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#### FEDERAL EXPRESS

January 28, 2011

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

Re:

PPL Electric Utilities Corporation Quarterly Reliability Report for the Period Ended December 31, 2010 Docket No. L-00030161

Dear Ms. Chiavetta:

Enclosed for filing on behalf of PPL Electric Utilities Corporation ("PPL Electric") are an original and five (5) copies of PPL Electric's Quarterly Reliability Report for the Period Ended December 31, 2010. 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 the Commission's Final Rulemaking Order adopted May 7, 2004 in the above-captioned docket.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on January 28, 2011, 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 Joseph M. Kleha, PPL Electric's Manager-Regulatory Compliance and Rates at (610) 774-4486.

Very truly yours

Paul E. Russell

**Enclosures** 

cc: Mr. Darren Gill

Mr. Daniel Searfoorce

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PA PUBLIC UTILITY COMMISSION SELEMETARY'S BUREAU



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

January 2011



JAN 28 2011

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 events during this quarter that met the criteria for a major event.

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 ended December 31, 2010.

SAIFI (Benchmark = 0.98; Rolling 12-month Std. = 1.18)	1.087
CAIDI (Benchmark = 145; Rolling 12-month Std. = 174)	135
SAIDI (Benchmark = 142; Rolling 12-month Std. = 205)	147
MAIFI <sup>1</sup>	4.690
Average Number of Customers Served <sup>2</sup>	1,388,192
Number of Sustained Customer Interruptions (Trouble Cases)	20,080
Number of Customers Affected <sup>3</sup>	1,508,318
Customer Minutes of Interruptions	203,963,538
Number of Customer Momentary Interruptions	6,510,312

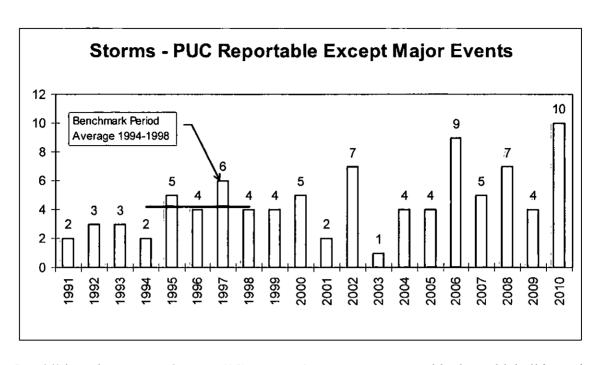
During the 4th quarter, there was one (1) PUC-reportable storm ( $\geq 2,500$  customers interrupted for  $\geq 6$  hours) and five (5) other storms that required the opening of one or more area emergency centers to manage restoration efforts. Current storm experience remains high compared to historical norms.

Specifically, during the 12-month reporting period, there were ten (10) PUC-reportable storms ( $\geq 2,500$  customers interrupted for  $\geq 6$  hours) other than major events.

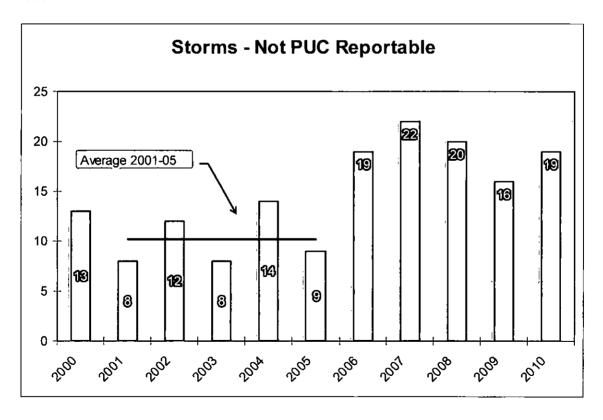
<sup>&</sup>lt;sup>1</sup> MAIFI data is obtained at the substation breaker and does not include momentary interruptions at lower level devices.

<sup>&</sup>lt;sup>2</sup> 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.

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



In addition, there were nineteen (19) storms that were not reportable, but which did require the opening of one or more area emergency centers to manage restoration efforts. This is 86% higher than the average of 10.2 storms per year for the five years from 2001 through 2005.



