles (1).

Remedial Actions

- In 2019, full circuit trimming was performed.
- In 2019, an additional single-phase recloser was installed.
- In 2019, a section of difficult-to-access single-phase was relocated.
- In 2019, a Proactive Circuit Analysis was performed. As a result, several minor remediations will be performed.
- In 2020, a substation conversion will be evaluated.
- In 2020, a single-phase tie line will be evaluated.
- In 2020, an additional Smart Grid device will be evaluated.
- In 2020, reconductoring will be evaluated for a three-phase section of this circuit.

- In 2020, undergrounding will be evaluated for a section of heavily wooded conductor.

10 Circuit 26703 -- HEMLOCK FARMS 67-03

Performance Analysis

The HEMLOCK FARMS 67-03 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 823 customers for up to 2,602 minutes resulting in 436,304 CMI.

On February 25, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,796 customers for up to 141 minutes resulting in 253,236 CMI.

On November 1, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,826 customers for up to 993 minutes resulting in 429,786 CMI.

In total, the HEMLOCK FARMS 67-03 circuit had 71 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (42); animal contacts (14); equipment failure (10); nothing found (5).

Remedial Actions

- In 2019, four single-phase reclosers were installed.
- In 2019, a new three-phase recloser was installed.
- In 2019, 27 overhead transformers were replaced.
- In 2019, additional fusing was installed.
- In 2020, 80 porcelain cutouts will be replaced.
- In 2020, full circuit trimming will be performed.
- In 2020, an additional single-phase recloser will be installed.
- In 2021, an additional single-phase recloser will be installed.

11 Circuit 46001 -- BERWICK 60-01

Performance Analysis

The BERWICK 60-01 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 176 customers for up to 3,631 minutes resulting in 354,287 CMI.

On August 15, 2019, during a period of lightning, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,330 customers for up to 273 minutes resulting in 281,135 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 279 customers for up to 2,749 minutes resulting in 182,991 CMI.

In total, the BERWICK 60-01 circuit had 64 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (40); equipment failure (9); nothing found (7); animal contacts (5); vehicles (3).

Remedial Actions

- In 2019, multiple porcelain cutouts were replaced.
- In 2020, a section of single-phase conductor will be evaluated for re-sourcing.
- In 2020, a section of single-phase will be evaluated for undergrounding or aerial cable.
- In 2020, a section of difficult-to-access conductor will be evaluated for relocation.
- In 2022, a section of three-phase conductor will be extended.
- In 2022, a new tie line will be constructed.

12 Circuit 43202 -- MILLVILLE 32-02

Performance Analysis

The MILLVILLE 32-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,149 customers for up to 4,425 minutes resulting in 1,055,792 CMI.

On April 20, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,148 customers for up to 407 minutes resulting in 107,392 CMI.

In total, the MILLVILLE 32-02 circuit had 69 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (47); equipment failure (12); nothing found (5); animal contacts (3); vehicles (2).

Remedial Actions

- In 2019, two single-phase reclosers were installed.
- In 2019, additional fusing was added at multiple locations.
- In 2019, multiple porcelain cutouts were replaced.
- In 2020, a section of difficult-to-access three-phase will be relocated.
- In 2020, additional single-phase reclosers will be installed.

13 Circuit 55001 – Newport 50-01

Performance Analysis

The NEWPORT 50-01 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On February 25, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 211 customers for up to 968 minutes resulting in 142,146 CMI.

On March 3, 2019, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 325 customers for up to 427 minutes resulting in 122,821 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 258 customers for up to 633 minutes resulting in 137,520 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 449 customers for up to 1,118 minutes resulting in 379,081 CMI.

In total, the NEWPORT 50-01 circuit had 93 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (72); equipment failure (11); animal contacts (7); other (2); nothing found (1).

Remedial Actions

- In 2019, a Smart Grid device was installed.
- In 2019, a battery demonstration energy storage system was installed to study reliability benefits and voltage control.
- In 2019, three single-phase reclosers were installed, along with related fusing.
- In 2019, a substation conversion was performed.

- In 2019, protection coordination was evaluated.
- In 2019, additional single-phase sectionalizing was installed.
- In 2019, a drone and infrared inspection was performed. Results are currently being evaluated.
- In 2020, single-phase sectionalizing devices will be installed at two locations.
- In 2020, full circuit tree trimming will be performed.
- In 2020, a section of single-phase will be resourced.
- In 2020, a section of three-phase will be evaluated for relocation.
- In 2020, a Proactive Circuit Analysis will be performed.

14 Circuit 45302 -- WEST BERWICK 53-02

Performance Analysis

The WEST BERWICK 53-02 circuit experienced five outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 589 customers for up to 783 minutes resulting in 318,387 CMI.

On May 7, 2019, a tree contacted an overhead conductor causing an interruption. This outage affected 1,211 customers for up to 352 minutes resulting in 161,433 CMI.

On May 29, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 118 customers for up to 884 minutes resulting in 104,271 CMI.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead splice causing an interruption. This outage affected 126 customers for up to 1,214 minutes resulting in 149,985 CMI.

On July 31, 2019, during a period of strong wind, an equipment failure occurred on an overhead splice causing an interruption. This outage affected 446 customers for up to 317 minutes resulting in 122,937 CMI.

In total, the WEST BERWICK 53-02 circuit had 56 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (38); equipment failure (9); animal contacts (8); nothing found (1).

Remedial Actions

- In 2019, a recloser was replaced with a telemetric triple-single recloser.
- In 2020, a section of single-phase will be re-sourced.
- In 2021, two sections of difficult-to-access conductor will be relocated.

15 Circuit 47704 -- BLOOMSBURG 77-04

Performance Analysis

The BLOOMSBURG 77-04 circuit experienced six outages of over 100,000 CMI between January 2019 and December 2019.

On February 25, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 93 customers for up to 1,693 minutes resulting in 123,351 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 156 customers for up to 2,524 minutes resulting in 268,364 CMI.

On April 15, 2019, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 404 customers for up to 448 minutes resulting in 180,874 CMI.

On June 29, 2019, 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 1,518 customers for up to 377 minutes resulting in 119,490 CMI.

On July 19, 2019, a tree contacted an overhead conductor causing an interruption. This outage affected 271 customers for up to 498 minutes resulting in 134,958 CMI.

On May 30, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 403 customers for up to 839 minutes resulting in 337,573 CMI.

In total, the BLOOMSBURG 77-04 circuit had 65 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (37); equipment failure (14); animal contacts (6); nothing found (6); contact or dig in (1); other (1).

Remedial Actions

- In 2018, the circuit breaker was replaced.
- In 2020, a section of single-phase will be evaluated for relocation or undergrounding.
- In 2020, full circuit trimming will be performed.
- In 2022, a new substation will be constructed.

16 Circuit 53601 -- DALMATIA 36-01

Performance Analysis

The DALMATIA 36-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On October 31, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,117 customers for up to 1,411 minutes resulting in 1,075,927 CMI.

In total, the DALMATIA 36-01 circuit had 47 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (35); equipment failure (5); animal contacts (4); nothing found (2); contact or dig in (1).

Remedial Actions

- In 2020, full circuit trimming will be performed.
- In 2020, two additional single-phase sectionalizing devices will be installed, and additional locations will be evaluated.
- In 2020, fusing will be installed at two locations.
- In 2020, an additional single-phase recloser will be installed.

17 Circuit 43201 -- MILLVILLE 32-01

Performance Analysis

The MILLVILLE 32-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 44 customers for up to 2,467 minutes resulting in 102,788 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 696 customers for up to 2,619 minutes resulting in 798,882 CMI.

In total, the MILLVILLE 32-01 circuit had 46 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (29); equipment failure (11); animal contacts (3); nothing found (2); other (1).

Remedial Actions

- In 2019, multiple porcelain cutouts were replaced.
- In 2019, a section of difficult to access single phase conductor was relocated.
- In 2020, additional single-phase reclosers will be installed.

- In 2021, a section of difficult-to-access single-phase conductor will be relocated.
- In 2021, a section of single-phase conductor will be re-sourced.

18 Circuit 18502 -- CANADENSIS 85-02

Performance Analysis

The CANADENSIS 85-02 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On July 21, 2019, during a period of strong wind, a tree contacted an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,841 customers for up to 672 minutes resulting in 726,808 CMI.

In total, the CANADENSIS 85-02 circuit had 104 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (72); equipment failure (12); animal contacts (10); vehicles (6); nothing found (4).

