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FEDERAL EXPRESS

July 31, 2015

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

**Re: PPL Electric Utilities Corporation
Quarterly Reliability Report for the
Period Ended June 30, 2015
Docket No. L-00030161**

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 June 30, 2015. 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 that information, and the report containing the information, as privileged and confidential. The report is being filed pursuant to 52 Pa. Code § 57.195(d).

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on July 31, 2015, 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 time-stamp 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,

Paul E. Russell

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

Enclosures

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

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PPL Electric Utilities

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

August 2015

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

- 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.*

There were no major events during the second quarter of 2015.

- 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 July 31st, 2015¹.

SAIFI (Benchmark = 0.98; Rolling 12-month Std. = 1.18)	0.79
CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	155
SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	122
MAIFI²	3.32
Average Number of Customers Served³	1,401,435
Number of Sustained Customer Interruptions (Trouble Cases)	15,875
Number of Customers Affected⁴	1,102,801
Customer Minutes of Interruptions (CMI)	170,663,421
Number of Customer Momentary Interruptions	4,658,382

During the second quarter, there were no (0) PUC major events, one (1) PUC reportable storm, and seven (7) other storms that required the opening of one or more area emergency centers to manage restoration efforts.

Specifically, during the 12-month reporting period, there were no (0) PUC major events and four (4) PUC-reportable storms ($\geq 2,500$ customers interrupted for ≥ 6 hours) other than major events.

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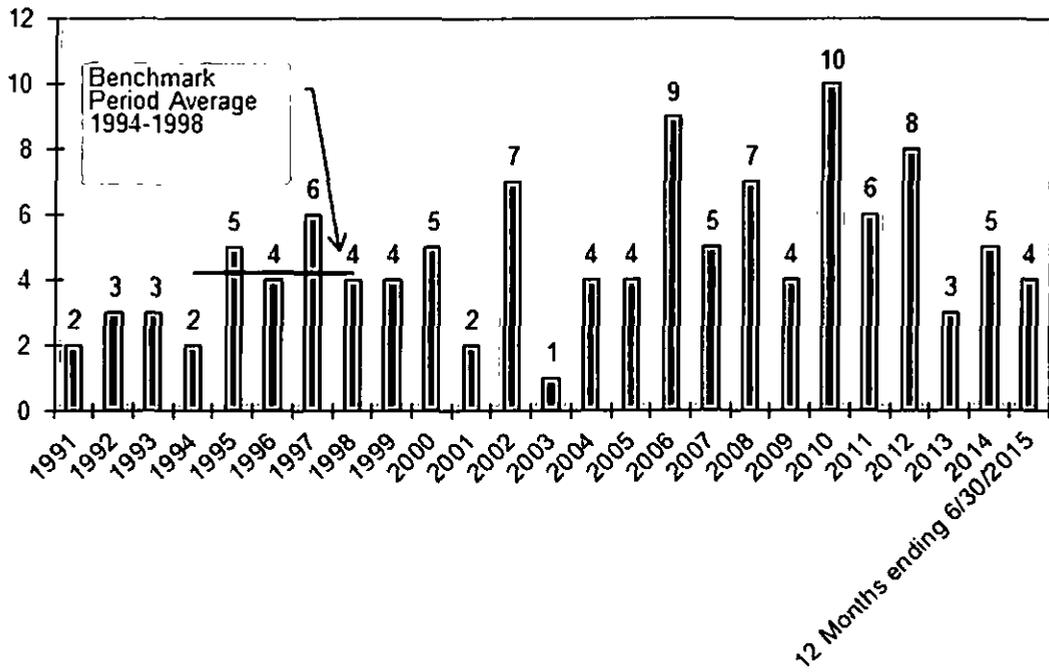
¹ Non-PPL Electric problems are excluded here, but may be found in Item 5.

² MAIFI data is obtained at the substation breaker and does not include momentary interruptions at lower level devices.

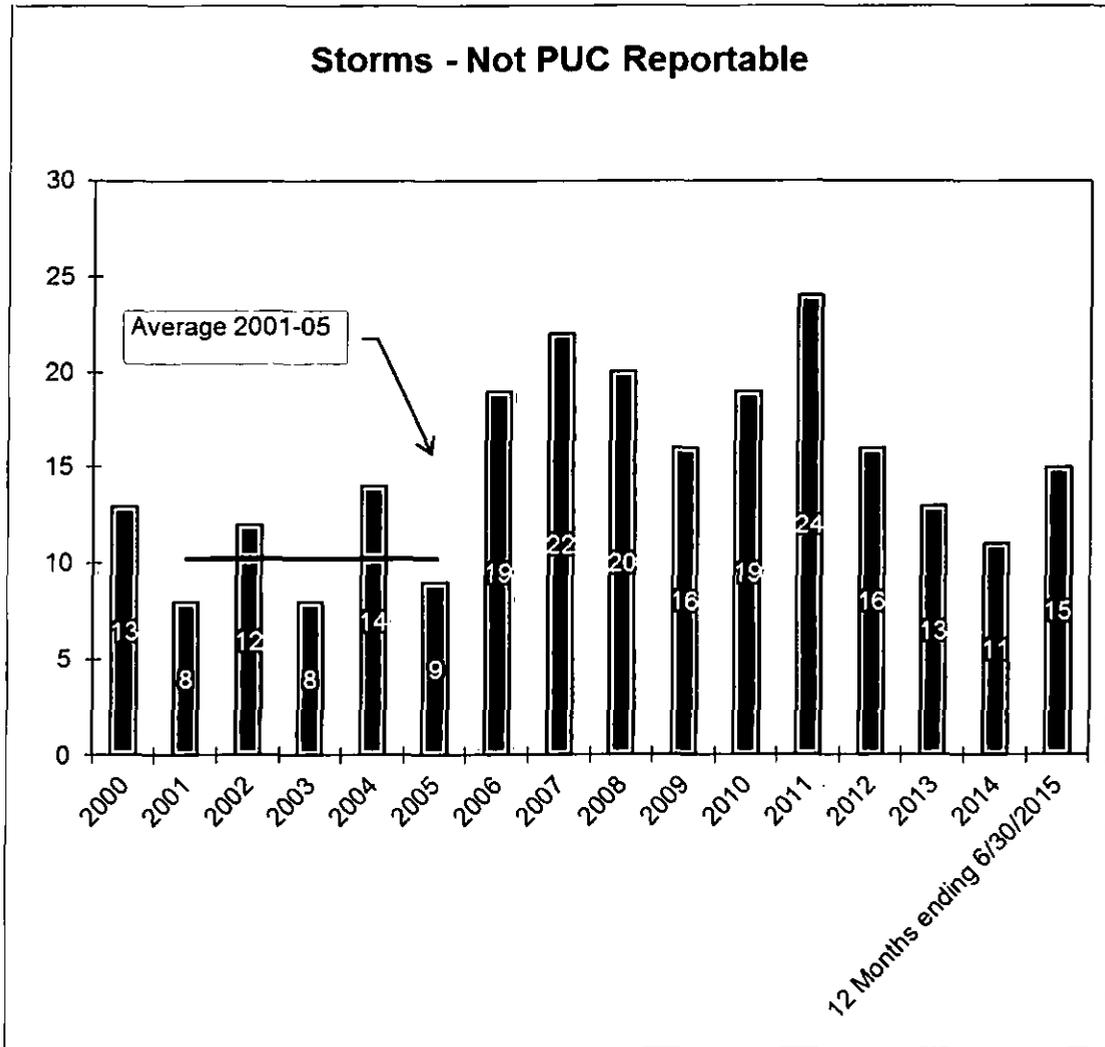
³ PPL Electric calculates the annual indices using customers served at the end of the period. This is consistent with the method used to calculate PPL Electric's benchmarks.

⁴ 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.

Storms - PUC Reportable Except Major Events



In addition, there were fifteen (15) storms that were not reportable, but which did require the opening of one or more area emergency centers to manage restoration efforts.



3) **Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, CMI, and if available, MAIFI) and other pertinent information such as customers served, number of interruptions, customer minutes interrupted, number of lockouts, and so forth, for the worst performing 5% of the circuits in the system. An explanation of how the EDC defines its worst performing circuits shall be included.**

The following table provides 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 ⁵	Customers	Cases of Trouble ⁶	Customer Minutes Interrupted (CMI)
1	56501	1.226	893	1.37	6.0	2,337	21	2,865,133
2	27101	1.453	379	3.84	3.1	1,842	63	2,675,878
3	25801	1,259	230	5.48	1.0	1,820	48	2,291,259
4	43202	1,533	640	2.40	0.3	1,174	40	1,799,480
5	21401	607	182	3.33	1.0	2,555	18	1,551,006
6	43103	651	341	1.91	2.0	2,247	37	1,462,330
7	13601	996	274	3.64	1.1	1,158	33	1,153,638
8	43504	544	156	3.49	7.0	2,030	12	1,103,526
9	47502	1,363	708	1.93	1.9	790	12	1,076,995
10	47001	431	150	2.87	2.5	2,484	58	1,069,962
11	24602	665	283	2.35	0.0	1,514	44	1,006,565
12	45502	1,591	1,282	1.24	1.0	614	13	976,692
13	28301	424	99	4.30	4.1	2,277	73	966,527
14	56504	479	337	1.42	2.9	1,995	54	955,110
15	53602	410	185	2.21	3.0	2,199	64	901,234
16	61801	563	231	2.43	2.0	1,601	27	901,092
17	58402	579	197	2.94	5.7	1,543	28	893,944
18	67402	676	448	1.51	12.0	1,309	34	885,087
19	46602	601	283	2.12	3.3	1,472	50	884,869
20	52403	756	450	1.68	2.0	1,167	50	881,683
21	42201	492	250	1.97	6.0	1,727	27	849,752
22	45501	593	397	1.49	9.1	1,427	47	846,257
23	46301	767	284	2.70	1.0	1,053	29	807,848
24	11102	404	335	1.21	0.0	1,979	10	799,616
25	60803	416	492	0.85	3.0	1,911	25	794,032
26	44301	383	346	1.11	10.0	2,049	53	785,413
27	14501	398	164	2.43	1.0	1,868	18	743,140
28	27102	800	359	2.23	10.0	902	36	721,497

⁵ MAIFI data is obtained at the substation breaker and does not include momentary interruptions at lower level devices.