3) Rolling 12-month reliability index values (SAIFI, CAIDI, SAIDI, 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	SAIFI	CAIDI	SAIDI	MAIFI <sup>4</sup>	Customers	Cases of Trouble <sup>5</sup>	Customer Minutes Interrupted	СРІ
1	10803	12.28	259	3,182	11.00	65	11	206,833	1967
2	43202	6.71	275	1,846	0.00	2110	67	3,894,094	1375
3	22602	6.36	210	1,335	6.06	1520	67	2,028,741	1199
4	22002	4.61	342	1,574	0.00	1391	81	2,190,049	1155
5	60904	5.01	171	858	3.94	1897	18	1,628,459	988
6	17001	3.99	441	1,759	6.50	1508	78	2,652,326	973
7	13704	5.92	110	652	6.07	1579	62	1,028,932	923
8	27101	5.37	140	754	1.05	2694	90	2,030,429	887
9	13701	5.53	97	538	4.89	1610	20	865,879	833
10	25601	4.91	98	481	19.00	2190	56	1,053,288	803
11	10903	4.22	126	534	3.00	2021	48	1,079,851	778
12	66002	5.10	81	413	0.00	587	13	242,159	778
13	17902	5.91	49	289	5.04	981	39	283,459	768
14	22901	6.28	37	235	5.09	2218	17	521,828	762
15	60604	4.67	86	401	4.01	333	14	133,652	743
16	26001	4.46	180	805	0.01	1340	77	1,078,061	<u>7</u> 42
17	17002	3.50	348	1,218	8.02	1279	41	1,558,449	739
18	13603	2.51	548	1,374	6.00	538	11	739,446	708
19	47401	3.25	180	585	5.05	1324	25	774,462	667
20	26002	3.81	202	770	1.03	1190	73	915,836	663
21	10901	3.37	283	953	9.99	682	33	649,886	660
22	28001	3.57	140	501	3.02	1770	98	886,347	656
23	54701	3.89	132	516	8.74	1852	63	955,350	655
24	11001	5.01	86	433	5.55	864	49	374,425	650
25	26103	3.97	66	261	8.99	1937	16	505,323	647
26	63201	3.21	333	1,067	12.02	1638	32	1,748,399	646
27	47704	2.89	331	958	6.01	726	43	695,432	642
28	14404	4.20	114	479	7.08	1540	34	737,764	623

<sup>&</sup>lt;sup>4</sup> MAIFI data is obtained at the substation breaker and does not include momentary interruptions at lower level devices.

<sup>&</sup>lt;sup>5</sup> Cases of trouble are the number of sustained customer service interruptions.

WPC Rank	Feeder ID	SAIFI	CAIDI	SAIDI	MAIFI <sup>4</sup>	Customers	Cases of Trouble <sup>5</sup>	Customer Minutes Interrupted	СРІ
29	13905	4.32	137	590	4.04	1556	35	918,743	605
30	18501	3.78	133	502	1.00	1722	52	864,908	587
31	18502	4.46	96	427	1.00	1825	103	779,946	585
32	44101	3.00	329	986	0.00	34	6	33,540	576
33	16402	4.26	101	429	11.20	992	53	425,807	569
34	64701	1.67	735	1,225	7.00	1561	7	1,912,164	563
35	67201	3.63	113	410	23.00	796	23	326,598	559
36	42401	2.25	297	667	0.00	733	18	488,868	558
37	47801	2.06	107	220	4.02	1571	7	345,801	548
38	47703	3.99	79	314	5.99	1364	49	428,266	544
39	64802	2.90	204	591	0.00	1276	49	753,971	541
40	20601	3.06	197	603	2.00	1428	44	860,679	520
41	64202	3.89	100	387	8.98	1019	35	393,943	513
42	66203	3.63	45	164	9.98	959	16	156,924	512
43	47707	3.27	122	399	6.02	1991	62	793,432	502
44	28302	3.74	128	478	10.04	2824	100	1,349,539	498
45	41503	3.35	254	851	3.00	1422	10	1,209,707	487
46	15704	4.00	75	301	10.02	1273	46	382,861	478
47	22406	6.20	126	778	5.05	943	19	733,237	469
48	46701	3.21	219	703	2.99	708	16	497,401	468
49	40802	9.34	137	1,284	4.01	986	6	1,265,985	465
50	12701	3.02	155	467	9.98	1525	61	712,008	461
51	67402	2.62	198	518	15.07	1326	48	686,804	459
52	12501	2.93	124	363	4.97	1557	6	564,535	454
53	12303	0.00	564	2	0.00	317	1	564	454
54	60301	2.93	219	640	5.04	1496	32	958,178	453
55	63403	2.94	273	804	5.00	876	22	704,307	450
56	44903	3.88	92	356	17.92	1461	20	520,357	450