Remedial Actions

- In 2019, several transmission poles and conductors were replaced.
- In 2019, a new Smart Grid device was installed.
- In 2019, a new single-phase recloser was installed.
- In 2019, three sections of conductor were relocated.
- In 2019, several locations received reconductoring.
- In 2019, a single-phase recloser was replaced.
- In 2020, a section of single-phase line will be relocated.
- In 2020, hot spot trimming will be performed.
- In 2020, multiple locations will be reconductored or receive Hendrix tree cable.
- In 2020, a three-phase recloser will be installed.
- In 2020, two single-phase reclosers will be installed.
- In 2020, additional animal guarding will be installed.
- In 2020, a three-phase recloser will be replaced.
- In 2021, full circuit trimming will be performed.
- In 2021, a three-phase tie will be constructed to the CANADENSIS 85-01.
- In 2021, a section of three-phase conductor will be extended.
- In 2021, two single-phase ties will be constructed.

19 Circuit 45402 -- WEST BLOOMSBURG 54-02

Performance Analysis

The WEST BLOOMSBURG 54-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of lightning, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 137 customers for up to 3,899 minutes resulting in 157,902 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a motor operated switch to be interrupted. This outage affected 772 customers for up to 3,552 minutes resulting in 474,520 CMI.

In total, the WEST BLOOMSBURG 54-02 circuit had 89 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (60); equipment failure (15); animal contacts (7); nothing found (6); Improper Operation (1).

Remedial Actions

- In 2019, numerous porcelain cutouts were replaced with polymer cutouts.
- In 2019, several additional locations received animal guarding.
- In 2020, additional fusing will be evaluated.
- In 2020, additional single-phase reclosers will be evaluated for this circuit.

20 Circuit 56802 -- BENVENUE 68-02

Performance Analysis

The BENVENUE 68-02 circuit experienced no outages of over 100,000 CMI between January 2019 and December 2019.

In total, the BENVENUE 68-02 circuit had 86 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (67); equipment failure (13); animal contacts (3); nothing found (3).

Remedial Actions

- In 2019, four additional single-phase sectionalizing devices were installed.
- In 2019, the protection settings on this circuit were optimized.
- In 2019, a Proactive Circuit Analysis was performed. As a result, additional single-phase fusing will be installed at six locations in 2020.
- In 2020, a section of single-phase line will be re-sourced.
- In 2020, an additional single-phase recloser will be installed.
- In 2020, three sectionalizing devices will be installed.

21 Circuit 42701 -- AUGUSTAVILLE 27-01

Performance Analysis

The AUGUSTAVILLE 27-01 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On April 14, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 56 customers for up to 2,327 minutes resulting in 109,762 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 191 customers for up to 2,484 minutes resulting in 402,902 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 143 customers for up to 2,504 minutes resulting in 148,007 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 90 customers for up to 2,701 minutes resulting in 114,331 CMI.

In total, the AUGUSTAVILLE 27-01 circuit had 102 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (73); animal contacts (13); equipment failure (12); nothing found (2); other (1); vehicles (1).

Remedial Actions

- In 2018, a Proactive Circuit Review was performed. Additional fusing was installed as a result.
- In 2019, two additional single-phase reclosers were installed.
- In 2019, a section of multi-phase conductor was replaced.
- In 2019, an additional Smart Grid device was installed.
- In 2020, full circuit trimming will be performed.
- In 2020, a single-phase recloser will be installed.
- In 2020, a section of difficult-to-access conductor will be relocated.
- In 2020, an additional Smart Grid device will be installed.
- In 2020, an additional single-phase relocation will be evaluated.

22 Circuit 45602 -- WOOLRICH 56-02

Performance Analysis

The WOOLRICH 56-02 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 983 customers for up to 1,474 minutes resulting in 372,932 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 94 customers for up to 2,313 minutes resulting in 184,089 CMI.

On November 1, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 113 customers for up to 1,891 minutes resulting in 192,393 CMI.

On December 2, 2019, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 433 customers for up to 366 minutes resulting in 158,478 CMI.

In total, the WOOLRICH 56-02 circuit had 49 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (34); equipment failure (8); animal contacts (4); nothing found (3).

Remedial Actions

- In 2019, an additional Smart Grid device was installed.
- In 2019, additional animal guarding was installed.
- In 2019, a Proactive Circuit Analysis will be performed. The results are currently being evaluated.
- In 2020, a tie to the WOOLRICH 56-01 will be evaluated.
- In 2020, an additional single-phase sectionalizing device will be installed.
- In 2020, additional fusing will be installed.
- In 2021, an additional single-phase recloser will be installed.

23 Circuit 59002 -- MIFFLINTOWN 90-02

Performance Analysis

The MIFFLINTOWN 90-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On June 12, 2019, during a period of heavy rain, an unidentified issue occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 2,246 customers for up to 409 minutes resulting in 516,381 CMI.

On August 18, 2019, during a period of lightning, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,075 customers for up to 243 minutes resulting in 179,232 CMI.

In total, the MIFFLINTOWN 90-02 circuit had 78 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (46); equipment failure (22); animal contacts (4); nothing found (4); other (1); vehicles (1).

Remedial Actions

- In 2019, two single-phase sectionalizing devices were installed.
- In 2019, additional single-phase fusing was installed.
- In 2020, additional single-phase fusing will be installed.
- In 2020, a new line and terminal at MIFFLINTOWN substation will be installed.
- In 2020, an additional single-phase recloser will be evaluated.

24 Circuit 46206 -- DANVILLE 62-06

Performance Analysis

The DANVILLE 62-06 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 90 customers for up to 1,551 minutes resulting in 126,853 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 83 customers for up to 2,665 minutes resulting in 179,905 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 74 customers for up to 3,775 minutes resulting in 196,434 CMI.

In total, the DANVILLE 62-06 circuit had 48 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (30); equipment failure (10); animal contacts (5); nothing found (2); vehicles (1).

Remedial Actions

- In 2019, two additional single-phase reclosers were installed.
- In 2019, a section of single-phase conductor was rebuilt to underground.
- In 2019, a section of single-phase conductor was re-sourced.
- In 2019, multiple porcelain cutouts were replaced.
- In 2020, a tie to the DANVILLE 62-04 will be constructed.

25 Circuit 20103 -- AVOCA 01-03

Performance Analysis

The AVOCA 01-03 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On July 6, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,736 customers for up to 197 minutes resulting in 226,617 CMI.

On July 30, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,889 customers for up to 311 minutes resulting in 529,854 CMI.

On August 2, 2019, a vehicle contact occurred causing a circuit breaker to trip to lockout. This outage affected 1,886 customers for up to 400 minutes resulting in 289,301 CMI.

In total, the AVOCA 01-03 circuit had 12 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (5); equipment failure (4); animal contacts (2); vehicles (1).

Remedial Actions

- In 2020, additional fusing will be installed at four locations.
- In 2020, an additional single-phase recloser will be installed.
- In 2020, additional animal guarding will be installed.
- In 2021, a tie to the AVOCA 01-06 will be constructed.

26 Circuit 59202 -- THOMPSONTOWN 92-02

Performance Analysis

The THOMPSONTOWN 92-02 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On February 25, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 888 customers for up to 239 minutes resulting in 212,232 CMI.

On April 27, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 922 customers for up to 1,587 minutes resulting in 171,928 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 883 customers for up to 2,855 minutes resulting in 107,442 CMI.

In total, the THOMPSONTOWN 92-02 circuit had 80 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (57); equipment failure (16); animal contacts (3); nothing found (2); vehicles (2).

Remedial Actions

- In 2019, a section of line was storm hardened with new conductor, upgraded poles, and static tree wire.
- In 2019, a Smart Grid device was installed.
- In 2019, an additional single-phase sectionalizing device was installed.
- In 2019, additional fusing was installed at two locations.
- In 2020, a single-phase sectionalizing device will be installed.
- In 2020, a section of inaccessible conductor will be relocated.
- In 2020, additional fusing will be installed.
- In 2020, full circuit trimming will be performed.
- In 2020, a three-phase protective device will be upgraded to a Smart Grid device.
- In 2020, a section of single-phase will be evaluated for reconductoring.

27 Circuit 46302 -- ROHRSBURG 63-02

Performance Analysis

The ROHRSBURG 63-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 316 customers for up to 28 minutes resulting in 426,891 CMI.

On August 6, 2019, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 292 customers for up to 70 minutes resulting in 153,600 CMI.

In total, the ROHRSBURG 63-02 circuit had 79 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (45); equipment failure (18); nothing found (9); animal contacts (6); vehicles (1).

Remedial Actions

- In 2019, an additional single-phase recloser was installed.
- In 2019, an additional Smart Grid device was installed.
- In 2019, full circuit trimming was performed.
- In 2020, additional fusing will be installed.
- In 2021, a section of three-phase will be relocated.
- In 2021, a section of single-phase will be re-sourced.