⁶ Cases of trouble are the number of sustained customer service interruptions.

WPC Rank	Feeder ID	SAIDI	CAIDI	SAIFI	MAIFI ⁵	Customers	Cases of Trouble ⁶	Customer Minutes Interrupted (CMI)
29	51601	387	223	1.73	8.1	1,835	7	711,044
30	57304	435	211	2.06	2.9	1,620	24	705,074
31	64502	357	170	2.10	5.9	1,913	18	683,151
32	51603	285	115	2.49	6.0	2,392	16	682,868
33	59101	401	202	1.98	7.0	1,698	40	680,081
34	46302	623	344	1.81	1.0	1,087	45	676,676
35	40201	411	310	1.32	1.0	1,644	68	674,945
36	24101	377	559	0.67	1.0	1,775	14	669,328
37	22803	274	334	0.82	2.0	2,391	15	654,803
38	12304	938	773	1.21	0.4	685	14	642,365
39	64201	343	87	3.96	11.2	1,868	30	640,679
40	46001	270	284	0.95	3.0	2,353	35	635,762
41	47501	817	684	1.19	0.0	776	14	634,148
42	14404	416	130	3.21	2.4	1,523	17	633,843
43	67302	338	148	2.29	3.0	1,853	15	626,470
44	24603	400	308	1.30	0.0	1,551	39	619,878
45	26002	500	147	3.41	8.0	1,210	64	605,239
46	67401	430	608	0.71	5.0	1,371	31	589,542
47	10702	317	255	1.25	2.0	1,837	19	583,125
48	43201	583	664	0.88	4.0	966	32	563,487
49	10705	214	457	0.47	0.8	2,622	10	560,251
50	26001	399	207	1.93	0.0	1,385	46	553,294
51	26703	288	391	0.74	5.4	1,886	51	543,651
52	52402	326	158	2.06	2.0	1,652	51	537,988
53	45801	204	96	2.13	14.3	2,617	59	533,300
54	13704	340	120	2.84	3.0	1,559	38	529,669
55	16801	330	93	3.54	3.0	1,606	24	529,227
56	60605	368	354	1.04	3.0	1,410	14	518,561
57	28302	316	99	3.18	3.0	1,636	56	517,239
58	16204	402	450	0.89	4.0	1,282	14	515,531
59	40101	242	208	1.17	0.3	2,126	29	515,015
60	41901	717	243	2.95	3.7	714	19	511,692
61	62104	320	117	2.74	5.2	1,592	15	510,148

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

01 Circuit 56501 -- ROCKVILLE 65-01

Performance Analysis

The ROCKVILLE 65-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,345 customers for up to 1,196 minutes resulting in 2,803,189 CMI.

In total, the ROCKVILLE 65-01 circuit had 21 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (10); equipment failure (6); animal contacts (2); nothing found (2); other (1).

Remedial Actions

- In 2014, the ROCKVILLE 65-01 circuit was trimmed as part of its vegetation management cycle.
- In 2017, a new tie line and reconductoring will provide an alternate source for sectionalizing during cases of trouble.
- In 2017, additional sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2018, a new tie line and reconductoring will provide an alternate source for sectionalizing during cases of trouble.
- In 2018, additional sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.

02 Circuit 27101 -- GREENFIELD 71-01

Performance Analysis

The GREENFIELD 71-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 27, 2015, during a period of strong wind, a tree made contact with an overhead switch causing a recloser to trip to lockout. This outage affected 4,242 customers for up to 1,271 minutes resulting in 2,299,760 CMI.

In total, the GREENFIELD 71-01 circuit had 63 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (26); equipment failure (15); animal contacts (13); other (9).

Remedial Actions

- In 2015, a section of three phase line was relocated to the road to allow greater accessibility.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, two additional sections of three phase line will be relocated to allow greater accessibility.
- In 2015, full circuit tree trimming will be performed.
- In 2016, installation of a new sectionalizing device will be investigated to reduce customer count.
- In 2016, a line inspection will be completed.
- In 2018, a new tie line is planned between the EYNON 16-01 and GREENFIELD 71-01 lines. This tie will provide additional sectionalizing capabilities and help balance line load.

03 Circuit 25801 -- SULLIVAN TRAIL 58-01

Performance Analysis

The SULLIVAN TRAIL 58-01 circuit experienced six outages of over 100,000 CMI between July 2014 and June 2015.

On July 2, 2014, an unidentified issue occurred with a substation component causing a circuit breaker to trip to lockout. This outage affected 1,817 customers for up to 63 minutes resulting in 105,149 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 136 customers for up to 1,459 minutes resulting in 198,430 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,500 customers for up to 212 minutes resulting in 232,755 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a load break fuse to operate. This outage affected 624 customers for up to 1,585 minutes resulting in 860,802 CMI.

On August 7, 2014, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,813 customers for up to 234 minutes resulting in 205,149 CMI.

On April 4, 2015, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,818 customers for up to 486 minutes resulting in 179,226 CMI.

In total, the SULLIVAN TRAIL 58-01 circuit had 48 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (31); nothing found (6); animal contacts (5); equipment failure (5); other (1).

Remedial Actions

- In 2014, extensive hazard tree removal was completed on the SULLIVAN TRAIL 58-01 line to address CEMI customers.
- In 2014, SCADA was installed at the SULLIVAN TRAIL substation.
- In 2014 the substation cross-yard tie was replaced.
- In 2014, an Expanded Operational Review was completed on the SULLIVAN TRAIL 58-01 line. As a result of this review, two fuses were added to previously unprotected taps.
- In 2014, a line inspection was completed to proactively identify failing equipment. As a result of this inspection, 19 locations were identified and corrected during the first quarter of 2015.
- In 2015, locations for fault indicators on the SULLIVAN TRAIL 58-01 line were identified to improve troubleshooting during outages.
- In 2016, full circuit tree trimming is scheduled.
- In 2016, two new sectionalizing devices with remote operational capability will be installed on this circuit as part of the Smart Grid initiative.
- In 2019, a tie line between the SULLIVAN TRAIL 58-01 line and the EXETER 14-02 line will provide approximately 1,100 radial customers with an alternate source for sectionalizing during cases of trouble. Spacer cable is being considered for this project due to the area being heavily wooded.

04 Circuit 43202 -- MILLVILLE 32-02

Performance Analysis

The MILLVILLE 32-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 856 customers for up to 3,193 minutes resulting in 1,255,183 CMI.

On July 9, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 115 customers for up to 1,711 minutes resulting in 196,758 CMI.

In total, the MILLVILLE 32-02 circuit had 40 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (28); nothing found (6); animal contacts (2); equipment failure (2); contact or dig in (1); vehicles (1).

Remedial Actions

- In 2014, approximately 2,100 feet of new single phase was installed to serve CEMI customers from an alternate tap, and to improve accessibility.
- In 2015, additional fusing will be installed at three locations.
- In 2015, a project is scheduled to rebuild the three phase backbone of the MILLVILLE 32-02.
- In 2015, approximately 8,500 feet of larger capacity conductor will be installed on the MILLVILLE 32-02.
- In 2015, a radial three phase tap will be evaluated for three phase fusing.
- In 2017, full circuit tree trimming will be performed.

05 Circuit 21401 -- EXETER 14-01

Performance Analysis

The EXETER 14-01 circuit experienced four outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,538 customers for up to 954 minutes resulting in 1,101,058 CMI.

On November 26, 2014, during a period of ice/sleet/snow, an unidentified issue occurred with an overhead transmission component causing a circuit breaker to trip to lockout. This outage affected 2,549 customers for up to 65 minutes resulting in 163,314 CMI.

On December 3, 2014, during a period of heavy rain, an equipment failure occurred on an overhead fuse causing a recloser to trip to lockout. This outage affected 1,530 customers for up to 114 minutes resulting in 121,777 CMI.

On January 22, 2015, during a period of ice/sleet/snow, an equipment failure occurred causing a circuit breaker to trip to lockout. This outage affected 2,550 customers for up to 59 minutes resulting in 149,328 CMI.

In total, the EXETER 14-01 circuit had 18 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (6); tree related (4); nothing found (3); other (3); animal contacts (2).

Remedial Actions

- In 2014, an Expanded Operational Review was completed for the EXETER 14-01 line. As a result of this review, additional fusing and sectionalizing was identified for completion in 2015. Additionally, load balancing will be performed on this circuit.
- In 2014, a line inspection was completed to proactively identify failing equipment. As a follow-up to the line inspection, six locations were identified and corrected in the first quarter of 2015.
- In 2015, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2016, three new sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2016, a tie line between the EXETER 14-01 to the EXETER 14-02 lines will provide radial customers on both circuits with an alternate source for sectionalizing during cases of trouble.
- In 2017, two new sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.

06 Circuit 43103 -- SOUTH MILTON 31-03

Performance Analysis

The SOUTH MILTON 31-03 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,015 customers for up to 148 minutes resulting in 150,220 CMI.

On July 8, 2014, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,012 customers for up to 2,497 minutes resulting in 994,545 CMI.

In total, the SOUTH MILTON 31-03 circuit had 37 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (14); tree related (14); animal contacts (5); other (3); nothing found (1).

Remedial Actions

- In 2014, a recloser that operated on multiple occasions was inspected and repaired.
- In 2014, two new automated switches were installed and three existing switches were automated as part of the Smart Grid initiative.
- In 2014, multiple hazard trees were removed to improve reliability for CEMI customers.
- In 2014, a three phase recloser was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.

- In 2014, a post-storm line inspection was conducted and one minor issue was remediated.
- In 2014, line patrol of the circuit was conducted and infrared imaging of potential hot spot areas was completed. Problems were identified on secondary services, and repairs were made.
- In 2014, the circuit received additional trimming and hazard tree removal on a section of single phase line.
- In 2015, full circuit tree trimming will be performed.
- In 2015, a radial three phase tap is being evaluated for three phase fusing.
- In 2015, a project is scheduled to install single phase fusing.
- In 2016, a project is planned to build 900 feet of new single phase, so that 1,500 feet of difficult-to-access line can be removed.
- In 2016, a project is planned to build 2,100 feet of new single phase so that 4,300 feet of difficult-to-access copper line can be removed.