PPL Electric's Circuit Performance Index ("CPI") is derived from the frequency and duration of service interruptions that occurred during the specified time period. Improving a circuit's CPI depends upon reducing either the service interruption frequency or the duration of interruptions, or both. When a new circuit appears among the 5% worst performing, the first step undertaken is to perform a "circuit outage data analysis." This consists of analyzing the actual service interruptions which occurred during the time span to determine if there are causal patterns or geographic patterns for which corrective actions are feasible that would improve the circuit's CPI.

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

Rank Action	Status	Due/Comple	ete Result	
1 Circuit ID: 10803 CHERRY HILL 08-03			Location: Bethlehem	CPI: 1967
11/30/2010: Create Tie capability	Scheduled for	11/30/2012		
7/9/2008: Line inspection-equipment. Inspect line and make repairs.	Completed	12/31/2009	Crews replaced several cut outs and lightning arrestors, redurisk.	
4/13/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	5/31/2009		
7/13/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	8/31/2010	This circuit had several long duration outages. circuit in the past year have affected under 100 been due to tree related issues and equipment	customers. Outages have

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unk Action	Status	Due/Comple	te Result	
2 Circuit ID: 43202 MILLVILLE 32-02			Location: Sunbury	CPI: 1375
4/3/2007: Perform line maintenance identified by line inspection.	Completed	1/30/2009	Reduced outage risk.	
1/16/2009: Expanded Operational Review.	Completed	12/31/2009	No longer among 5% worst performing circ have thermovision in spection in the first qu terminal will be added at substation by the TS is reviewing a major project to tie Millvil Substations in the future.	arter of 2010. New line 3rd quarter of 2010. SD and
6/7/2010: Install 1 phase OCR(s).	Scheduled for	7/31/2011		
6/7/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	6/7 <i>/</i> 2010	Inconclusive. Monitor future performance. Susquehanna Region's WPC meeting on 6 categorized as a worst performer due to the experiencing more than 3 outages within the causes of each of the high customer outage right of way tree, customer equipment, and The line will be monitored for future issues	67/10. This circuit is e number of customers to 12 month period. The es have been mitigated (off I substation CB maintainence).
6/7/2010: Tree trimming-selected line segments only (hat spots).	Completed	6/10/2010	Reduced outage risk.	
6/7/2010: Perform line maintenance identified by line inspection.	Completed	6/7/2010	Reduced outage risk.	
6/7/2010: As a result of high customer outages 32-2 CB was maintained.	Completed	6/7 <i>/</i> 2010	Reduced outage duration.	
8/26/2010: Install tie. A project was placed into the budget to create a tie between Benton 34-1 and Millville 32-2, and a 12 kV tie between Millville 32-2 and Hughesville 70-1. This will enhance the reliability of all three circuits by providing additional operating flexibility through use of remotely operated interupting and switching devices. The project expects to save approximately 0.3 system SAIDI minutes. This project is scheduled to go in service in 5/2013.	Scheduled for	5/31/2013		