28 Circuit 52402 -- GREEN PARK 24-02

Performance Analysis

The GREEN PARK 24-02 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 253 customers for up to 917 minutes resulting in 180,194 CMI.

In total, the GREEN PARK 24-02 circuit had 82 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (56); equipment failure (14); animal contacts (5); nothing found (3); contact or dig in (2); other (2).

Remedial Actions

- In 2019, a single-phase sectionalizing device was installed.
- In 2019, additional animal guarding was installed.
- In 2019, a section of difficult-to-access single-phase was relocated.
- In 2019, 80 additional fuses were installed.
- In 2020, multiple sections of conductor will be relocated.
- In 2020, a second transmission source to the distribution substation will be constructed.
- In 2020, additional single-phase sectionalizing will be installed at two locations.
- In 2020, two sections of difficult-to-access conductor will be relocated.
- In 2020, two sections of single-phase will be reconductored.
- In 2020, two sections of single-phase will be resourced.
- In 2020, one section of single-phase will be relocated to underground.
- In 2020, multiple additional single-phase sectionalizing devices will be installed.

- In 2020, a Proactive Circuit Analysis will be performed.

29 Circuit 21206 -- EAST CARBONDALE 12-06

Performance Analysis

The EAST CARBONDALE 12-06 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On July 30, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 3,052 customers for up to 275 minutes resulting in 591,341 CMI.

On October 31, 2019, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 454 customers for up to 650 minutes resulting in 294,741 CMI.

In total, the EAST CARBONDALE 12-06 circuit had 22 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (13); equipment failure (4); animal contacts (2); nothing found (2); vehicles (1).

Remedial Actions

- In 2019, the protection settings for this circuit were reviewed. Several minor remediations were performed.
- In 2020, full circuit trimming will be performed.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, a section of this circuit will be reconductored.
- In 2021, a section of this circuit will be re-sourced, and additional sectionalizing will be installed.

30 Circuit 26604 -- BROOKSIDE 66-04

Performance Analysis

The BROOKSIDE 66-04 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 976 customers for up to 816 minutes resulting in 471,487 CMI.

In total, the BROOKSIDE 66-04 circuit had 77 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (35); equipment failure (22); animal contacts (10); nothing found (5); contact or dig in (2); other (2); vehicles (1).

Remedial Actions

- In 2019, three additional fuses were installed.
- In 2019, a section of single-phase conductor was relocated.
- In 2019, the protection settings on this circuit were evaluated and updated.
- In 2019, an additional Smart Grid device was installed.
- In 2020, full circuit trimming will be performed.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, multiple locations will receive animal guarding.
- In 2021, a new line and terminal will be constructed to split the circuit.
- In 2021, a new three-phase tie will be constructed.
- In 2021, several sections of conductor will be relocated and reconductored.
- In 2021, four additional Smart Grid devices will be installed.

31 Circuit 56803 -- BENVENUE 68-03

Performance Analysis

The BENVENUE 68-03 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 651 customers for up to 2,302 minutes resulting in 232,455 CMI.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 143 customers for up to 1,740 minutes resulting in 205,539 CMI.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 124 customers for up to 994 minutes resulting in 123,288 CMI.

In total, the BENVENUE 68-03 circuit had 56 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (40); equipment failure (10); animal contacts (5); nothing found (1).

Remedial Actions

- In 2019, an additional single-phase recloser was installed.
- In 2019, additional fusing was installed at four locations.
- In 2020, full circuit trimming will be performed.
- In 2020, additional fusing will be installed.
- In 2020, additional single-phase sectionalizing will be evaluated.

32 Circuit 40602 -- PINE GROVE 06-02

Performance Analysis

The PINE GROVE 06-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On October 31, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 274 customers for up to 391 minutes resulting in 106,977 CMI.

On November 16, 2019, an equipment failure occurred on an overhead conductor causing a load break disconnect switch to be interrupted. This outage affected 1,915 customers for up to 476 minutes resulting in 160,879 CMI.

In total, the PINE GROVE 06-02 circuit had 68 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (32); equipment failure (14); animal contacts (10); nothing found (6); vehicles (5); other (1).

Remedial Actions

- In 2019, an additional Smart Grid device was installed.
- In 2019, an additional single-phase recloser installed.
- In 2019, two poles were replaced.
- In 2019, ten additional locations received fusing.
- In 2020, a section of single-phase line will be reconductored to three-phase, and the protection scheme will be upgraded.
- In 2020, an additional single-phase recloser will be installed.
- In 2021, a section of conductor in a heavily wooded area will be relocated.
- In 2021, full circuit trimming will be performed.

33 Circuit 28101 -- TWIN LAKES 81-01

Performance Analysis

The TWIN LAKES 81-01 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On December 2, 2019, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 77 customers for up to 2,684 minutes resulting in 173,954 CMI.

On December 2, 2019, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 254 customers for up to 647 minutes resulting in 136,381 CMI.

On December 9, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,024 customers for up to 254 minutes resulting in 129,697 CMI.

In total, the TWIN LAKES 81-01 circuit had 71 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (48); equipment failure (11); animal contacts (7); nothing found (4); other (1).

Remedial Actions

- In 2019, three-phase regulators were installed.
- In 2020, fusing will be installed at multiple locations.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, two new three-phase ties will be constructed.
- In 2020, multiple transformers will be replaced.
- In 2020, animal guarding will be installed at multiple locations.
- In 2020, several existing reclosers will be replaced.
- In 2020, additional single-phase reclosers will be evaluated for this circuit.

34 Circuit 41602 -- CLEVELAND 16-02

Performance Analysis

The CLEVELAND 16-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 87 customers for up to 3,561 minutes resulting in 124,961 CMI.

On April 15, 2019, 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 189 customers for up to 1,080 minutes resulting in 203,976 CMI.

In total, the CLEVELAND 16-02 circuit had 75 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (47); equipment failure (15); animal contacts (9); nothing found (3); contact or dig in (1).

Remedial Actions

- In 2018 and 2019, hazard tree removal was performed.
- In 2019, an existing recloser was upgraded to a Smart Grid device.
- In 2019, an additional Smart Grid device was installed.
- In 2019, a new single-phase recloser was installed.
- In 2020, additional single-phase reclosers will be evaluated.
- In 2020, re-conductoring will be evaluated for a section of heavily wooded conductor.
- In 2020, a Proactive Circuit Review will be performed.

- In 2020, the CLEVELAND substation will be rebuilt.
- In 2021, aerial and Hendrix cable will be installed.
- In 2021, a section of single-phase conductor in a heavily wooded area will be undergrounded.

35 Circuit 23604 -- WRIGHT 36-04

Performance Analysis

The WRIGHT 36-04 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On May 29, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 767 customers for up to 482 minutes resulting in 256,594 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 565 customers for up to 1,047 minutes resulting in 591,555 CMI.

In total, the WRIGHT 36-04 circuit had 23 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (10); equipment failure (8); animal contacts (3); nothing found (1); vehicles (1).

Remedial Actions

- In 2020, a three-phase tie will be evaluated for this circuit.
- In 2020, an additional single-phase recloser will be evaluated for this circuit.
- In 2021, aerial or Hendrix tree cable will be evaluated for a heavily wooded section of single-phase conductor.
- In 2021, a Proactive Circuit Review will be performed.

36 Circuit 53901 -- HALIFAX 39-01

Performance Analysis

The HALIFAX 39-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On February 25, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 574 customers for up to 924 minutes resulting in 328,968 CMI.

In total, the HALIFAX 39-01 circuit had 60 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (43); equipment failure (12); nothing found (3); animal contacts (2).

Remedial Actions

- In 2019, animal guarding was installed at multiple locations.
- In 2019, an additional single-phase sectionalizing device was installed.
- In 2019, a Smart Grid device was replaced.
- In 2020, additional single-phase fusing will be installed.
- In 2020, a section of single phase will be relocated.
- In 2020, a single-phase sectionalizing device will be installed.
- In 2020, hazard tree removal will be evaluated.
- In 2021, several sections of single-phase will be reconductored.

37 Circuit 29702 -- ANGELS 91-02

Performance Analysis

The ANGELS 91-02 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On November 1, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 60 customers for up to 1,742 minutes resulting in 104,475 CMI.

On December 2, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 406 customers for up to 599 minutes resulting in 243,194 CMI.

On December 3, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 625 customers for up to 180 minutes resulting in 111,997 CMI.

In total, the ANGELS 91-02 circuit had 52 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (36); equipment failure (10); animal contacts (5); other (1).

Remedial Actions

- In 2019, multiple cross arms were replaced.
- In 2019, additional animal guarding was installed at multiple locations.
- In 2019, multiple transformers were replaced on this circuit.
- In 2020, hot spot trimming will be performed on this circuit.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, a section of three-phase will be reconductored.
- In 2021, full circuit trimming will be performed.