07 Circuit 13601 -- RICHLAND 36-01

Performance Analysis

The RICHLAND 36-01 circuit experienced five outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of lightning, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,164 customers for up to 352 minutes resulting in 294,403 CMI.

On July 4, 2014, during a period of lightning, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 210 customers for up to 933 minutes resulting in 186,337 CMI.

On July 8, 2014, during a period of ice/sleet/snow, an unidentified issue occurred with a substation component causing a circuit breaker to trip to lockout. This outage affected 431 customers for up to 415 minutes resulting in 179,261 CMI.

On July 23, 2014, during a period of heavy rain, a tree made contact with an overhead switch causing a recloser to trip to lockout. This outage affected 600 customers for up to 190 minutes resulting in 114,072 CMI.

On May 17, 2015, a vehicle contact occurred causing a circuit breaker to trip to lockout. This outage affected 1,164 customers for up to 762 minutes resulting in 166,672 CMI.

In total, the RICHLAND 36-01 circuit had 34 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (12); equipment failure (11); nothing found (6); animal contacts (3); other (1); vehicles (1).

Remedial Actions

- In 2015, additional single phase fusing will be installed.
- In 2015, an Expanded Operational Review will be performed.
- In 2015, an evaluation will assess rebuilding a difficult-to-access section of three phase conductor.
- In 2016, an existing recloser will be replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative
- In 2016, several new single phase fuses will be installed.
- In 2016 a single phase tap will be reconfigured.
- In 2016, full circuit tree trimming will be performed.
- In 2016, several poles will be replaced for storm hardening.
- In 2016, a section of single phase line will be evaluated for rebuilding with three phase.
- In 2016, new reclosers and fusing will be evaluated to improve sectionalizing.

08 Circuit 43504 -- WEST WILLIAMSPORT 35-04

Performance Analysis

The WEST WILLIAMSPORT 35-04 circuit experienced four outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,032 customers for up to 514 minutes resulting in 307,144 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,032 customers for up to 115 minutes resulting in 144,604 CMI.

On July 9, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,030 customers for up to 456 minutes resulting in 435,921 CMI.

On July 15, 2014, an equipment failure occurred on an overhead conductor causing a transformer to be interrupted. This outage affected 916 customers for up to 327 minutes resulting in 103,788 CMI.

In total, the WEST WILLIAMSPORT 35-04 circuit had 13 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (7); tree related (4); animal contacts (2).

Remedial Actions

- In 2014, an Expanded Operational Review was performed on this circuit. As a result of this review, fusing was installed at four locations to add additional sectionalizing capability.
- In 2014, two problems identified during infrared imaging of potential hot spots were remediated.
- In 2015, three existing devices will be replaced with new sectionalizing devices with remote operational capability as part of the Smart Grid initiative.
- In 2015, single phase fusing was installed at five locations.
- In 2016, an existing switch will be replaced with a new sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2016, a project is planned to construct a new tie line, providing radial customers with an alternate source for sectionalizing during cases of trouble. As part of this project, two new sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2016, a new recloser will be installed on a radial tap to reduce outage exposure.
- In 2017, full circuit tree trimming will be performed.

09 Circuit 47502 -- NEW COLUMBIA 75-02

Performance Analysis

The NEW COLUMBIA 75-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of lightning, an equipment failure occurred on a pole or pole arm causing an interruption. This outage affected 677 customers for up to 393 minutes resulting in 266,142 CMI.

On July 8, 2014, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 795 customers for up to 2,802 minutes resulting in 802,942 CMI.

In total, the NEW COLUMBIA 75-02 circuit had 12 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (7); animal contacts (2); nothing found (1); tree related (1); vehicles (1).

Remedial Actions

- In 2014, an existing tie switch between the NEW COLUMBIA 75-02 and the WATSON 33-02 was automated as part of the Smart Grid initiative.
- In 2015, a new load break disconnect switch was installed, allowing crews to isolate the conductor that crosses the Susquehanna River.

- In 2015, a tie line between the NEW COLUMBIA 75-02 and the SOUTH MILTON 31-05 circuits will provide customers on the NEW COLUMBIA 75-02 line with an alternate source for sectionalizing.
- In 2015, a project to build a tie line between the NEW COLUMBIA 75-02 and the ALLENWOOD 30-01 circuits is being evaluated.
- In 2015, an Expanded Operational Review was completed with no remedial projects identified.

10 Circuit 47001 -- HUGHESVILLE 70-01

Performance Analysis

The HUGHESVILLE 70-01 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 558 customers for up to 1,013 minutes resulting in 285,527 CMI.

On May 27, 2015, an animal interfered with a substation component causing a circuit breaker to trip to lockout. This outage affected 2,482 customers for up to 166 minutes resulting in 336,951 CMI.

On June 27, 2015, an improper operation occurred on an overhead switch. This outage affected 827 customers for up to 785 minutes resulting in 115,928 CMI.

In total, the HUGHESVILLE 70-01 circuit had 59 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (22); equipment failure (18); animal contacts (7); nothing found (5); Improper Operation (2); other (2); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2014, an existing sectionalizing device was automated as part of the Smart Grid initiative.
- In 2014, hot spot trimming and hazard tree removal were performed.
- In 2014, a new recloser was installed as part of the Smart Grid initiative.
- In 2015, the normally open switch between the HUGHESVILLE 70-01 and HUGHESVILLE 70-02 circuits was upgraded to a device with remote operational capability as part of the Smart Grid initiative.
- In 2015, the underground getaway for this circuit was proactively replaced.
- In 2015, animal guarding was installed at the HUGHESVILLE Substation.
- In 2015, a project that will increase the load that can be transferred from the HUGHESVILLE 70-01 to the MILLVILLE 32-02 line is scheduled. Approximately 8,500 feet of larger capacity conductor will be installed on the MILLVILLE 32-02.

- In 2015, additional 69kV transmission switches will be installed to allow the HUGHESVILLE 69kV transmission tap to be fed by either the CLINTON – MUNCY #1 69kV transmission line or the CLINTON – MUNCY #2 69kV transmission line.
- In 2016, fuses will be added to protect the three phase backbone.
- In 2016, full circuit tree trimming will be performed.
- In 2017, fuses will be added to protect the three phase backbone, and series fusing will be added at one location.
- In 2017, a project is planned to build one mile of new single phase and remove one mile of difficult-to-access copper conductor.
- In 2017, a new manually operable switch will be installed to allow line crews to transfer the HUGHESVILLE 70-01 to the HUGHESVILLE 70-02 line.
- In 2018, a project is planned to build 2,500 feet of new single phase.

11 Circuit 24602 -- VARDEN 46-02

Performance Analysis

The VARDEN 46-02 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 9, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 186 customers for up to 1,359 minutes resulting in 202,003 CMI.

On July 9, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 495 customers for up to 1,228 minutes resulting in 193,323 CMI.

On May 27, 2015, during a period of heavy rain, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 1,255 customers for up to 168 minutes resulting in 181,122 CMI.

In total, the VARDEN 46-02 circuit had 44 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (23); equipment failure (10); animal contacts (6); nothing found (3); other (1); vehicles (1).

Remedial Actions

- In 2015, two sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, three phase fusing will be investigated to sectionalize a short three phase tap.
- In 2015, a new tie line will be investigated to provide transfer capabilities.

- In 2015, relocation of two sections of three phase line to a more accessible location will be investigated.
- In 2016, a line inspection will be completed.
- In 2016, a section of single phase line will be rebuilt to an area that reduces customer exposure by eliminating difficult-to-access lines.
- In 2017, a sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.

12 Circuit 45502 -- DERRY 55-02

Performance Analysis

The DERRY 55-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 610 customers for up to 1,487 minutes resulting in 780,541 CMI.

On June 30, 2015, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 614 customers for up to 239 minutes resulting in 102,949 CMI.

In total, the DERRY 55-02 circuit had 14 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (8); equipment failure (3); animal contacts (1); nothing found (1); other (1).

Remedial Actions

- In 2015, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2016, full circuit tree trimming will be performed.
- In 2017, a portion of the MILTON-MILLVILLE 69 kV line serving the DERRY substation will be rebuilt to handle higher load.
- In 2018, approximately 3.1 miles of the three phase backbone will be constructed using larger conductor. This will increase the transfer capacity of the DERRY 55-02 to DANVILLE 62-03 tie.

13 Circuit 28301 -- NEWFOUNDLAND 83-01

Performance Analysis

The NEWFOUNDLAND 83-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On August 21, 2014, during a period of lightning, an equipment failure occurred on an overhead conductor causing a temporary open point to be interrupted. This outage affected 1,883 customers for up to 415 minutes resulting in 455,511 CMI.

On October 17, 2014, an equipment failure occurred on a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 2,271 customers for up to 480 minutes resulting in 101,134 CMI.

In total, the NEWFOUNDLAND 83-01 circuit had 73 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (30); equipment failure (16); animal contacts (15); nothing found (10); Improper Design (1); other (1).

Remedial Actions

- In 2014, a switch was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2014, the manual air break tie switch was replaced with an automated vacuum recloser on the NEWFOUNDLAND 83-01 to the HAMLIN 87-01 lines as part of the Smart Grid initiative.
- In 2015, an automated vacuum recloser was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2015, animal guards will be installed on several sections of the line to mitigate outages in an area with a high concentration of animal outages.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, a line inspection will be completed.
- In 2016, a sectionalizing device with remote operational capability was installed as part of the Smart Grid initiative.

14 Circuit 56504 -- ROCKVILLE 65-04

Performance Analysis

The ROCKVILLE 65-04 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 470 customers for up to 1,330 minutes resulting in 389,982 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 233 customers for up to 2,438 minutes resulting in 335,265 CMI.

In total, the ROCKVILLE 65-04 circuit had 54 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (26); equipment failure (12); animal contacts (11); nothing found (2); vehicles (2); other (1).

Remedial Actions

- In 2015, a one mile stretch of circuit is scheduled to be reconducted in order to mitigate vegetation outages experienced by high CEMI customers. Hot spot tree trimming will also be completed in this area.
- In 2015, an Expanded Operational Review will be performed on this circuit.
- In 2015, additional animal guarding will be evaluated for this circuit.
- In 2016, four additional sectionalizing devices will be installed or upgraded with remote operational capability as part of the Smart Grid initiative.
- In 2017, full circuit tree trimming will be performed.