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Rank	Action		Status	Due/Comple	te Result	
3 Cir	cuit ID: 22602	KIMBLES 26-02			Location: Pocono	CPI: 1199
7135		ocating poles 71347N49205 and ase poles recieved vehicle hits in er outages.	Completed	4/27/2009	Inconclusive. Monitor future performance. Relocation for future pole hits.	cation is possible, will
	/2009: Circuit outage eding qtr. list.	data analysis - WPC not on	Completed	2/28/2009	Three breaker outages in 2008 caused by two virelated outage significantly contributed to the CF Customers experiencing more than 3 outages with the CPI.	Pl for this circuit.
	/2010: Circuit outage eding qtr. list,	data analysis - WPC not on	Completed	3/31/2010	High CPI of this circuit is because of 2 large OC trees outside of the right-of-way and a transmiss switch (the switch was replaced).	
		e data analysis - WPC not on ot tree trimming has been completed.	Completed	9/30/2010	Inconclusive, Monitor future performance.	
	5/2010: Circuit outage tified and line patrol se	e data analysis. Problematic areas cheduled.	Completed	12/31/2010	Reduced outage risk. Tree problems identified completed.	and tree trimming was
10/1	5/2010: Improve sect	ionalizing capability.	In progress	3/31/2011		
4 Cir	cuit ID: 22002	<b>BOHEMIA 20-02</b>			Location: Pocono	CPI: 1155
	/2010: Circuit outage eding qtr. list.	data analysis - WPC not on	Completed	3/31/2010	A tree outage on 12/3/09, not related to trimming affecting 89 customers. An outage on 12/29/09 on the transmission source (Blooming Grove-Washemia resulted in 1389 Bohemia customers blours.	caused by a failed switch est Damascus line) to
	/2010: Install tie, SP Lakes 81-2	33608 build tie from Bohemia 20-2 to	Scheduled for	11/30/2012		
5 Cir	rcuit ID: 60904	DONEGAL 09-04			Location: Lancaster	CPI: 988
	/2010: Circuit outage eding qtr. list.	data analysis - WPC not on	Completed	5/31/2010	Inconclusive. Monitor future performance. SAID score. The majority of the outages were due to related. The circuit was lasted trimmed in 2003 contributed the greatest to the CMI occurred on storm, causing trees to fall into the primary electione outage was 490,871, or 63% of the total over	trees, not trimming The outage that 6/24 due to a severe wind tric lines. The CMI for that
	/2010: Line inspection ormed on 2 & 3 phase	n-equipment. Line Inspection to be line sections	Completed	5/19/2010	Multiple WR's initiated for follow-up work	
inspe	ection. WR's 584318	naintenance identified by line (Pole), 584319 (Arms) and 584322 a result of Line Inspection	Completed	10/13/2010	Reduced outage risk.	
reco		ne. WR 587967 initiated to g double circuit section of Donegal	Scheduled for	12/30/2011	Reduced outage risk.	

ank	Action	Status	Due/Comple	te Result	
6 Circ	cuit ID: 17001 RIDGE ROAD 70-01			Location: Bethlehem	CPI: 97
1/4/20	008: Improve sectionalizing capability.	Completed	9/30/2009	Reduced customer count affected by each outag	je.
	2009: Circuit outage data analysis - WPC not on iding qtr. list.	Completed	2/28/2009	This circuit experienced several long-duration tree. The circuit was trimmed during the following sum	
	2009: Circuit outage data analysis - WPC not on ading qtr. list.	Completed	11/12/2009	Inconclusive. Monitor future performance. The of the greatest contributor to the CPI. The primary was trees from outside of trimming right of way.	
	2010: Circuit outage data analysis - WPC not on ding qtr. list.	Completed	5/31/2010	The SAIDI component was the greatest contributed the contribution of the contribution	sircuit breaker being 1,162,010 CMI. Outages
	2010: Reconductor line. Reconductor a single phase on of line serving 74 CEMI customers with tree wire.	Scheduled for	12/31/2011		
and F	2010: Install tie. Build a tie between Ridge Road 70-1 Richland 36-6 to create an auto transfer scheme to ate the effects of breaker operations.	Scheduled for	12/31/2011		
	2010: Install animal guard(s). Install animal guards on a on of the line with significant animal outage history.	Completed	9/10/2010	Reduced outage risk.	
8/20/	2010: Create tie with Blooming Glen 06-1 line	Scheduled for	12/31/2011		
Circ	cuit ID: 13704 SCHNECKSVILLE 37-0	)4		Location: Lehigh	CPI: 92
5/14/	2008: Load balancing.	Completed	9/30/2009	Reduced outage risk.	
	2009: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	4/16/2009	Two breaker outages in the past year. Additional many of the customers to see more than three of failures are the leading cause of outages on this	outages. Equipment
	/2010: Circuit outage data analysis - WPC not on ding qtr. list.	Completed	11/30/2010	The aerial cable getaway for this circuit failed tw getaway was replaced. Two additional OCR out contact and trees outside the right of way cause customers to experience over three outages this	ages, due to a vehicle d approximately 600