38 Circuit 21705 -- SUBURBAN YARD#2 17-05

Performance Analysis

The SUBURBAN YARD#2 17-05 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 599 customers for up to 876 minutes resulting in 361,903 CMI.

On April 15, 2019, during a period of strong wind, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 716 customers for up to 646 minutes resulting in 377,293 CMI.

In total, the SUBURBAN YARD#2 17-05 circuit had 34 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (16); equipment failure (7); animal contacts (6); other (2); vehicles (2); nothing found (1).

Remedial Actions

- In 2020, 3 sectionalizing devices will be installed.
- In 2020, full circuit trimming will be performed.

39 Circuit 11804 -- FRANCONIA 18-04

Performance Analysis

The FRANCONIA 18-04 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On May 29, 2019, during a period of strong wind, an equipment failure occurred on an overhead conductor. This outage affected 963 customers for up to 1,297 minutes resulting in 812,710 CMI.

In total, the FRANCONIA 18-04 circuit had 28 outages between January 2019 and December 2019, with the causes breaking down as follows: equipment failure (8); tree related (8); animal contacts (6); nothing found (3); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2020, two additional single-phase reclosers and related fusing will be installed.
- In 2020, additional animal guarding will be installed.
- In 2020, a Proactive Circuit Review will be performed on this circuit.
- In 2020, additional fusing will be evaluated.
- In 2021, full circuit trimming will be performed.

40 Circuit 41701 -- LOGANTON 17-01

Performance Analysis

The LOGANTON 17-01 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 302 customers for up to 896 minutes resulting in 266,951 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 295 customers for up to 1,352 minutes resulting in 217,891 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 78 customers for up to 2,355 minutes resulting in 169,490 CMI.

In total, the LOGANTON 17-01 circuit had 58 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (39); animal contacts (7); equipment failure (7); nothing found (3); other (1); vehicles (1).

Remedial Actions

- In 2019, the substation was upgraded.
- In 2019, a section of heavily wooded conductor was undergrounded.
- In 2020, a section of difficult-to-access conductor will be evaluated for relocation.
- In 2020, full circuit trimming will be performed.
- In 2020, additional animal guarding will be installed.
- In 2020, additional single-phase reclosers will be evaluated.
- In 2021, a Proactive Circuit Review will be performed.

41 Circuit 24901 -- WHITE HAVEN 49-01

Performance Analysis

The WHITE HAVEN 49-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On October 4, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing a sectionalizing device to be interrupted. This outage affected 583 customers for up to 296 minutes resulting in 163,339 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing an interruption. This outage affected 363 customers for up to 1,164 minutes resulting in 421,301 CMI.

In total, the WHITE HAVEN 49-01 circuit had 53 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (24); equipment failure (19); animal contacts (7); nothing found (1); other (1); vehicles (1).

Remedial Actions

- In 2019, the getaway for this circuit was replaced.
- In 2019, a single-phase recloser was installed.
- In 2020, full circuit trimming will be performed.
- In 2020, two three-phase extensions will be constructed to split up single-phase customers.
- In 2020, a Proactive Circuit Analysis will be performed.

42 Circuit 26001 -- WEST DAMASCUS 60-01

Performance Analysis

The WEST DAMASCUS 60-01 circuit experienced no outages of over 100,000 CMI between January 2019 and December 2019.

In total, the WEST DAMASCUS 60-01 circuit had 78 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (48); equipment failure (14); nothing found (9); animal contacts (5); contact or dig in (1); vehicles (1).

Remedial Actions

- In 2019, 10 single-phase reclosers were installed.
- In 2019, 40 cross arms were replaced.
- In 2019, additional animal guarding was installed.
- In 2019, an additional Smart Grid device was installed.
- In 2020, seven additional single-phase reclosers will be installed.
- In 2020, settings were optimized on several reclosers.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, multiple sections of conductor will be replaced.
- In 2020, additional animal guarding will be installed.
- In 2020, three reclosers will be replaced.
- In 2021, a battery solution will be installed to improve restoration time.

43 Circuit 26601 -- BROOKSIDE 66-01

Performance Analysis

The BROOKSIDE 66-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On May 19, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,765 customers for up to 240 minutes resulting in 369,758 CMI.

On May 19, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 573 customers for up to 682 minutes resulting in 122,101 CMI.

In total, the BROOKSIDE 66-01 circuit had 38 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (20); equipment failure (11); animal contacts (2); nothing found (2); other (2); vehicles (1).

Remedial Actions

- In 2019, a single-phase recloser was installed.
- In 2019, several porcelain cutouts were replaced with polymer.
- In 2020, additional fusing will be installed at multiple locations.
- In 2020, full circuit trimming will be performed.
- In 2020, an additional single-phase recloser will be installed.

44 Circuit 18501 -- CANADENSIS 85-01

Performance Analysis

The CANADENSIS 85-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On May 16, 2019, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,410 customers for up to 280 minutes resulting in 118,347 CMI.

On July 21, 2019, during a period of strong wind, a tree contacted an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 1,428 customers for up to 532 minutes resulting in 336,533 CMI.

In total, the CANADENSIS 85-01 circuit had 47 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (34); equipment failure (7); nothing found (4); animal contacts (2).

Remedial Actions

- In 2019, several transmission poles and conductors were replaced.
- In 2019, hot spot circuit trimming was performed.
- In 2019, an existing recloser was replaced.
- In 2019, multiple capacitors were upgraded to telemetric capability.
- In 2020, additional hot-line clamps will be installed.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, animal guarding will be installed at multiple locations.
- In 2020, additional lightning arrestors will be installed.
- In 2020, full circuit trimming will be performed.
- In 2020, additional animal guarding will be installed.

45 Circuit 40101 -- HUNTER 01-01

Performance Analysis

The HUNTER 01-01 circuit experienced no outages of over 100,000 CMI between January 2019 and December 2019.

In total, the HUNTER 01-01 circuit had 59 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (37); equipment failure (10); animal contacts (9); nothing found (2); contact or dig in (1).

Remedial Actions

- In 2019, an additional single-phase recloser was installed.
- In 2019, additional fusing was installed at four locations.
- In 2019, several porcelain cutouts were replaced.
- In 2020, full circuit trimming will be performed.
- In 2020, aerial cable will be installed in a heavily wooded area.
- In 2020, additional Smart Grid devices will be evaluated.
- In 2021, a section of three-phase will be reconductored.

46 Circuit 46004 -- BERWICK 60-04

Performance Analysis

The BERWICK 60-04 circuit experienced three outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 60 customers for up to 2,313 minutes resulting in 136,656 CMI.

On April 15, 2019, during a period of strong wind, an equipment failure occurred on an overhead lightning protector causing a recloser to trip to lockout. This outage affected 116 customers for up to 3,822 minutes resulting in 139,121 CMI.

On May 31, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing an interruption. This outage affected 361 customers for up to 805 minutes resulting in 260,346 CMI.

In total, the BERWICK 60-04 circuit had 58 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (26); equipment failure (18); nothing found (8); animal contacts (6).

Remedial Actions

- In 2019, an additional single-phase recloser was installed.
- In 2019, full circuit trimming was performed.
- In 2019, multiple porcelain cutouts were replaced.
- In 2020, to additional single-phase reclosers will be installed.

47 Circuit 45502 -- DERRY 55-02

Performance Analysis

The DERRY 55-02 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 615 customers for up to 2,696 minutes resulting in 458,286 CMI.

In total, the DERRY 55-02 circuit had 32 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (17); animal contacts (8); equipment failure (5); nothing found (2).

Remedial Actions

- In 2020, a section of single-phase conductor will be re-sourced.
- In 2020, a Proactive Circuit Analysis will be performed.
- In 2020, multiple porcelain cutouts will be replaced.
- In 2020, full circuit tree trimming will be performed.

48 Circuit 20403 -- ASHFIELD 04-03

Performance Analysis

The ASHFIELD 04-03 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 403 customers for up to 341 minutes resulting in 121,187 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 162 customers for up to 1,108 minutes resulting in 165,618 CMI.

In total, the ASHFIELD 04-03 circuit had 67 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (51); animal contacts (6); equipment failure (6); nothing found (3); vehicles (1).

Remedial Actions

- In 2019, 21 fuses were installed.
- In 2019, full circuit trimming was performed.
- In 2019, a new three-phase recloser was installed.
- In 2019, a new single-phase recloser was installed.
- In 2019, a section of difficult-to-access single-phase was relocated.
- In 2020, a section of three-phase will be rebuilt and reconductored.
- In 2020, additional fusing will be installed.
- In 2020, additional single-phase reclosers will be evaluated for this circuit.