15 Circuit 53602 -- DALMATIA 36-02

Performance Analysis

The DALMATIA 36-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On May 31, 2015, an equipment failure occurred on overhead equipment causing an interruption. This outage affected 814 customers for up to 440 minutes resulting in 145,867 CMI.

On June 12, 2015, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 672 customers for up to 676 minutes resulting in 123,518 CMI.

In total, the DALMATIA 36-02 circuit had 64 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (30); equipment failure (16); nothing found (7); animal contacts (6); other (2); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2014, hot spot tree trimming occurred on the DALMATIA to DAUPHIN section of the SUNBURY-DAUPHIN 69 kV circuit.
- In 2014, full circuit tree trimming was performed.

- In 2015, two sectionalizing devices were upgraded with remote operational capability as part of the Smart Grid initiative. Two additional devices are planned to be upgraded in 2015.
- In 2015, a problematic recloser was replaced after malfunctioning.
- In 2016, 17 motor operated switches are scheduled to be installed on the SUNBURY-DAUPHIN and DAUPHIN-PINE GROVE 69 kV lines. The switches will allow operators to quickly sectionalize transmission outages to no more than a single distribution substation.
- In 2017, a new 69-12 kV substation in the Meiserville area is scheduled for construction. The project will significantly reduce customer counts and circuit miles on the DALMATIA 36-02 circuit as well increase transfer capability in the area.
- In 2017, a section of difficult-to-access line will be relocated and reconducted with spacer cable.

16 Circuit 61801 -- EAST ELIZABETHTOWN 18-01

Performance Analysis

The EAST ELIZABETHTOWN 18-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On May 18, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,596 customers for up to 924 minutes resulting in 606,838 CMI.

On June 23, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,598 customers for up to 266 minutes resulting in 156,547 CMI.

In total, the EAST ELIZABETHTOWN 18-01 circuit had 27 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (11); tree related (10); animal contacts (3); other (2); nothing found (1).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2015, the settings on recloser outside of substation will be reevaluated.
- In 2015, projects to create tie lines between the MOUNT JOY 55-03, EAST ELIZABETHTOWN 18-01 and the DONEGAL 09-04 will be evaluated.
- In 2015, opportunities for installing sectionalizing devices in heavily wooded areas will be evaluated.
- In 2016, a tie line will be installed between the RHEEMS 60-01 and EAST ELIZABETHTOWN 18-01 line.
- In 2016, fusing will be evaluated at six locations.

17 Circuit 58402 -- MOUNT ROCK 84-02

Performance Analysis

The MOUNT ROCK 84-02 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 1,532 customers for up to 155 minutes resulting in 538,103 CMI.

In total, the MOUNT ROCK 84-02 circuit had 28 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (9); tree related (9); animal contacts (4); nothing found (2); other (2); vehicles (2).

Remedial Actions

- In 2014, two failed insulators and a broken guy wire were replaced.
- In 2015, two additional sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2015, a tie line on an adjacent circuit was reconnected, allowing for larger customer transfers.
- In 2015, additional fusing and a recloser are being evaluated on a single phase tap.
- In 2016, full circuit tree trimming will be performed.
- In 2018, a new tie line will be constructed to provide an alternate source for sectionalizing during cases of trouble.

18 Circuit 67402 -- WAKEFIELD 74-02

Performance Analysis

The WAKEFIELD 74-02 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead switch causing a recloser to trip to lockout. This outage affected 301 customers for up to 1,176 minutes resulting in 354,249 CMI.

On November 24, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 298 customers for up to 396 minutes resulting in 117,888 CMI.

On June 23, 2015, during a period of lightning, an equipment failure occurred on an overhead switch causing a recloser to trip to lockout. This outage affected 182 customers for up to 733 minutes resulting in 133,406 CMI.

In total, the WAKEFIELD 74-02 circuit had 34 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (15); tree related (12); nothing found (3); animal contacts (2); vehicles (2).

Remedial Actions

- In 2014, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2014, an existing recloser was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2014, a section of single phase line was extended, and difficult-to-access conductor was removed.
- *In 2015, full circuit tree trimming will be performed.*
- In 2015, additional fusing will be evaluated for two locations.
- In 2015, an additional recloser installation will be evaluated.

19 Circuit 46602 -- LARRYS CREEK 66-02

Performance Analysis

The LARRYS CREEK 66-02 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a temporary open point to be interrupted. This outage affected 140 customers for up to 1,609 minutes resulting in 153,335 CMI.

On January 5, 2015, during a period of strong wind, a tree made contact with a pole or pole arm causing a recloser to trip to lockout. This outage affected 647 customers for up to 328 minutes resulting in 212,216 CMI.

On March 31, 2015, during a period of ice/sleet/snow, a vehicle made contact with a pole causing a recloser to trip to lockout. This outage affected 666 customers for up to 261 minutes resulting in 173,826 CMI.

In total, the LARRYS CREEK 66-02 circuit had 50 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (30); equipment failure (8); nothing found (6); animal contacts (3); vehicles (3).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2014, a reliability improvement project was completed that relocated 2,800 feet of difficult-to-access single phase line, and a single phase recloser and additional tap fuses were installed.
- In 2015, 10 spans of difficult-to-access line will be relocated and additional fusing will be installed.
- In 2015, five additional fuses will be installed on single phase lines.
- In 2015, the 69-12kV power transformer at the LARRYS CREEK substation will be replaced with a new, larger capacity transformer.
- In 2015, a new tie line between the JERSEY SHORE 09-01 and the LARRYS CREEK 66-02 lines is being evaluated.
- In 2016, several fuses to add additional sectionalizing will be installed.

20 Circuit 52403 -- GREEN PARK 24-03

Performance Analysis

The GREEN PARK 24-03 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 309 customers for up to 1,093 minutes resulting in 307,935 CMI.

On June 8, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 457 customers for up to 224 minutes resulting in 102,080 CMI.

On June 8, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 97 customers for up to 1,216 minutes resulting in 118,704 CMI.

In total, the GREEN PARK 24-03 circuit had 50 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (31); equipment failure (11); animal contacts (4); nothing found (3); vehicles (1).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2015, a new tie line and reconductoring will provide an alternate source for sectionalizing.
- In 2015, two miles of conductor will be relocated to a more accessible location.
- In 2015, additional fusing is being evaluated for this circuit.

21 Circuit 42201 -- SHENANDOAH 22-01

Performance Analysis

The SHENANDOAH 22-01 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On October 16, 2014, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,023 customers for up to 327 minutes resulting in 271,237 CMI.

On March 14, 2015, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,020 customers for up to 248 minutes resulting in 207,453 CMI.

On April 21, 2015, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 1,020 customers for up to 712 minutes resulting in 294,149 CMI.

In total, the SHENANDOAH 22-01 circuit had 27 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (12); animal contacts (7); tree related (5); contact or dig in (1); other (1); vehicles (1).

Remedial Actions

- In 2015, additional fusing will be installed on the three phase and single phase taps.
- In 2015, a review of the protection scheme for the SHENANDOAH 22-01 circuit will be completed to identify improved sectionalizing opportunities.
- In 2017, a new reliability substation in RINGTOWN is planned to improve reliability and provide an alternate source for the SHENANDOAH 22-01 circuit.
- In 2017, a project to install a second circuit and additional tie on the new RINGTOWN substation is planned.
- In 2018, a section of line will be extended to tie two areas of the circuit together.

22 Circuit 45501 -- DERRY 55-01

Performance Analysis

The DERRY 55-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 537 customers for up to 1,075 minutes resulting in 136,524 CMI.

On October 20, 2014, an equipment failure occurred on an underground conductor causing a temporary open point to be interrupted. This outage affected 347 customers for up to 1,148 minutes resulting in 298,420 CMI.

In total, the DERRY 55-01 circuit had 47 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (24); equipment failure (11); animal contacts (6); nothing found (3); vehicles (2); contact or dig in (1).

Remedial Actions

- In 2015, a new sectionalizing device with remote operational capability was installed to improve sectionalizing as part of the Smart Grid initiative.
- In 2015, a new manual disconnect switch will be installed at the head of a radial tap.
- In 2015, additional fusing will be installed.
- In 2015, solid blade disconnects will be installed on a three phase tap.
- In 2015, construction of a three phase tie line is being evaluated.
- In 2017, full circuit tree trimming will be performed.

23 Circuit 46301 -- ROHRSBURG 63-01

Performance Analysis

The ROHRSBURG 63-01 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On July 2, 2014, during a period of lightning, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,039 customers for up to 194 minutes resulting in 110,566 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with a pole or pole arm causing a recloser to trip to lockout. This outage affected 78 customers for up to 3,179 minutes resulting in 191,465 CMI.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 310 customers for up to 475 minutes resulting in 142,613 CMI.

In total, the ROHRSBURG 63-01 circuit had 29 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (18); animal contacts (4); equipment failure (3); nothing found (2); vehicles (2).

Remedial Actions

- In 2015, several single phase taps will have series fusing installed.
- In 2016, an existing recloser will be replaced with a new sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2017, a new remotely operable sectionalizing device will be added as part of the Smart Grid initiative.
- In 2018, full circuit tree trimming will be performed.

24 Circuit 11102 -- EGYPT 11-02

Performance Analysis

The EGYPT 11-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On June 30, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,978 customers for up to 722 minutes resulting in 586,860 CMI.

On June 30, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 154 customers for up to 1,165 minutes resulting in 156,265 CMI.

In total, the EGYPT 11-02 circuit had 10 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (5); equipment failure (2); animal contacts (1); other (1); vehicles (1).

Remedial Actions

- In 2015, an Expanded Operational Review identified minor issues that will be addressed.
- In 2015, a project to balance loading on the circuit by extending new three phase is being evaluated.
- In 2016, full circuit tree trimming will be performed.

- In 2017, three additional sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.

25 Circuit 60803 -- BUCK 08-03

Performance Analysis

The BUCK 08-03 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,316 customers for up to 940 minutes resulting in 635,608 CMI.

In total, the BUCK 08-03 circuit had 25 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (12); tree related (11); animal contacts (1); nothing found (1).