Rank	Action	Status	Due/Comple	te Result	
8 (	Circuit ID: 27101 GREENFIELD 71-01			Location: Scranton	CPI: 88
	/9/2009: Circuit outage data analysis - WPC not on preceding tr. list.	Completed	11/30/2009	Inconclusive. Monitor future performance. At Q3 2009 due to an animal contact at the substarge OCR outages, 2 of which were caused by and one of which was caused by a failed insuf	tation. There have been 3 y trees outside the ROW
	/14/2010: Relocate inaccessible line. Investigate relocating naccessible 3 phase section of line.	Completed	3/31/2010	Could not justify project due to lack of outages inaccessible line.	on the section of
1,	/28/2011: Tree trimming.	Completed	12/30/2010	Reduced outage risk. This line was complete	y trimmed in 2010.
	/28/2011: Improve sectionalizing capability. Intall equipment of allow remote operation of switches and OCRs	Completed	12/17/2010	Reduced outage duration. All three phase sw updgraded to allow remote operation.	tiches and OCRs were
	/28/2011: Install tie. A tie for 1350 radial custromers is urrently being engineered by the field personnel.	Scheduled for	3/31/2011		
9 (	Circuit ID: 13701 SCHNECKSVILLE 37-0	1		Location: Lehigh	CPI: 83
4,	/15/2009: Install animal guard(s).	Completed	5/15/2009	Reduced outage risk.	
10	0/8/2008: Load balancing.	Canceled	9/15/2010		
	/14/2011: Circuit outage data analysis - WPC not on receding qtr. list.	Scheduled for	2/18/2011		
0 C	Circuit ID: 25601 ARROWHEAD 56-01			Location: Wilkes-Barre	CPI: 80
	/13/2009: Circuit outage data analysis - WPC not on receding qtr. list.	Completed	2/28/2009	The circuit is on the list this quarter due to the 36% and the greater than three outages contributed CPI. A large majority of the outages were the circuit was trimmed in 2008. We will conticulosely.	bution being 36% of the a caused by trees just befor
V	/10/2009: Expanded Operational Review. /otage profile complete 5/5/09. îeld review complete 5/15/09.	Completed	5/26/2009	Reduced customer count affected by each ou	age.
5/	/13/2009: Relocate inaccessible line.	Completed	9/15/2009	Reduced outage duration.	
5	/26/2009: Install fuse(s).	Completed	9/2/2009	Reduced customer count affected by each out	age.
	/14/2011: Circuit outage data analysis - WPC not on receding qtr. list.	Scheduled for	2/18/2011		

Rank	Action	Status	Due/Comple	te Result		
l1 Cir	cuit ID: 10903 COOPERSBURG 09-03			Location: Bethlehem	CPI:	778
	/2010: Load balancing. Balance load to provide better sferability.	Completed	8/30/2010	Inconclusive. Monitor future performance.	·	
	/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	8/30/2010	The CEMI>3 component was the greatest contrib breaker outages have occurred in the past 12 morelated outages. A transmission interruption, anii equipment failure have also each contributed to a	nths, including two mal contact, and	
line	J/2010: Circuit outage data analysis. Review for possible protection addition to limit the number of customers cted by an interruption.	Completed	7/30/2010	Inconclusive. Monitor future performance.		
	/2010: Increase tie capability: an additional tie with Lanark is planned	Scheduled for	12/31/2011			
l <b>2 C</b> ir	rcuit ID: 66002 RHEEMS 60-02			Location: Lancaster	CPI:	778
	2011: Expanded Operational Review. Reliabilty Analysis apleted 5/19/10	Completed	12/31/2010	Reduced outage duration.		
Relia	ability work requests under field review					
	2011: Improve sectionalizing capability. Add remote rating control capability to an existing switch	Scheduled for	12/31/2012			
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011			
	72011: Line inspection-equipment. Perform Line ection on 2 and 3 Phase Line Sections - 5.8 miles	Completed	5/21/2010	Reduced outage risk.		
	72011: Perform line maintenance identified by line ection. WR 584932, 584933, 584934, 585935	Completed	12/31/2010	The line maintenance work that was identified an replacement of 4 failed crossarms, the moving of vulnerable location, the replacement of a damage a service entrance cable. All of these repairs will risks.	a pole to a less ad pole and the repa	airs to
13 Cir	cuit ID: 17902 BARTONSVILLE 79-02			Location: Pocono	CPI:	768
	1/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	11/30/2010	Five circuit breaker outages contributed to the hig were caused by transmission outages, one was a ROW, one pole hit, and one animal contact.		