49 Circuit 17902 -- BARTONSVILLE 79-02

Performance Analysis

The BARTONSVILLE 79-02 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On December 2, 2019, during a period of ice/sleet/snow, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 95 customers for up to 1,567 minutes resulting in 148,864 CMI.

In total, the BARTONSVILLE 79-02 circuit had 42 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (30); equipment failure (5); animal contacts (4); nothing found (2); vehicles (1).

Remedial Actions

- In 2019, a new single-phase recloser was installed.
- In 2019, several capacitor banks were upgraded.
- In 2019, an existing sectionalizing device was replaced.
- In 2020, a new single-phase recloser will be installed.
- In 2020, fusing will be installed at multiple locations.
- In 2020, a section of single-phase conductor will be relocated.

50 Circuit 48302 -- ORWIGSBURG 83-02

Performance Analysis

The ORWIGSBURG 83-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On February 21, 2019, during a period of ice/sleet/snow, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 772 customers for up to 233 minutes resulting in 273,335 CMI.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead splice causing a load break fuse to operate. This outage affected 105 customers for up to 1,827 minutes resulting in 132,137 CMI.

In total, the ORWIGSBURG 83-02 circuit had 46 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (26); equipment failure (12); nothing found (3); animal contacts (2); vehicles (2); other (1).

Remedial Actions

- In 2019, two additional single-phase reclosers were installed.
- In 2020, additional fusing will be installed.
- In 2020, an additional single-phase recloser will be installed.
- In 2020, full circuit trimming will be performed.

51 Circuit 25501 -- MADISONVILLE 55-01

Performance Analysis

The MADISONVILLE 55-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On December 2, 2019, during a period of strong wind, a tree contacted an overhead switch causing a recloser to trip to lockout. This outage affected 199 customers for up to 1,372 minutes resulting in 273,111 CMI.

In total, the MADISONVILLE 55-01 circuit had 51 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (32); equipment failure (12); animal contacts (3); vehicles (2); nothing found (1); other (1).

Remedial Actions

- In 2019, a new single-phase recloser was installed.
- In 2019, an existing three-phase recloser was replaced.
- In 2019, several single-phase reclosers were replaced.
- In 2019, additional fusing was installed at multiple locations.
- In 2020, full circuit trimming will be performed.
- In 2020, a new single-phase recloser will be installed and several will be evaluated.
- In 2020, multiple capacitor banks will be upgraded.
- In 2020, animal guarding will be installed at multiple locations.

52 Circuit 41401 -- HUMMELS WHARF 14-01

Performance Analysis

The HUMMELS WHARF 14-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree made contact with an overhead conductor causing an interruption. This outage affected 69 customers for up to 1,757 minutes resulting in 121,183 CMI.

On June 26, 2019, during a period of strong wind, a tree made contact with an overhead conductor causing an interruption. This outage affected 1,224 customers for up to 536 minutes resulting in 390,324 CMI.

In total, the HUMMELS WHARF 14-01 circuit had 45 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (26); equipment failure (14); other (2); animal contacts (1); nothing found (1); vehicles (1).

- In 2019, a Proactive Circuit Review was performed. Several minor remediations were performed as a result.
- In 2020, an existing device will be evaluated for relocation.
- In 2020, a section of difficult-to-access single-phase will be relocated.
- In 2020, full circuit trimming will be performed.

53 Circuit 44502 -- HAMILTON 45-02

Performance Analysis

The HAMILTON 45-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 154 customers for up to 2,531 minutes resulting in 154,661 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 152 customers for up to 2,392 minutes resulting in 179,535 CMI.

In total, the HAMILTON 45-02 circuit had 63 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (45); equipment failure (11); nothing found (5); animal contacts (2).

Remedial Actions

- In 2018, a Proactive Circuit Review was performed with several cross-arms and cutouts replaced as a result.
- In 2019, hazard tree removal was performed.
- In 2019, additional animal guarding was installed.
- In 2019, multiple porcelain cutouts were replaced.
- In 2019, an existing pole was relocated.
- In 2019, additional single-phase fusing was installed.
- In 2019, a section of single-phase was relocated.
- In 2020, a single-phase recloser will be installed.
- In 2021, full circuit trimming will be performed.

54 Circuit 47002 -- HUGHESVILLE 70-02

Performance Analysis

The HUGHESVILLE 70-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 130 customers for up to 883 minutes resulting in 100,770 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a load break fuse to operate. This outage affected 626 customers for up to 2,878 minutes resulting in 163,251 CMI.

In total, the HUGHESVILLE 70-02 circuit had 69 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (43); equipment failure (15); animal contacts (4); nothing found (4); vehicles (3).

Remedial Actions

- In 2019, additional animal guarding was installed.
- In 2019, multiple porcelain cutouts were replaced.
- In 2020, a section of difficult-to-access single phase conductor will be relocated.
- In 2021, two single-phase reclosers will be installed.

55 Circuit 40502 -- CRESSONA 05-02

Performance Analysis

The CRESSONA 05-02 circuit experienced no outages of over 100,000 CMI between January 2019 and December 2019.

In total, the CRESSONA 05-02 circuit had 74 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (49); equipment failure (13); animal contacts (7); nothing found (4); other (1).

Remedial Actions

- In 2019, a section of single-phase was re-fed.
- In 2020, full circuit trimming will be performed.
- In 2020, additional fusing will be installed.
- In 2020, a section of single-phase will be evaluated for relocation.
- In 2021, a section of this line will be transferred to another circuit.

56 Circuit 52401 -- GREEN PARK 24-01

Performance Analysis

The GREEN PARK 24-01 circuit experienced no outages of over 100,000 CMI between January 2019 and December 2019.

In total, the GREEN PARK 24-01 circuit had 82 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (55); equipment failure (14); animal contacts (7); nothing found (5); vehicles (1).

Remedial Actions

- In 2019, two single-phase sectionalizing devices were installed.
- In 2020, hazard tree removal will be evaluated.
- In 2020, four additional single phase reclosers will be installed.
- In 2020, a section of single-phase will be reconductored.
- In 2020, a section of single-phase will be relocated underground.
- In 2020, additional fusing will be installed.
- In 2020, an additional Smart Grid device will be installed.
- In 2020, multiple devices will be evaluated for protection improvements.

57 Circuit 24602 -- VARDEN 46-02

Performance Analysis

The VARDEN 46-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On November 1, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 476 customers for up to 15 minutes resulting in 119,328 CMI.

On November 1, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 147 customers for up to 1,037 minutes resulting in 113,163 CMI.

In total, the VARDEN 46-02 circuit had 68 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (34); equipment failure (22); animal contacts (7); nothing found (2); other (2); vehicles (1).

Remedial Actions

- In 2019, additional animal guarding was installed at multiple locations.
- In 2020, single-phase reclosers will be evaluated for nine locations.
- In 2020, additional fusing will be evaluated.
- In 2020, several sections of line will be reconductored.

58 Circuit 57003 -- WHITE HILL 70-03

Performance Analysis

The WHITE HILL 70-03 circuit experienced four outages of over 100,000 CMI between January 2019 and December 2019.

On February 24, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 687 customers for up to 305 minutes resulting in 209,541 CMI.

On May 12, 2019, during a period of heavy rain, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 675 customers for up to 22 minutes resulting in 112,049 CMI.

On October 24, 2019, an animal interfered with a pole or pole arm causing a recloser to trip to lockout. This outage affected 501 customers for up to 239 minutes resulting in 119,713 CMI.

On November 28, 2019, during a period of strong wind, a tree contacted an overhead transformer causing a circuit breaker to trip to lockout. This outage affected 1,508 customers for up to 434 minutes resulting in 270,246 CMI.

In total, the WHITE HILL 70-03 circuit had 11 outages between January 2019 and December 2019, with the causes breaking down as follows: equipment failure (6); tree related (4); animal contacts (1).

Remedial Actions

- In 2019 a three-phase sectionalizing device was replaced.
- In 2019, a drone patrol was performed. As a result, multiple minor items were identified for 2020 remediation.
- In 2020, fusing will be installed at three locations.
- In 2020, a three-phase tie will be evaluated.

59 Circuit 41002 -- LAURELTON 10-02

Performance Analysis

The LAURELTON 10-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted a substation component causing a recloser to trip to lockout. This outage affected 323 customers for up to 2,632 minutes resulting in 111,391 CMI.

On October 31, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 129 customers for up to 2,141 minutes resulting in 206,461 CMI.

In total, the LAURELTON 10-02 circuit had 73 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (43); equipment failure (15); animal contacts (9); nothing found (5); vehicles (1).