Remedial Actions

- In 2014, fault indicators were installed as the result of an Expanded Operational Review.
- In 2014, full circuit tree trimming was performed.
- In 2014, a section of difficult-to-access line was relocated to a more accessible location.
- In 2014, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2015, additional fusing will be installed at two locations.
- In 2015, opportunities for fusing for two single phase radial taps will be investigated.
- In 2016, sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2016, this circuit will be reconfigured to lower the customer count and circuit mileage of the line.
- In 2017, a section of three phase will be extended and a section of difficult-to-access three phase line will be removed.

26 Circuit 44301 -- BEAVERTOWN 43-01

Performance Analysis

The BEAVERTOWN 43-01 circuit experienced three outages of over 100,000 CMI between July 2014 and June 2015.

On February 19, 2015, a vehicle contact occurred causing a recloser to trip to lockout. This outage affected 473 customers for up to 359 minutes resulting in 130,140 CMI.

On May 31, 2015, during a period of heavy rain, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 476 customers for up to 439 minutes resulting in 175,929 CMI.

On June 30, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 475 customers for up to 1,329 minutes resulting in 309,939 CMI.

In total, the BEAVERTOWN 43-01 circuit had 53 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (21); equipment failure (20); animal contacts (7); nothing found (3); vehicles (2).

Remedial Actions

- In 2014, select trouble areas on this circuit were trimmed and hazard trees were removed.
- In 2014, 900 feet of new single phase was built and difficult-to-access line was removed.
- In 2015, an existing recloser, sectionalizing switch, and normally open tie switch will be upgraded to remotely operable sectionalizing devices as part of the Smart Grid initiative.
- In 2015, full circuit tree trimming is being performed.
- In 2015, a project is being evaluated to build 600 feet of new single phase in order to eliminate 2,700 feet of difficult-to-access single phase.
- In 2017, a project is planned that will provide a tie for 1,133 radial customers. As part of this project 7,350 feet of new three phase will be installed and 7,500 feet of existing line will be reconducted.

27 Circuit 14501 -- SCHOENECK 45-01

Performance Analysis

The SCHOENECK 45-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 8, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,867 customers for up to 1,120 minutes resulting in 428,768 CMI.

In total, the SCHOENECK 45-01 circuit had 18 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (10); equipment failure (4); nothing found (2); animal contacts (1); vehicles (1).

Remedial Actions

- In 2015, an Expanded Operational Review will be completed.
- In 2015, six locations will be evaluated for single phase fusing.
- In 2016, a large project will be completed at SCHOENECK Substation. This project involves installation of two new lines and an additional transformer and transmission source. One of the new lines will split the SCHOENECK 45-01 line into two separate lines, reducing outage exposure. Additionally, the SCHOENECK 45-01 and the new line will receive sectionalizing devices with remote operational capability.
- In 2016, full circuit tree trimming will be performed.

28 Circuit 27102 – GREENFIELD 27-02

Performance Analysis

The GREENFIELD 27-02 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 27, 2015, during a period of heavy rain, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 903 customers for up to 647 minutes resulting in 520,467 CMI.

In total, the GREENFIELD 27-02 circuit had 37 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (22); equipment failure (7); animal contact (3); other (3); vehicles (2).

Remedial Actions

- In 2015, an existing switch was upgraded to a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, installation of a new sectionalizing device with remote operational capability on a section of three phase line will be investigated.
- In 2015, a project to relocate two sections of three phase line to a more accessible location will be investigated.
- In 2015, voltage regulators will be added to the three phase line to support customer loads during peak demand.
- In 2015, three phase fusing will be investigated to provide additional sectionalizing capabilities.
- In 2015, full circuit tree trimming will be performed.
- In 2016, a line inspection will be performed.

29 Circuit 51601 -- DUKE 16-01

Performance Analysis

The DUKE 16-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,106 customers for up to 2,217 minutes resulting in 605,837 CMI.

In total, the DUKE 16-01 circuit had 7 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (4); animal contacts (1); tree related (1); vehicles (1).

Remedial Actions

- In 2015, full circuit tree trimming was performed.
- In 2015, a roughly one mile tie line and reconductoring project will provide an alternate source for sectionalizing during cases of trouble. As part of this project an additional sectionalizing device with remote operational capability will be installed.
- In 2016, two additional sectionalizing devices will be installed or upgraded with remote operational capability as part of the Smart Grid initiative.

30 Circuit 57304 -- MOUNT ALLEN 73-04

Performance Analysis

The MOUNT ALLEN 73-04 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, an unidentified issue occurred with a substation component causing a circuit breaker to trip to lockout. This outage affected 1,545 customers for up to 139 minutes resulting in 213,627 CMI.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 87 customers for up to 2,238 minutes resulting in 194,772 CMI.

In total, the MOUNT ALLEN 73-04 circuit had 24 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (11); tree related (9); animal contacts (2); nothing found (1); other (1).

Remedial Actions

- In 2014, three reclosers were upgraded to include remote operational capability as part of the Smart Grid initiative.
- In 2014, full circuit tree trimming was performed.
- In 2015, a circuit review was performed to identify opportunities for additional fusing on a single phase tap. No new fuse locations were identified.
- In 2015, an existing sectionalizing device was upgraded to a device with remote operational capability as part of the Smart Grid initiative. The device will allow for the remote transfer of approximately half the customers to an adjacent circuit.
- In 2015, an Expanded Operational Review will be performed on this circuit.
- In 2018, an existing tie line will be reconducted to allow greater transfer capability.

31 Circuit 64502 -- LAVINO 45-02

Performance Analysis

The LAVINO 45-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On October 8, 2014, 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 1,915 customers for up to 173 minutes resulting in 330,835 CMI.

On June 12, 2015, during a period of lightning, an unidentified issue occurred with an overhead switch causing a recloser to trip to lockout. This outage affected 1,894 customers for up to 171 minutes resulting in 323,627 CMI.

In total, the LAVINO 45-02 circuit had 18 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (6); animal contacts (4); tree related (4); vehicles (2); nothing found (1); other (1).

Remedial Actions

- In 2014, an Expanded Operational Review was performed. No reliability opportunities were found.
- In 2015, full circuit tree trimming will be performed.
- In 2018, a section of the LAVINO 45-03 line will be reconducted to strengthen the tie line between the LAVINO 45-02 and LAVINO 45-03 lines.

32 Circuit 51603 -- DUKE 16-03

Performance Analysis

The DUKE 16-03 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On March 3, 2015, an equipment failure occurred on an overhead switch causing a circuit breaker to trip to lockout. This outage affected 3,125 customers for up to 171 minutes resulting in 355,047 CMI.

On May 10, 2015, an unidentified issue occurred with a substation component causing a circuit breaker to trip to lockout. This outage affected 2,391 customers for up to 126 minutes resulting in 275,469 CMI.

In total, the DUKE 16-03 circuit had 16 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (7); tree related (6); nothing found (2); other (1).

Remedial Actions

- In 2015, full circuit tree trimming was performed.
- In 2015, a roughly one mile tie line and reconductoring will provide an alternate source for sectionalizing during cases of trouble.
- In 2015, additional fusing is being evaluated for this circuit.

33 Circuit 59101 -- WALKER 91-01

Performance Analysis

The WALKER 91-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 8, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,117 customers for up to 1,491 minutes resulting in 506,301 CMI.

In total, the WALKER 91-01 circuit had 40 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (27); equipment failure (5); animal contacts (4); nothing found (2); other (1); vehicles (1).

Remedial Actions

- In 2013, full circuit tree trimming was performed.
- In 2015, additional single phase fusing is being evaluated.

- In 2015, additional sectionalizing devices with remote operational capability are being evaluated for this circuit as part of the Smart Grid initiative
- In 2015, hot spot tree trimming will be evaluated for this circuit.
- In 2019, a roughly four mile tie line and reconductoring will provide an alternate source for sectionalizing during cases of trouble. The tie line will also benefit radial customers on the MIFFLINTOWN 90-02 circuit.

34 Circuit 46302 -- ROHRSBURG 63-02

Performance Analysis

The ROHRSBURG 63-02 circuit experienced no outages of over 100,000 CMI between July 2014 and June 2015.

In total, the ROHRSBURG 63-02 circuit had 45 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (25); equipment failure (8); nothing found (5); animal contacts (4); vehicles (2); other (1).

Remedial Actions

- In 2014, an Expanded Operational Review was completed on this circuit. As a result of this review, three reliability improvement projects were identified and are planned for 2018.
- In 2015, an existing recloser will be upgraded with a new sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2016, an existing recloser will be upgraded with a new sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2016, a one mile section of line will be relocated to a more accessible location.
- In 2018 approximately one mile of difficult-to-access three phase line will be relocated.
- In 2018, full circuit tree trimming will be performed.

35 Circuit 40201 -- BEAR GAP 02-01

Performance Analysis

The BEAR GAP 02-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On November 26, 2014, during a period of ice/sleet/snow, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 309 customers for up to 905 minutes resulting in 279,805 CMI.

In total, the BEAR GAP 02-01 circuit had 68 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (26); equipment failure (15); animal contacts (11); nothing found (7); other (6); vehicles (3).

Remedial Actions

- In 2015, full circuit tree trimming was completed.
- In 2015, a new sectionalizing device with remote operational capability was installed as part of the Smart Grid initiative.
- In 2015, three phase fusing will be installed at several locations on the BEAR GAP 02-01 line.
- In 2015, locations to install solid blade disconnects will be identified.
- In 2015, a single phase recloser will be replaced as of the result of an equipment failure.
- In 2015, additional areas for animal guarding are being investigated.
- In 2015, a project to create a tie line between the BEAR GAP 02-01 to the BLOOMSBURG 77-02 circuits is being investigated.
- In 2016, an existing non-remote sectionalizing device will be replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2016, a new single phase recloser will be installed.
- In 2017, a new sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.

36 Circuit 24101 -- EAST HAZLETON 41-01

Performance Analysis

The EAST HAZLETON 41-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 27, 2015, during a period of heavy rain, an equipment failure occurred on an overhead splice causing a circuit breaker to trip to lockout. This outage affected 2,179 customers for up to 1,120 minutes resulting in 549,635 CMI.

In total, the EAST HAZLETON 41-01 circuit had 15 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (8); equipment failure (7).