Ran.	k Action	Status	Due/Comple	te Result		
14 (	Circuit ID: 22901 HARWOOD 29-01			Location: Central	CPI:	762
	7/13/2010: Expanded Operational Review. Completed voltage profile and field review.	Completed	12/31/2010	Inconclusive. Monitor future performance.		
1	7/13/2010: Circuit outage data analysis - WPC not on preceding qtr. list. Determined that outages were caused by multiple acts of vandalism. Planned action to install a VCR in order to isolate the interruptions to a limited amount of customers until further actions could be planned.	Completed	11/30/2010	A VCR was installed at a location that isolated the viline. there are further plans to move line out of inactions.	•	tion of
•	11/16/2010: Line inspection-equipment. Inspect anchor guys.	Completed	12/31/2010	Reduced outage risk. Identified at risk anchor guys	and replaced the	∍m.
15 (	Circuit ID: 60604 NORTH COLUMBIA 06-	04		Location: Lancaster	CPI:	743
i	5/19/2008: Perform line maintenance identified by line inspection. LMI Inspection performed on 1 phase and 3 phase line - 10.3 miles total	Completed	3/8/2010	Reduced outage risk.		
	7/13/2010: Expanded Operational Review. The reliability analysis portion of the EOR was completed 3/10/10	Completed	12/31/2010	Reduced outage duration.		
	7/13/2010: Circuit outage data analysis - WPC поt on preceding qtr. list.	Completed	8/26/2010	Inconclusive. Monitor future performance. 4 Q Sun SAIFI: 3.717 (26% contribution to overall CPI); SAI Cases: 146 (47%); Last Trimmed: 2008. Top Catrees - not trimming related. Top Components of In Primary/Neutral.	DI: 364.6 (23%) uses of Interrupti	; >3 ions:
	7/23/2010: Relocate inaccessible line. WR's 585677 & 585688 Initiated to relocate inaccessible line sections	Scheduled for	12/31/2012	·		
	10/13/2010: Line inspection-equipment. Line Inspection to be performed on 2 & 3 phase line sections. (5.3 miles)	Completed	3/8/2010	Reduced outage risk.		
•	10/13/2010: Thermographic inspection-OH line.	Completed	2/4/2010	Reduced outage risk.		
	10/13/2010: Perform line maintenance identified by line inspection.	Completed	11/1/2010	The line maintenance work that was identified and of installation of arc protection devices on several line overhead primary conductors. This will greatly redu	sections of the	es the
16	Circuit ID: 26001 WEST DAMASCUS 60-03	1		Location: Pocono	CPI:	742
	1/13/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	2/28/2009	Inconclusive. Monitor future performance. Many smoutages during storms in June and October 2008 si to the CPI for this circuit. 500,000 customer minutes of 2008.	gnificantly contrib	outed
	10/9/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	11/30/2009	This circuit experienced a circuit breaker outage duvehicle hitting a pole. This circuit has had many lor due to the remote location of the circuit.		es
•	10/15/2010: Circuit outage data analysis.	Completed	9/30/2010	Beavers caused trees to bring down wires. Hazard removed.	trees have been	
•	10/21/2010: Improve sectionalizing capability.	Scheduled for	4/15 <b>/</b> 2011	Work Request 607577 to extend 1 phase and relocated	ate/install reclose	<b>∋</b> r.