Remedial Actions

- In 2019, a single-phase recloser was installed.
- In 2019, full circuit trimming was performed.
- In 2020, the substation getaways were replaced.
- In 2020, a Proactive Circuit Review will be performed.

60 Circuit 21502 -- CEDAR AVENUE 15-02

Performance Analysis

The CEDAR AVENUE 15-02 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 895 customers for up to 866 minutes resulting in 591,386 CMI.

In total, the CEDAR AVENUE 15-02 circuit had 15 outages between January 2019 and December 2019, with the causes breaking down as follows: equipment failure (6); tree related (6); other (2); nothing found (1).

Remedial Actions

- In 2019, additional fusing was installed.
- In 2019, the protection scheme for this circuit was reviewed and optimized.
- In 2020, additional fusing will be installed at three locations.

61 Circuit 45902 -- AUBURN 59-02

Performance Analysis

The AUBURN 59-02 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 15, 2019, during a period of strong wind, a tree made contact with an overhead conductor causing an interruption. This outage affected 449 customers for up to 227 minutes resulting in 101,104 CMI.

On October 27, 2019, during a period of strong wind, a tree made contact with an overhead conductor causing an interruption. This outage affected 403 customers for up to 852 minutes resulting in 265,096 CMI.

In total, the AUBURN 59-02 circuit had 46 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (28); nothing found (8); equipment failure (7); animal contacts (2); other (1).

Remedial Actions

- In 2019, a section of three-phase was reconductored.
- In 2020, a section of this circuit will be transferred to a new line.
- In 2020, additional fusing will be installed.
- In 2020, the AUBURN substation will be configured to be remotely transferrable.
- In 2020, multiple cross arms will be replaced.

62 Circuit 45001 -- LIMESTONE 50-01

Performance Analysis

The LIMESTONE 50-01 circuit experienced one outage of over 100,000 CMI between January 2019 and December 2019.

On July 16, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 436 customers for up to 24 minutes resulting in 151,610 CMI.

In total, the LIMESTONE 50-01 circuit had 65 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (43); animal contacts (11); equipment failure (5); other (3); nothing found (2); vehicles (1).

Remedial Actions

- In 2019, additional fusing was installed.
- In 2020, multiple poles will be evaluated for replacement.
- In 2020, additional single-phase fusing will be installed.
- In 2020, full circuit tree trimming will be performed.

63 Circuit 54701 -- NEW BLOOMFIELD 47-01

Performance Analysis

The NEW BLOOMFIELD 47-01 circuit experienced two outages of over 100,000 CMI between January 2019 and December 2019.

On April 27, 2019, during a period of strong wind, a tree contacted an overhead conductor causing a recloser to trip to lockout. This outage affected 1,091 customers for up to 448 minutes resulting in 141,099 CMI.

On May 29, 2019, during a period of heavy rain, a tree contacted a pole or pole arm causing a recloser to trip to lockout. This outage affected 473 customers for up to 228 minutes resulting in 107,962 CMI.

In total, the NEW BLOOMFIELD 47-01 circuit had 53 outages between January 2019 and December 2019, with the causes breaking down as follows: tree related (35); equipment failure (10); animal contacts (3); vehicles (3); nothing found (2).

Remedial Actions

- In 2019, a protection coordination study was conducted, as a result several changes will be applied.
- In 2020, seven single-phase sectionalizing devices will be installed.
- In 2020, full circuit trimming will be performed.
- In 2020, a drone patrol and Proactive Circuit Analysis will be performed.
- In 2020, additional single-phase sectionalizing will be evaluated.
- In 2021, a new Smart Grid device will be installed.

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

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

Cause Description	Trouble Cases	Percent of Trouble Cases	Customer Interruptions	Percent of Customer Interruptions	Customer Minutes	Percent of Customer Minutes
Animals	3,193	14.9%	46,505	3.8%	2,913,916	1.4%
Contact / Dig-In	160	0.7%	11,657	1.0%	769,028	0.4%
Directed by Non-PPL Authority	70	0.3%	11,822	1.0%	781,373	0.4%
Equipment Failures	5,977	27.8%	332,931	27.4%	33,091,079	15.5%
Improper Design	1	0.0%	31	0.0%	295	0.0%
Improper Installation	2	0.0%	84	0.0%	8,024	0.0%
Improper Operation	18	0.1%	7,020	0.6%	108,073	0.1%
Nothing Found	1,031	4.8%	61,250	5.0%	5,171,686	2.4%
Other Controllable	89	0.4%	9,040	0.7%	516,410	0.2%
Other Non Control	229	1.1%	8,682	0.7%	1,109,944	0.5%
Other Public	45	0.2%	9,538	0.8%	769,440	0.4%
Tree Related	9,952	46.3%	618,042	50.9%	159,018,659	74.3%
Unknown	-	0.0%	-	0.0%	-	0.0%
Vehicles	697	3.2%	83,528	6.9%	8,844,749	4.1%
Forced Due To UGI Gas	33	0.2%	13,229	1.1%	812,456	0.4%
Total	**21,497**	**100.0%**	**1,213,359**	**100.0%**	**213,915,132**	**100.0%**

Analysis of causes contributing to the majority of service interruptions:

Weather Conditions: PPL Electric records weather conditions, such as wind or lightning, as contributing factors to service interruptions, but does not code them as direct interruption causes. Therefore, some fluctuations in cause categories, especially tree- and equipment-related causes, are attributable to weather variations. For the current reporting period, weather was considered a significant contributing cause in 55% of cases, 64% of customer interruptions, and 83% of CMI.

Tree Related: Vegetation is one of the largest single contributors to the number of cases of trouble, customer interruptions and customer minutes. For the current reporting period, approximately 85% of the cases of trouble, 87% of the customer interruptions and 94% of the customer minutes attributed to tree related outages were weather-related.

Animals: Animals accounted for approximately 15% 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 75% of the number of cases of trouble was 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, in 2009, PPL Electric initiated distribution and substation animal guarding programs to focus systematically on protecting existing facilities most at risk of incurring animal-caused interruptions. All PPL Electric substations have received animal guarding.

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 42% of the cases of trouble, 48% of the customer interruptions and 58% 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	4th Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
Transmission					
Transmission C-tag poles (# of structures)	661	203	211	661	821
Transmission arm replacements (# of arms)	20	6	7	20	55
Transmission air break switch inspections (# of switches)	N/A				5
Transmission surge arrester installations (# of sets)	N/A				314
Transmission structure inspections (# of activities)	37,069	0	0	37,069	37,154
Transmission tree side trim-Bulk Power (linear feet)	N/A				
Transmission herbicide-Bulk Power (# of acres)	N/A				
Transmission reclearing (# of miles) BES Only	627	82	86	627	627
Transmission reclearing (# of miles) 69 kV	1,535	318	309	1,535	1,367
Transmission reclearing (# of miles) 138 kV	171	35	8	171	161
Transmission danger tree removals-Bulk Power (# of trees)	N/A				
Substation					
Substation batteries (# of activities)	456	13	36	456	694
Circuit breakers (# of activities)	95	28	52	95	474
Substation inspections (# of activities)	1,775	116	376	1,775	1,819
Transformer maintenance (# of activities)	41	3	5	41	139

Inspection & Maintenance Goals/Objectives	Annual Budget	4th Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
Distribution					
Distribution C-tag poles replaced (# of poles)	3,940	676	602	3,940	2,991
C-truss distribution poles (# of poles)	1,498	108	108	1,498	1,498
Capacitor (MVAR added)	0	0	1	0	15
OCR Replacements (# of)	36	0	0	36	36
Distribution pole inspections (# of poles)	90,000	0	0	90,000	12,144
Distribution line inspections (miles)[4]	2,176	1,380	739	2,176	1,535
Group re-lamping (# of lamps)	13,434	0	0	13,434	8,331
Test sections of underground distribution cable	N/A		192		973
Distribution tree trimming (# of miles)	5,540	1,347	1,475	5,540	5,642
Distribution herbicide (# of acres)	N/A				
Distribution >18" removals within R/W (# of trees)	N/A				
Distribution hazard tree removals outside R/W (# of trees)	N/A				
LTN manhole inspections (# of)	448	46	0	448	416
LTN vault inspections (# of)	345	119	0	345	469
LTN network protector overhauls (# of)	92	37	1	92	45
LTN reverse power trip testing (# of)	33	5	4	33	25

[4] In Q3, line inspections switched to a drone program and the units were changed from hours to miles.

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, as a whole, which includes the work identified in response to Item (6).