Remedial Actions

- In 2015, a tie line between EAST HAZLETON 41-01 and the HARWOOD 29-01 will be constructed to improve sectionalizing capability.
- In 2015, additional sectionalizing devices with remote operational capability will be evaluated as part of the Smart Grid initiative.
- *In 2017, full circuit tree trimming will be performed.*

37 Circuit 22803 -- HAUTO 28-03

Performance Analysis

The HAUTO 28-03 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 22, 2015, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,372 customers for up to 566 minutes resulting in 577,916 CMI.

In total, the HAUTO 28-03 circuit had 16 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (7); tree related (4); animal contacts (2); nothing found (2); vehicles (1).

Remedial Actions

- In 2015, a project to automate the tie line between the HAUTO 28-03 and the LANSFORD 96-01 circuits will be investigated.
- In 2015, a project to extend the line, create a tie line, or install reliability substation will be evaluated.
- In 2016, a tie line between the HAUTO 28-03 and the GREENWOOD 06-01 circuits will be constructed.
- In 2017, a sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.

38 Circuit 12304 -- LANARK 23-04

Performance Analysis

The LANARK 23-04 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of lightning, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 686 customers for up to 1,060 minutes resulting in 569,903 CMI.

In total, the LANARK 23-04 circuit had 14 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (8); equipment failure (2); animal contacts (1); contact or dig in (1); nothing found (1); other (1).

Remedial Actions

- In 2015, full circuit tree trimming was performed.
- In 2015, additional three phase fusing will be evaluated at seven locations. Load break disconnects will be considered where fusing is not optimal.
- In 2015, a project to relocate an existing two phase recloser to a more optimal location will be evaluated.
- In 2015, a project to relocate a section of single phase conductor will be evaluated.

39 Circuit 64201 -- KINZER 42-01

Performance Analysis

The KINZER 42-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On June 23, 2015, during a period of strong wind, a tree made contact with an overhead switch causing a circuit breaker to trip to lockout. This outage affected 1,867 customers for up to 283 minutes resulting in 316,302 CMI.

On June 23, 2015, during a period of strong wind, an animal interfered with an overhead switch causing a circuit breaker to trip to lockout. This outage affected 659 customers for up to 233 minutes resulting in 153,553 CMI.

In total, the KINZER 42-01 circuit had 30 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (11); tree related (7); nothing found (5); animal contacts (4); vehicles (2); other (1).

Remedial Actions

- In 2014, an Expanded Operational Review was performed, minor improvements were implemented.
- In 2015, an existing recloser will be replaced with a new recloser to improve reliability.
- In 2015, a tie line between the KINZER 42-01 line and the KINZER 42-04 lines will be evaluated.
- In 2019, the KINZER substation will be rebuilt.

40 Circuit 46001 -- BERWICK 60-01

Performance Analysis

The BERWICK 60-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On September 5, 2014, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 940 customers for up to 119 minutes resulting in 111,455 CMI.

On June 27, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 946 customers for up to 501 minutes resulting in 470,327 CMI.

In total, the BERWICK 60-01 circuit had 35 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (12); tree related (11); animal contacts (7); nothing found (3); other (1); vehicles (1).

Remedial Actions

- In 2015, a tie line to improve sectionalizing ability will be evaluated.
- In 2016, a remotely operable sectionalizing device will be added and two existing devices will be upgraded to remotely operable devices.
- In 2016, full circuit tree trimming will be performed.

41 Circuit 47501 -- NEW COLUMBIA 75-01

Performance Analysis

The NEW COLUMBIA 75-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 772 customers for up to 1,619 minutes resulting in 544,432 CMI.

In total, the NEW COLUMBIA 75-01 circuit had 15 outages between July 2014 and June 2015, with the causes breaking down as follows: animal contacts (5); tree related (5); equipment failure (3); nothing found (2).

Remedial Actions

- In 2015, an Expanded Operational Review is scheduled to be performed.
- In 2017, two new remotely operable sectionalizing devices will be added.
- In 2018, a project to rebuild a section of single phase line is scheduled for completion.
- In 2018, a project is scheduled to relocate a section of single phase line.

42 Circuit 14404 -- SOUTH SLATINGTON 44-04

Performance Analysis

The SOUTH SLATINGTON 44-04 circuit experienced four outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 122 customers for up to 943 minutes resulting in 115,107 CMI.

On November 6, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,519 customers for up to 224 minutes resulting in 131,268 CMI.

On February 27, 2015, an equipment failure occurred on an overhead conductor causing an interruption. This outage affected 686 customers for up to 371 minutes resulting in 139,361 CMI.

On March 2, 2015, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,516 customers for up to 479 minutes resulting in 138,956 CMI.

In total, the SOUTH SLATINGTON 44-04 circuit had 17 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (8); animal contacts (4); equipment failure (4); other (1).

Remedial Actions

- In 2014, an Expanded Operational Review was performed.
- In 2015, an existing sectionalizing device with remote operational capability will be reprogrammed to operate as a protective device.
- In 2015, an existing three phase recloser will be replaced with a sectionalizing device with remote operational capability as part of the Smart Grid device.
- In 2016, additional fusing will be installed at several locations.
- In 2016, a single phase tap will be reconducted.
- In 2016, a section of difficult-to-access and heavily wooded three phase will be relocated.
- In 2016, a project to reconductor the three phase tie to TREICHLERS 48-01 will be evaluated.

- In 2017, full circuit tree trimming will be performed.

43 Circuit 67302 -- WYOMISSING 73-02

Performance Analysis

The WYOMISSING 73-02 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On January 11, 2015, during a period of extreme temperatures, a vehicle contact occurred causing a circuit breaker to trip to lockout. This outage affected 1,850 customers for up to 390 minutes resulting in 338,386 CMI.

In total, the WYOMISSING 73-02 circuit had 15 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (6); equipment failure (4); animal contacts (3); vehicles (2).

Remedial Actions

- In 2014, a single blade load break air switch was replaced with a gang operated device.
- In 2015, two additional sectionalizing devices with remote operational capability were installed on this circuit as part of the Smart Grid initiative.
- In 2015, the three phase portion of the line was infrared scanned prior to animal guarding.
- In 2015, a damaged midline switch was replaced and a set of load break disconnects was installed.
- In 2015, the WYOMISSING substation was animal guarded.
- In 2015, a difficult-to-access section of conductor will be relocated and rebuilt with covered conductor.
- In 2016, a disconnect switch on an underground dip on a main three phase line will be replaced.
- In 2016, an aging disconnect switch will be replaced.

44 Circuit 24603 -- VARDEN 46-03

Performance Analysis

The VARDEN 46-03 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 197 customers for up to 866 minutes resulting in 170,684 CMI.

On December 10, 2014, during a period of ice/sleet/snow, an equipment failure occurred on a substation component causing a recloser to trip to lockout. This outage affected 728 customers for up to 365 minutes resulting in 248,151 CMI.

In total, the VARDEN 46-03 circuit had 39 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (14); equipment failure (11); animal contacts (7); nothing found (4); other (3).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2014, a recloser was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2015, an existing recloser was automated as part of the Smart Grid initiative.
- In 2015, single phase fuses will be added in multiple locations.
- In 2016, reclosers will be installed on a section of two phase line.
- In 2018, a new tie line is planned between the HONESDALE 34-01, EAST CARBONDALE 12-01, and VARDEN 46-03 lines. The tie line will provide additional sectionalizing capabilities as well as balancing line load.

45 Circuit 26002 -- WEST DAMASCUS 60-02

Performance Analysis

The WEST DAMASCUS 60-02 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 108 customers for up to 1,056 minutes resulting in 114,006 CMI.

On April 8, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 228 customers for up to 451 minutes resulting in 102,672 CMI.

In total, the WEST DAMASCUS 60-02 circuit had 64 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (35); equipment failure (18); animal contacts (5); nothing found (3); vehicles (2); other (1).

Remedial Actions

- In 2015, a new sectionalizing device with remote operator control will replace an existing hydraulic recloser as part of the Smart Grid initiative.
- In 2015, single phase fusing will be installed in multiple locations.
- In 2015, a complete line inspection will be completed.
- In 2015, a project to reconductor three phase copper conductor will be completed.
- In 2015, voltage regulators will be added to the three phase line to support customer loads during peak demand.
- In 2016, a sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2018, a new substation will be built that will take part of the load off of the WEST DAMASCUS 60-02 circuit.
- In 2019, a new tie line is planned between the WEST DAMASCUS 60-01 and WEST DAMASCUS 60-02 circuits. This tie line will provide additional sectionalizing capabilities along with balancing line load.

46 Circuit 67401 -- WAKEFIELD 74-01

Performance Analysis

The WAKEFIELD 74-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead switch causing a recloser to trip to lockout. This outage affected 232 customers for up to 545 minutes resulting in 126,228 CMI.

On June 23, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a load break fuse to operate. This outage affected 99 customers for up to 1,398 minutes resulting in 138,341 CMI.

In total, the WAKEFIELD 74-01 circuit had 31 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (12); tree related (12); animal contacts (5); contact or dig in (1); other (1).

Remedial Actions

- In 2015, an additional single phase fuse will be installed.
- In 2015, a single phase recloser and several new load break disconnect switches will be installed.
- In 2015, a section of difficult-to-access single phase line will be relocated.
- In 2015, additional hot spot tree trimming will be evaluated.

- In 2015, a new tie line between the WAKEFIELD 74-01 and QUARRYVILLE 56-02 circuits will be evaluated.
- In 2017, full circuit tree trimming will be performed.

47 Circuit 10702 -- CATASAUQUA 07-02

Performance Analysis

The CATASAUQUA 07-02 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 30, 2015, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a recloser to trip to lockout. This outage affected 908 customers for up to 313 minutes resulting in 268,753 CMI.

In total, the CATASAUQUA 07-02 circuit had 19 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (8); equipment failure (5); animal contacts (3); vehicles (2); other (1).

Remedial Actions

- In 2015, full circuit tree trimming will be performed.
- In 2015, additional fusing will be evaluated for ten single phase locations, and several three phase locations.
- In 2017, several sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2017, a project is scheduled to provide a tie line to the CATASAUQUA 07-05 circuit.

48 Circuit 43201 -- MILLVILLE 32-01

Performance Analysis

The MILLVILLE 32-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of lightning, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 86 customers for up to 3,111 minutes resulting in 155,698 CMI.