Ran	nk Action	Status	Due/Comple	te Result		
17	Circuit ID: 17002 RIDGE ROAD 70-02			Location: Bethlehem	CPI: 739	
	1/13/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	2/28/2009	Inconclusive. Monitor future performance. The cointerrupted twice in the past year, once due to a vidue to a transmission outage.		
	10/9/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	11/12/2009	Inconclusive. Monitor future performance. This obreaker outages within the past year due to vege due to transmission events.		
	5/25/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	5/31/2010	The SAIDI component was the greatest contribut related outage during a March storm led to the ci interrupted for 2,564 minutes. This resulted in 98 nearby lines left customers unable to be transfer.	rcuit breaker being 33,320 CMI. Outages on	
	5/25/2010: Install animal guard(s). Install animal guards on a development of 84 CEMI customers.	Completed	8/30/2010	Reduced outage risk.		
	8/20/2010: Relocate inaccessible line.	Scheduled for	12/31/2011	Reduced customer count affected by each outag	θ.	
	8/20/2010: Line will be rearranged under New Substation project - Trumbauersville Substation	Scheduled for	5/31/2012			
18	Circuit ID: 13603 RICHLAND 36-03			Location: Bethlehem	CPI: 70	
	11/3/2010: Reconfigure single phase on the Richland 36-3 line:	Scheduled for	2/15/2011			
	7/28/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	5/31/2010	The SAIDI component was the greatest contribut duration tree outages during a March storm led to interrupted for over 850 minutes. Another tree-re May storm led to 298 customers being interrupted three vegetation interruptions were caused by tree trimming right of way.	rch storm led to 454 customers being Another tree-related outage during a eing interrupted for 1,166 minutes. All	

Rank	Action	Status	Due/Complex	te Result	<u> </u>	
19 Circ	uit ID: 47401 PENNS 74-01			Location: Sunbury	CPI: 66	
6/7/20 aptr. lis	10: Circuit outage data analysis - WPC not on preceding t.	Completed	5/31/2010	Inconclusive. Monitor future performance. This circ Susquehanna Region's WPC meeting on 6/7/10. To categorized as a worst performer due to its SAIDI on number of customers experiencing more than 3 ou month period. Two of the outages were due to off-	This circuit is contribution and the tages within the 12	
	10: Tree trimming. Complete maintainence trimming on circuit (59 miles), including hazard tree removals.	Completed	7/31/2010	Reduced outage risk. Tree Trimming completed J potential risk of outages.	uly 2010. Reduce	
	2010: Circuit outage data analysis - WPC not on ding qtr. list.	Completed	11/11/2010	The Penns 74-01 Circuit was reviewed at Susqueh meeting on November 11, 2010. This circuit is clacustomers experiencing multiple outages. This is one line section that is prone to off-right-of-way treactions were taken to address the performance of elsewhere in this database.	ssified as a WPC due t mainly attributable to e damage. Two key	
	2010: Line inspection-equipment. Entire line inspected eventive equipment maintenance October 2010.	Completed	11/15/2010	Reduced outage risk. 4 Maintenance items identifit been addressed. Reduce the potential risk of outa		
11/22/	2010: Relocate inaccessible line.	Scheduled for	3/31/2011			
1/6/20 2011	11: Expanded Operational Review, EOR Planned for	EOR initiated	12/31/2011			
	11: Thermographic inspection-OH line. Thermovision ction of entire line to be completed early 2011.	Scheduled for	12/31/2011			
0 Circ	uit ID: 26002 WEST DAMASCUS 60-0	2		Location: Pocono	CPI: 66	
4/9/20 qtr. lis	09: Circuit outage data analysis - WPC not on preceding t.	Completed	5/31/2009	There was a long duration breaker outage in Q1 of	2009 due to vehicle hit	
	006: Install sectionalizers. An intelligent switching that been identified to reduce customer minutes lost.	Completed	12/31/2009	Reduced customer count affected by each outage.		
8/11/2	006: Monitor future performance.	Completed	7/15/2009	There was a large OCR outage due to trees from a 2009 during a thunderstorm.	outside the ROW in Q2	
8/14/2	007: Tree trimming.	Completed	8/31/2009	Reduced outage risk.		
	2010: Circuit outage data analysis - WPC not on ding qtr. list.	Scheduled for	6/16/2011			
21 Circ	uit ID: 10901 COOPERSBURG 09-01			Location: Bethlehem	CPI: 66	
	010: Circuit outage data analysis - WPC not on ding qtr. list.	Completed	8/30/2010	The greatest contributor to the CPI for this circuit is greater than 3 outages. This circuit has experienced three breaker outages in the past 12 months. One was due to a transmission outage. One was due to animal contact in the substation. One was due to an improper operation of equipment. All three problems were addressed.		
8/20/2	010: Reconfigure line.	Scheduled for	5/31/2011	· · · · · · · · · · · · · · · · · · ·		