Activity	4th Quarter		Year-to-date	
	Budget ($000)	Actual ($000)	Budget ($000)	Actual ($000)
Provide Electric Service	1,802	1,891	6,771	6,710
Vegetation Management	10,004	12,637	42,944	44,602
Customer Response	13,613	15,313	56,808	70,483
Reliability Maintenance	10,020	5,767	41,575	28,450
System Upgrade	2,704	1,341	11,436	6,841
Customer Service/Accounts	29,926	26,355	111,016	98,930
Others	7,667	12,335	30,211	54,168
Total O&M Expenses	**75,735**	**75,639**	**300,761**	**310,186**

*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, as a whole, which includes transmission and distribution ("T&D") activities.

Activity	4th Quarter		Year-to-date	
	Budget ($000)	Actual ($000)	Budget ($000)	Actual ($000)
New Service/Revenue	19,321	16,089	83,438	81,474
System Upgrade	72,043	102,950	447,106	456,835
Reliability & Maintenance	112,771	137,354	500,584	487,120
Customer Response	4,018	7,635	17,043	32,714
Other	6,184	6,506	19,753	17,846
Total	**214,337**	**270,534**	**1,067,924**	**1,075,989**

9) Quarterly and year-to-date information on distribution substation inspections and reliability metrics.

(a) The Number of Corrective Work Orders by Type (Low-Priority, Mid-Priority, Urgent)

During the fourth quarter of 2019, 197 corrective work orders were created with the following breakdown by priority.

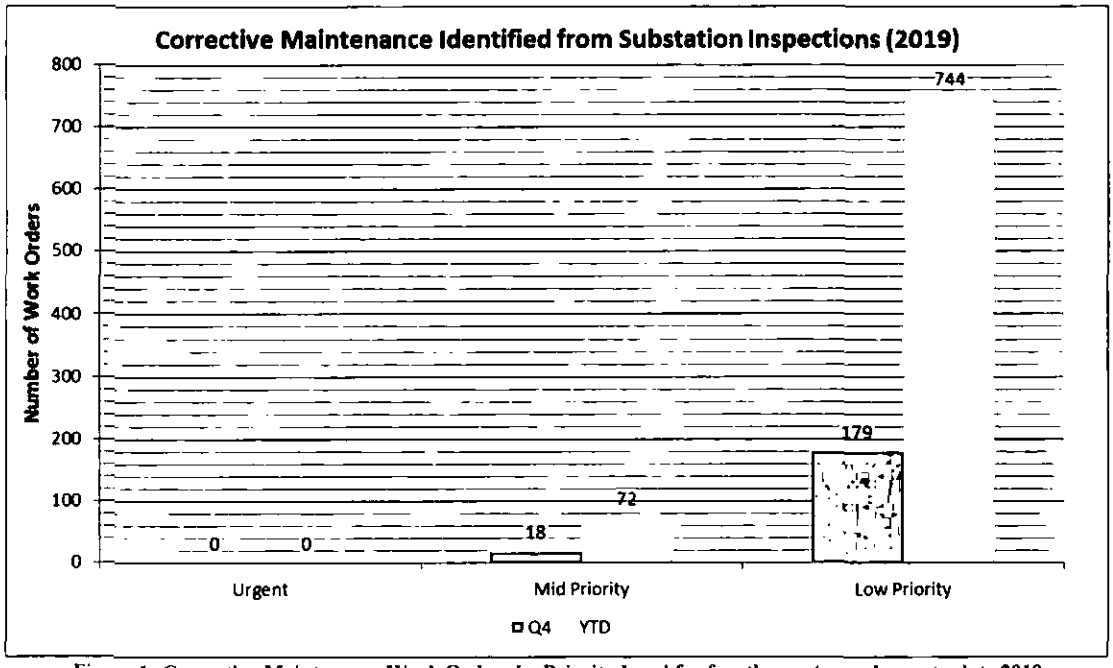


Figure 1: Corrective Maintenance Work Orders by Priority Level for fourth quarter and year-to-date 2019

(b) The Amount Spent on Substation Inspections

During the fourth quarter of 2019, PPL Electric spent approximately $122,000 on substation inspections.

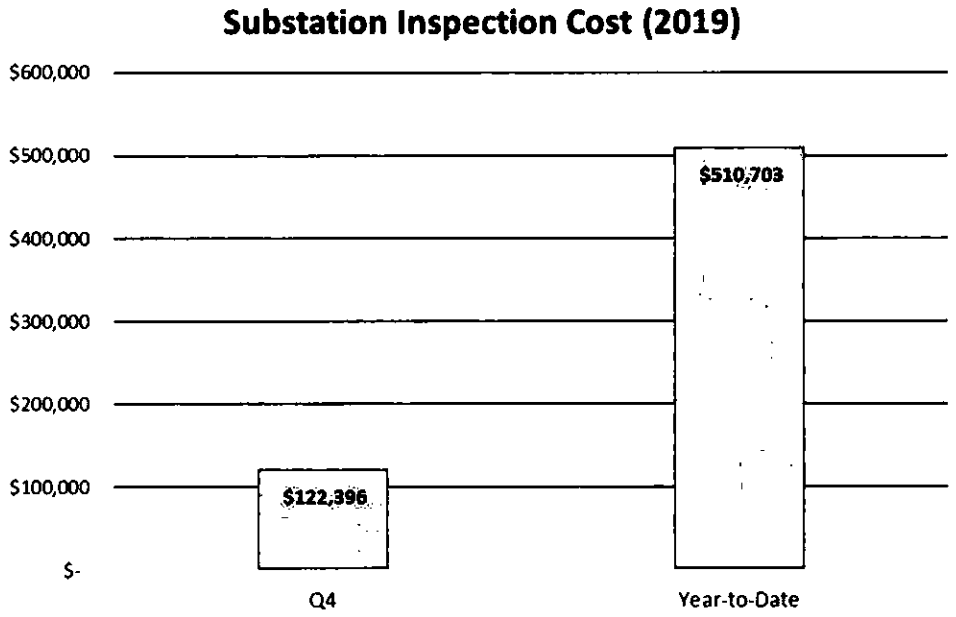


Figure 2: Substation Inspection Costs for fourth quarter and year-to-date 2019.

(c) The Amount Spent on Vegetation Management

Please refer to Section 7 for vegetation management expenses, for the fourth quarter and year-to-date.

(d) The Projected CMI Avoidance Due to Substation Inspections

The figure below shows the amount of CMI avoidance that PPL Electric has estimated for the fourth quarter and year-to-date. During fourth quarter of 2019, PPL Electric avoided a projected 495,000 CMI.

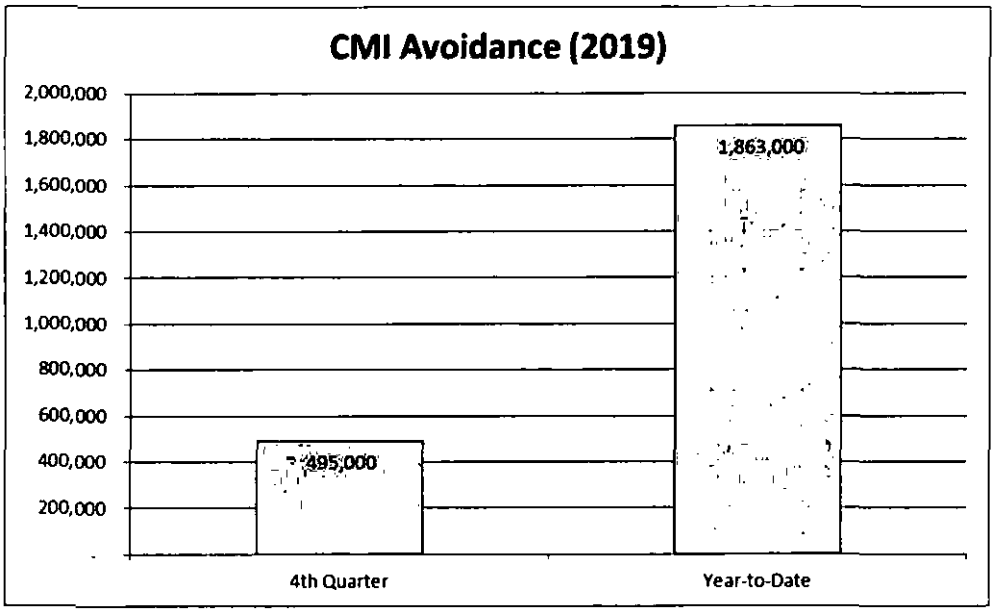


Figure 3: CMI Avoidance Due to Inspections for fourth quarter and year-to-date 2019

(e) Customer Minutes and Number of Customers Affected Due to Substation Sustained Outages

In the past three years, distribution substations have contributed a small amount toward the reliability metrics. During the fourth quarter of 2019, the Company interrupted about 6,000 customers for a total of approximately 172,000 CMI. The figures below show these results for the number of customers interrupted and CMI experienced, respectively.