In total, the MILLVILLE 32-01 circuit had 32 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (17); equipment failure (12); animal contacts (2); vehicles (1).

Remedial Actions

- In 2014, a project to build approximately 2,250 feet of new single phase and reconductor 2,600 feet of existing single phase was completed. More than 2,500 feet of difficult-to-access line was removed and a new single phase recloser was installed.
- In 2014, an existing recloser on a radial single phase tap was replaced to improve reliability.
- In 2016, an Expanded Operational Review is scheduled to be performed.
- In 2016, one mile section of difficult-to-access single phase will be relocated.
- In 2017, full circuit tree trimming will be performed.

49 Circuit 10705 -- CATASAUQUA 07-05

Performance Analysis

The CATASAUQUA 07-05 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 30, 2015, during a period of strong wind, a tree made contact with a pole or pole arm causing a circuit breaker to trip to lockout. This outage affected 2,616 customers for up to 156 minutes resulting in 384,734 CMI.

In total, the CATASAUQUA 07-05 circuit had 11 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (4); animal contacts (2); equipment failure (2); other (2); vehicles (1).

Remedial Actions

- In 2015, full circuit tree trimming will be performed.
- In 2015, 25 potential fusing locations will be evaluated.
- In 2016, three new sectionalizing devices with remote operational capability will be installed.
- In 2016, three new single phase reclosers will be installed.
- In 2017, two new single phase reclosers will be installed.
- In 2017, a new line and terminal will be installed at the CATASAUQUA Substation that will split the CATASAUQUA 07-05 line into two separate lines, reducing the customer count on the circuit. Additionally, the circuits will both receive sectionalizing devices with remote operational capability as part of the Smart Grid initiative, segregating them into 500 customer blocks.

50 Circuit 26001 -- WEST DAMASCUS 60-01

Performance Analysis

The WEST DAMASCUS 60-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On December 10, 2014, during a period of ice/sleet/snow, an equipment failure occurred on a substation component causing a circuit breaker to trip to lockout. This outage affected 1,377 customers for up to 139 minutes resulting in 191,664 CMI.

On March 26, 2015, during a period of heavy rain, an equipment failure occurred on a pole or pole arm causing a recloser to trip to lockout. This outage affected 349 customers for up to 413 minutes resulting in 143,969 CMI.

In total, the WEST DAMASCUS 60-01 circuit had 46 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (15); equipment failure (14); animal contacts (7); nothing found (7); contact or dig in (1); other (1); vehicles (1).

Remedial Actions

- In 2015, the WEST DAMASCUS 60-01 to INDIAN ORCHARD 64-01 manual tie switch was replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, three sections of difficult-to-access three phase line will be relocated.
- In 2018, a new tie line is planned between the WEST DAMASCUS 60-01 and WEST DAMASCUS 60-02 circuits. This project will improve sectionalizing capabilities between the circuits, reducing outage durations in the future.
- In 2018, a new line and terminal is planned.

51 Circuit 26703 -- HEMLOCK FARMS 67-03

Performance Analysis

The HEMLOCK FARMS 67-03 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On May 16, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 369 customers for up to 886 minutes resulting in 230,252 CMI.

In total, the HEMLOCK FARMS 67-03 circuit had 51 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (23); animal contacts (15); nothing found (7); equipment failure (5); other (1).

Remedial Actions

- In 2015, single phase fusing will be installed at multiple locations.
- In 2015, a full line inspection will be completed.
- In 2015, full circuit tree trimming will be performed.
- In 2015, a section of difficult-to-access single phase line will be relocated.

52 Circuit 52402 -- GREEN PARK 24-02

Performance Analysis

The GREEN PARK 24-02 circuit experienced no outages of over 100,000 CMI between July 2014 and June 2015.

In total, the GREEN PARK 24-02 circuit had 51 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (18); equipment failure (17); animal contacts (9); nothing found (6); vehicles (1).

Remedial Actions

- In 2014, the GREEN PARK 24-02 getaway was restructured to alleviate cold load pick up concerns.
- In 2014, two vintage oil circuit reclosers were replaced with new sectionalizing devices with remote operational capability as part of the Smart Grid initiative.
- In 2015, a roughly 4,000 foot single phase extension will transfer CEMI customers to an adjacent circuit.
- In 2015, hot spot tree trimming is being investigated for a seven mile section of the line.
- In 2015, additional fusing will be evaluated for several single phase taps.
- In 2016, full circuit tree trimming will be performed.
- In 2017, a three mile tie line will be constructed to provide customers with an alternate source for sectionalizing during cases of trouble.

53 Circuit 45801 -- HEGINS 58-01

Performance Analysis

The HEGINS 58-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 3, 2014, during a period of strong wind, an unidentified issue occurred with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,613 customers for up to 605 minutes resulting in 179,857 CMI.

On September 6, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 275 customers for up to 1,385 minutes resulting in 142,780 CMI.

In total, the HEGINS 58-01 circuit had 59 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (22); equipment failure (13); nothing found (8); other (7); animal contacts (6); vehicles (3).

Remedial Actions

- In 2014, additional fuses were installed at seven locations.
- In 2014, equipment on the transmission line feeding the HEGINS substation was replaced after an equipment failure caused an outage at the HEGINS substation.
- In 2014, a hydraulic recloser on the HEGINS 58-01 line was replaced by a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2015, full circuit tree trimming will be completed.
- In 2015, several spans of copper conductor will be reconducted. Difficult-to-access sections of the line will be relocated as part of this project.
- In 2015, hot spot tree trimming was completed and the circuit will be fully trimmed.
- In 2015, motor operated load-break air break switches were installed on the transmission line feeding the HEGINS 58-01 line.
- In 2015, two fuses will be upgraded to single phase reclosers.
- In 2015, two new sectionalizing devices with remote operational will be installed as part of the Smart Grid initiative.
- In 2015, a project to install solid blade disconnects and fault indicators is being investigated for portions of the line.
- In 2015, solid blade fusing will be installed.
- In 2016, a project to reconductor the tie line between the HEGINS 58-01 line and the HEGINS 58-02 line will be completed to support the transfer of load between the circuits
- In 2016, two new sectionalizing devices with remote operational capability will be installed as part of the Smart Grid initiative.

54 Circuit 13704 -- SCHNECKSVILLE 37-04

Performance Analysis

The SCHNECKSVILLE 37-04 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead fuse causing a recloser to trip to lockout. This outage affected 109 customers for up to 1,263 minutes resulting in 117,948 CMI.

On September 6, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 1,591 customers for up to 690 minutes resulting in 243,610 CMI.

In total, the SCHNECKSVILLE 37-04 circuit had 38 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (14); equipment failure (13); animal contacts (6); other (2); contact or dig in (1); nothing found (1); vehicles (1).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2014, two single phase relocation projects were completed, moving difficult-to-access line out of heavily forested areas.
- In 2014, a new sectionalizing device with remote operational capability was installed on this circuit as part of the Smart Grid initiative.
- In 2015, two new single phase fuses will be installed.
- In 2015, a project to investigate relocating several sections of single phase line to avoid outage risk will be investigated.
- In 2018, a new three-phase tie line will be completed. The tie line will connect the SCHNECKSVILLE 37-04 to the SOUTH SLATINGTON 44-03 circuit.

55 Circuit 16801 -- WAGNERS 68-01

Performance Analysis

The WAGNERS 68-01 circuit experienced two outages of over 100,000 CMI between July 2014 and June 2015.

On October 15, 2014, during a period of heavy rain, an equipment failure occurred causing a circuit breaker to trip to lockout. This outage affected 1,598 customers for up to 103 minutes resulting in 165,632 CMI.

On June 27, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,609 customers for up to 247 minutes resulting in 232,453 CMI.

In total, the WAGNERS 68-01 circuit had 24 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (12); equipment failure (8); nothing found (2); other (1); vehicles (1).

Remedial Actions

- In 2015, single phase fuses will be added in multiple locations.
- In 2015, an existing sectionalizing device will be reprogrammed to act as a protective device.
- In 2015, a project to create a tie line between the LAKE NAOMI 86-03 and WAGNERS 68-01 lines will be investigated. This tie will provide additional sectionalizing capabilities along with the ability to better balance line load.

56 Circuit 60605 -- NORTH COLUMBIA 06-05

Performance Analysis

The NORTH COLUMBIA 06-05 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of strong wind, a tree made contact with an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 1,396 customers for up to 349 minutes resulting in 488,320 CMI.

In total, the NORTH COLUMBIA 06-05 circuit had 14 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (7); equipment failure (5); animal contacts (1); vehicles (1).

Remedial Actions

- In 2014, an Expanded Operational Review was performed on this circuit.
- In 2015, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid Initiative.
- In 2015, a project to install three phase fusing on a single customer tap will be investigated.
- In 2016, an existing sectionalizing device on a three phase tap will be replaced with a sectionalizing device with remote operational capability as part of the Smart Grid initiative.
- In 2017, full circuit tree trimming will be performed.

57 Circuit 28302 -- NEWFOUNDLAND 83-02

Performance Analysis

The NEWFOUNDLAND 83-02 circuit experienced no outages of over 100,000 CMI between July 2014 and June 2015.

In total, the NEWFOUNDLAND 83-02 circuit had 56 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (33); equipment failure (11); animal contacts (7); nothing found (2); other (2); vehicles (1).

Remedial Actions

- In 2015, single phase fuses will be added in multiple locations.
- In 2015, full circuit tree trimming will be performed.
- In 2015, relocating a section of single phase line to a more accessible location will be investigated.
- In 2015, a new substation will be built which will relieve the NEWFOUNDLAND 83-02 circuit of some of its load.

58 Circuit 16204 -- POCONO FARMS 62-04

Performance Analysis

The POCONO FARMS 62-04 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On June 27, 2015, during a period of strong wind, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 962 customers for up to 492 minutes resulting in 472,659 CMI.

In total, the POCONO FARMS 62-04 circuit had 14 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (7); tree related (4); animal contacts (2); nothing found (1).

Remedial Actions

- In 2014, full circuit tree trimming was performed.
- In 2015, single phase fuses will be added in multiple locations.
- In 2015, a project to replace a single recloser with two reclosers on separate taps will be investigated. This will provide additional sectionalizing capability.
- In 2016, a line inspection will be performed.