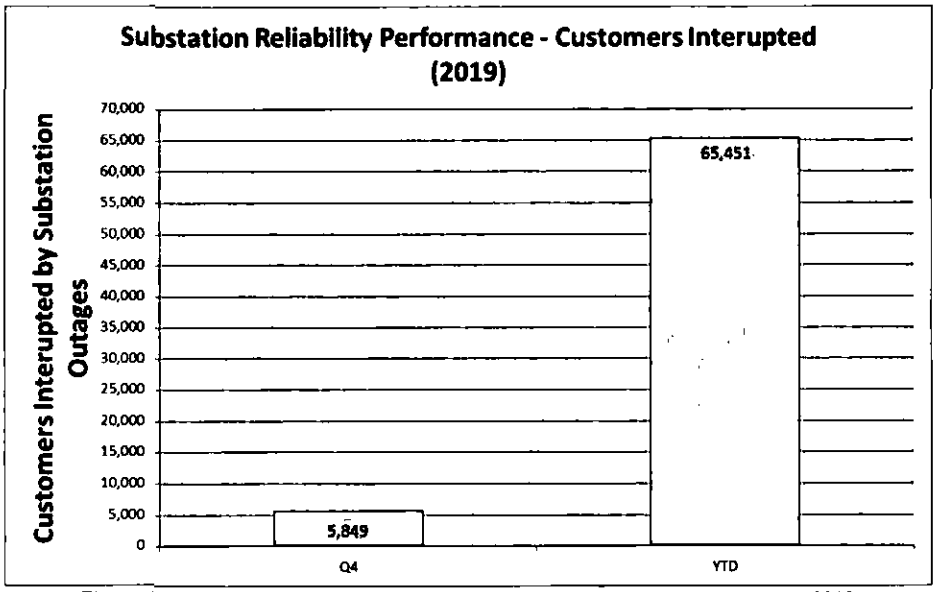


Figure 4: Substation Customers Interrupted for fourth quarter and year-to-date 2019

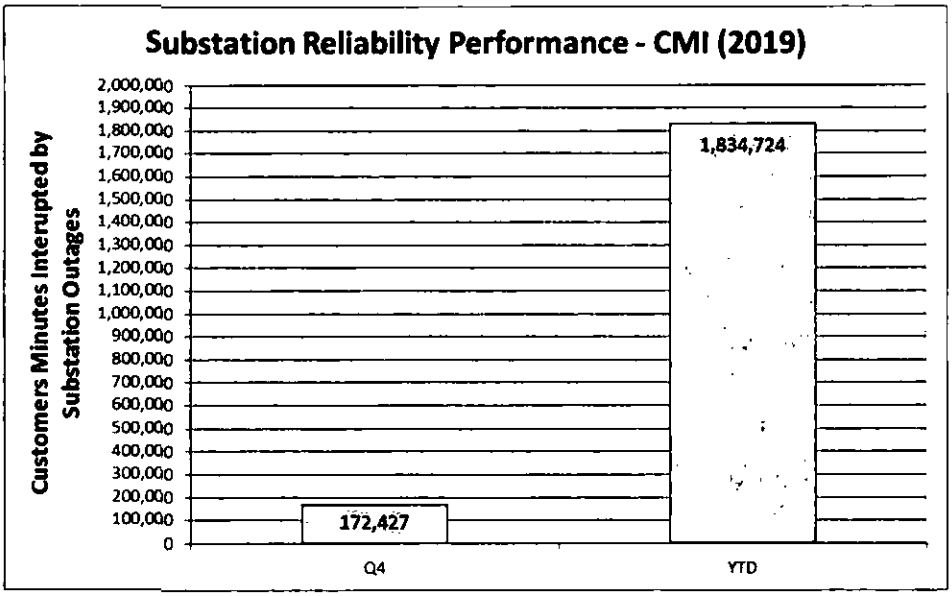


Figure 5: Substation Customer Minutes of Interruption for fourth quarter and year-to-date 2019

(f) Substation SAIFI Contribution

Overall, substation outages contributed approximately 2% of the total SAIFI experienced by PPL Electric customers in the fourth quarter of 2019. Historically, PPL Electric has ranked in the first quartile for Substation SAIFI performance on the Southeastern Electric Exchange (SEE) Survey, and is on-track to maintain its ranking among other electric utilities.

(g) Number of Substations with Remote Monitoring and Communication Technologies

PPL Electric has the capability of remotely monitoring its distribution substations through SCADA installations and through other telemetered equipment. This equipment allows PPL Electric to closely track the performance of its substation assets and respond to any trouble that is experienced on the distribution system. The table below shows the number of distribution substations that have this functionality.

	4th Quarter	Year-to-Date
Substations with Remote Monitoring	354	354
Total Number of Substations	356	356

PPL Electric has launched a project to install smart relaying onto all 12kV circuit breakers at its distribution substations. These relays will allow the Company to quickly perform automated switching for lesser system impact during an outage event, and better-estimate fault locations for quicker system restoration. By 2022, the Company expects all 12kV circuit breakers to have these functionalities in order to enhance reliability performance.

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

The following table shows the dedicated staffing levels as of the end of the quarter. Job descriptions are provided in Appendix B.

Transmission and Distribution	
Lineman Leader	61
Journeyman Lineman	187
Journeyman Lineman-Trainee	28
Helper	29
Groundhand	2
Troubleman	51
T&D Total	**358**
Electrical	
Elect Leaders-UG	3
Elect Leaders-Net	12
Elect Leaders-Sub	22
Journeyman Elect-UG	9
Journeyman Elect-Net	27
Journeyman Elect-Sub	61
Electrical Total	**134**
Overall Total	**492**

Appendix A

PPL Electric Utilities Corporation

Worst Performing Circuit Definition / Comparison under old and new Circuit Performance Index (CPI) formulas.

PPL Electric uses total Customer Minutes Interrupted (CMI) during the previous four quarters to define the worst performing circuits on its system. Major events and pre-arranged outages are excluded. This ranking system was put in place as of the second quarter of 2013, for the following reasons:

- It focuses remediation efforts where they will have the greatest customer impact. Small pockets of customers with multiple interruptions are addressed under the CEMI (Customers Experiencing Multiple Interruptions) program, which is adequately funded to remediate these smaller customer groups.
- It identifies the circuits contributing the most to system SAIDI.
- It is simple and transparent, therefore allowing WPCs to be identified and remediated on a short timetable.

Appendix B

PPL Electric Utilities Corporation

Job Descriptions

Transmission and Distribution

Groundhand	• Performs manual labor and assists employees in higher job classifications.
Helper	• Performs semi-skilled labor at any work location on de-energized overhead and underground transmission, and distribution facilities to prepare the employee for entrance into the Journeyman Lineman Apprenticeship Program.
Journeyman Lineman	• Works alone or as part of a crew on the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.
Journeyman Lineman-Trainee	• Works alone or as part of a crew on the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities.
Lineman Leader	• Responsible for completing assigned work by directing one or multiple groups of employees involved in the maintenance, operation, and construction activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities. • Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job. • Performs all the direct duties of the Journeyman Lineman when not acting as a Lineman Leader.
Troubleman	• Investigates and resolves trouble calls, voltage abnormalities on transmission and distribution systems associated with, but not limited to, PPL Electric facilities.

Electrical

Electrician Leader - Substation - Network - Underground	• Responsible for completing assigned work by directing one or multiple groups of employees involved in the construction and maintenance activities of the transmission and distribution systems associated with, but not limited to, PPL Electric facilities. • Engage in and perform work along with providing the necessary leadership, all-around knowledge, program, judgment, and experience to produce a quality job. • Performs all direct duties of the Journeyman Electrician when not acting as a leader.
Helper - Substation - Network - Underground	• Performs manual labor at any work location including those areas containing non-exposed energized electrical equipment, and to prepare the employee for entrance into the Apprenticeship Program.
Laborer - Substation - Network - Underground	• Performs manual labor and assists employees in higher job classifications.
Journeyman Electrician - Substation - Network - Underground	• Normally under limited supervision performs and is responsible for work associated with, but not limited to, PPL Electric facilities involving the highest degree of skill in construction and maintenance work associated with substations, LTN or underground distribution and transmission. • Uses microprocessor based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.

Journeyman Electrician - Trainee - Substation - Network - Underground	• Normally under limited supervision performs and is responsible for work associated with, but not limited to, PPL Electric facilities involving the highest degree of skill in construction and maintenance work associated with substations, LTN or underground distribution and transmission. • Uses microprocessor based equipment for troubleshooting and revising relay logic and its control systems related to the field services electrical discipline.

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