59 Circuit 40101 -- HUNTER 01-01

Performance Analysis

The HUNTER 01-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On January 7, 2015, during a period of strong wind, an equipment failure occurred on an overhead conductor causing a circuit breaker to trip to lockout. This outage affected 2,132 customers for up to 315 minutes resulting in 415,858 CMI.

In total, the HUNTER 01-01 circuit had 29 outages between July 2014 and June 2015, with the causes breaking down as follows: tree related (15); equipment failure (7); animal contacts (5); nothing found (1); other (1).

Remedial Actions

- In 2014, two new sectionalizing devices with remote operational capability were installed as part of the Smart Grid initiative.
- In 2015, several poles were identified for replacement.
- In 2015, areas to install additional fusing will be investigated.
- In 2015, a project to provide an additional tie line for the HUNTER 01-01 circuit will be investigated.
- In 2015, a project to rebuild the HUNTER 01-01 substation will be investigated.

60 Circuit 41901 -- REED 19-01

Performance Analysis

The REED 19-01 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On July 8, 2014, during a period of heavy rain, a tree made contact with an overhead conductor causing a recloser to trip to lockout. This outage affected 408 customers for up to 657 minutes resulting in 267,750 CMI.

In total, the REED 19-01 circuit had 19 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (6); tree related (5); animal contacts (4); vehicles (2); nothing found (1); other (1).

Remedial Actions

- In 2015, a new sectionalizing device with remote operational capability will be installed as part of the Smart Grid initiative.
- In 2015, a tie line between the REED 19-01 and the HAMILTON 44-03 circuits will be investigated to improve sectionalizing capability.
- In 2016, comprehensive tree trimming will be completed on the REED 19-01 circuit.

61 Circuit 62104 – EAST LANCASTER 21-04

Performance Analysis

The EAST LANCASTER 21-04 circuit experienced one outage of over 100,000 CMI between July 2014 and June 2015.

On October 7, 2014, during a period of heavy rain, an equipment failure occurred on an overhead conductor causing a recloser to trip to lockout. This outage affected 4,055 customers for up to 188 minutes resulting in 481,935 CMI.

In total, the EAST LANCASTER 21-04 circuit had 15 outages between July 2014 and June 2015, with the causes breaking down as follows: equipment failure (8); vehicles (2); tree related (1); animal contacts (1); other (3).

Remedial Actions

- In 2014, an infrared inspection was performed on the entire line. A crimp was identified as a potential hot spot and was replaced.
- In 2014, a line inspection was conducted on the three phase line and three minor issues were found and addressed.
- In 2014, all aluminum on copper crimps were replaced on the three phase line.
- In 2015, four manual switches were replaced with remotely operable sectionalizing devices as part of the Smart Grid initiative.
- In 2016, full circuit tree trimming will be performed.
- In 2018, a new line and terminal will be installed to reduce customer count on the circuit.

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. The top three causes (Equipment Failures, Tree Related, and Animals), which are based on the percent of cases of trouble, are highlighted in the table. PPL Electric's maintenance programs focus on corrective actions to address controllable service interruptions (e.g., trees and equipment failure).

Cause Description	Trouble Cases ⁷	Percent of Trouble Cases	Customer Interruptions ⁸	Percent of Customer Interruptions	Customer Minutes	Percent of Customer Minutes
Animals	2,908	18.3%	41,066	3.7%	3,246,119	1.9%
Contact / Dig-In	146	0.9%	8,676	0.8%	702,512	0.4%
Directed by Non-PPL Authority	186	1.2%	11,341	1.0%	846,499	0.5%
Equipment Failures	5,149	32.4%	357,575	32.4%	45,431,351	26.6%
Improper Design	1	0.0%	3	0.0%	1,262	0.0%
Improper Installation	8	0.1%	2,615	0.2%	107,934	0.1%
Improper Operation	4	0.0%	4,449	0.4%	405,838	0.2%
Nothing Found	1,211	7.6%	75,239	6.8%	7,905,267	4.6%
Other Controllable	94	0.6%	39,670	3.6%	1,340,385	0.8%
Other Non Control	251	1.6%	46,833	4.2%	4,523,841	2.7%
Other Public	54	0.3%	9,397	0.9%	855,326	0.5%
Tree Related	5,184	32.7%	382,020	34.6%	93,351,225	54.7%
Vehicles	679	4.3%	123,917	11.2%	11,945,862	7.0%
Total	15,875	100.0%	1,102,801	100.0%	170,663,421	100.0%

⁷ Cases of trouble are the number of sustained customer service interruptions (i.e., service outages).

⁸ 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.

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 48% of cases, 58% of customer interruptions, and 75% of CMI.

Tree Related: PPL Electric has recently increased funding to more aggressively address outside of the right-of-way danger trees. For trees within the right-of-way, PPL Electric has implemented a more aggressive trimming strategy. We are in year three of a five year cycle for the new standard.

Animals: Animals accounted for about 18% of PPL Electric's cases of trouble. Although this represents a significant number of cases, the effect on SAIFI and CAIDI is small because approximately 79% 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 substations are scheduled to be animal guarded by 2017.

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. Service interruptions due to vehicles are on the rise as a result of an increasing number of drivers and vehicles on the road. 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 44% of the cases of trouble, 50% of the customer interruptions and 57% 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	2nd Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
Transmission					
Transmission C-tag poles (# of poles)	324	129	113	162	113
Transmission arm replacements (# of sets)	23	14	14	14	14
Transmission air break switch inspections (# of switches)	13	0	4	0	4
Transmission lightning arrester installations (# of sets)	5,484	2,228	2,567	3,698	3,820
Transmission structure inspections (# of structures)	1,900	0	0	0	0
Transmission tree side trim-Bulk Power (linear feet)	N/A				
Transmission herbicide-Bulk Power (# of acres)	N/A				
Transmission reclearing (# of miles) BES Only	625	260	96	467	470
Transmission reclearing (# of miles) 69 kV	974	242	307	385	437
Transmission reclearing (# of miles) 138 kV	336	93	34	171	152
Transmission danger tree removals-Bulk Power (# of trees)	N/A	N/A	6,289	N/A	12,279
Substation					
Substation batteries (# of activities)	652	65	67	482	483
Circuit breakers (# of activities)	582	142	80	287	215
Substation inspections (# of activities)	4,326	1,077	1,073	2,426	2,431
Transformer maintenance (# of activities)	1,353	371	353	737	694
Distribution					
Distribution C-tag poles replaced (# of poles)	1,234	474	473	749	692
C-truss distribution poles (# of poles)	5,625	1,499	1,459	2,193	2,224
Capacitor (MVAR added)	0	0	0	0	0
OCR replacements (# of) ⁹	106	29	29	96	102
Distribution pole inspections (# of poles)	113,820	31,107	29,915	57,463	57,843
Distribution line inspections (hours)	8,820	1,815	2,343	4,474	3,815
Group re-lamping (# of lamps)	15,073	8,065	7,626	8,565	7,626
Test sections of underground distribution cable	698	222	222	320	320
Distribution tree trimming (# of miles)	6,165	1,625	1,551	3,099	2,877
Distribution herbicide (# of acres)	N/A	N/A	0	N/A	0
Distribution >18" removals within R/W (# of trees)	N/A	N/A	0	N/A	0
Distribution hazard tree removals outside R/W (# of trees)	N/A	N/A	4,073	N/A	6,883
LTN manhole inspections (# of)	313	90	61	237	209

⁹ On 12/3/2013 PPL Electric notified the PUC of its plan to replace all three-phase oil circuit reclosers with vacuum devices over a 10 year cycle.

Inspection & Maintenance Goals/Objectives	Annual Budget	2nd Quarter		Year-to-date	
		Budget	Actual	Budget	Actual
LTN vault inspections (# of)	714	197	173	393	378
LTN network protector overhauls (# of)	75	19	10	37	30
LTN reverse power trip testing (# of) ¹⁰	49	25	24	35	34

¹⁰ A best practice benchmarking review found that PPL Electric was performing more testing than was cost effective. Future testing will be performed in accordance with industry best practices.

- 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. (For first, second and third quarter reports only.)*

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	2nd Quarter		Year-to-date	
	Budget (\$000)	Actual (\$000)	Budget (\$000)	Actual (\$000)
Provide Electric Service	1,902	2,174	3,794	3,778
Vegetation Management	14,958	14,323	27,427	24,703
Customer Response	19,019	14,738	33,165	26,693
Reliability Maintenance	14,210	14,829	27,783	27,952
System Upgrade	176	250	308	332
Customer Service/Accounts	30,899	29,411	61,005	58,643
Others	9,058	18,147	17,294	25,020
Total O&M Expenses	90,222	93,872	170,776	167,121

- 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. (For first, second and third quarter reports only.)*

The following table provides the capital expenditures for PPL Electric, as a whole, which includes transmission and distribution ("T&D") activities.

	2nd Quarter		Year-to-date	
	Budget (\$1,000s)	Actual (\$1,000s)	Budget (\$1,000s)	Actual (\$1,000s)
New Service/Revenue	18,010	20,694	37,320	43,473
System Upgrade	142,899	124,366	276,113	235,733
Reliability & Maintenance	119,805	117,968	217,138	207,416
Customer Response	2,652	1,837	4,023	3,081
Other	5,974	5,016	16,393	12,642
Total	289,339	269,881	550,986	502,344

9) *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 (T&D)	
Lineman Leader	66
Journeyman Lineman	235
Journeyman Lineman-Trainee	24
Helper	28
Groundhand	4
Troubleman	49
T&D Total	406
Electrical	
Elect Leaders-UG	5
Elect Leaders-Net	9
Elect Leaders-Sub	23
Journeyman Elect-UG	22
Journeyman Elect-Net	25
Journeyman Elect-Sub	55
Journeyman Elect Trainee-UG	2
Journeyman Elect Trainee-Net	10
Journeyman Elect Trainee-Sub	16
Helper	15
Laborer-Network	0
Laborer-Substation	0
Electrical Total	182
Overall Total	588

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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.

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PPL Electric Utilities Corporation
Job Descriptions

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Transmission and Distribution

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

Electrical

Appendix B

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

Appendix B