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Rank	Action	Status	Due/Comple	te_Result		
22 Cir	cuit ID: 28001 TAFTON 80-01			Location: Pocono	Ch!:	656
1/13/	2009: Circuit outage data analysis.	Completed	2/28/2009	This circuit exprienced a long duration breaker of long duration outages during the October 2008 significantly contributed to the CPI for this circuit customer minutes were lost during this storm.	snowstorm which	aller
1/30/	2009: Monitor future performance.	Completed	2/28/2009	Inconclusive. Monitor future performance. Circuin Q1 2009. In Q2 2009 there have been severa outages due to trees from outside the ROW conthunderstorms. Circuit performance improved in	I small long duration tacting the line durin	
	/2010: Circuit outage data analysis - WPC not on iding otr. list.	Completed	11/30/2010	This circuit experienced a long duration breaker trimming related December 2010 during a storm issues have contributed to outages on this circumisoperation, and animal guards, etc. have been the frequency of outages. A new 3 phase tie lin Newfoundland 83-2 is currently being engineere completed by the end of 2011. The new tie will flexibility, reduce outage exposure, and increase and restore customers.	ny/windy day. A varie it ei:, wind, transmiss n listed as contributo e between Tafton 80 d and is expected to allow greater operati	ety of sion ors to -1 and be onal
3 Circ	cuit ID: 54701 NEW BLOOMFIELD 47	7-01		Location: West Shore	CPI:	655
	2010: Circuit outage data analysis - WPC not on ding qtr. list.	Campleted	5/31/2010	This is a new 12 kV distribution line from a new contributing outage occurred when the substatic after being put in service. If it weren't for the pre equipment, the circuit would not be on the WPC will be monitored to determine whether additional warranted.	on recloser failed sho emature failure of neo list. Future perform	rtly w
hydra	2010: Install 3 phase OCR(s). Replace existing 3 phase utilic recloser with a new electronic recloser near Little to State Park for better coordination.	Scheduled for	3/31/2011			
	2010: Improve sectionalizing capability. Automateing tie to the Newport 50-1 line with ROCS devices.	Completed	7/30/2010	ROCS device will allow for faster sectionalizing customers.	for approximately 30	0
hydra	2010: Install 3 phase OCR(s). Replace existing 3 phase ulic recloser with a new electronic recloser near anted Springs Drive for better coordination.	Completed	10/1/2010	Reduced outage risk.		
	/2010: Tree trimming-selected line segments only (hot ). Trim hazard trees on sections of the main three phase	Completed	10/31/2010	Reduced outage risk. Reduced exposure to veg	getation related outag	ges.
11/12	2/2010: Tree trimming. Trim circuit as part of 4 year cycle	. Scheduled for	12/31/2011			
	1/2010: Investigate 3 phase OCR(s). Investigate the mistion of OCR. Check settings and swap contols.	Scheduled for	12/31/2011			
	/2010: Line inspection-equipment. Repair insulators on Buffalo State Park tap.	Completed	7 <i>/7/</i> 2010	Reduced outage risk.		
1/26/	2011: Expanded Operational Review.	EOR planned	12/31/2011			

Rank	Action	Status	Due/Comple	te Result		
24 Cir	cuit ID: 11001 EAST GREENVILLE 10	-01	· · · · · · · · · · · · · · · · · · ·	Location: Bethlehem	CPI:	650
deve sche	2009: Improve sectionalizing capability. Project being eloped to resectionalize trouble spots, and add better fusing ame to limit customer exposure. Inaccessible portion of the will be re-fed from a new single phase section.	Canceled	2/24/2011			
	2009: Reconductor line. Reconductor and relocate 20 as to the road.	Completed	11/30/2010	Reduced outage risk. Line relocated to reduce customers	risk of outage for	
repla	2009: Improve sectionalizing capability. Install new OCR, ace existing OCR with telemetric OCR and install motorized that East Greenville 10-1/Macungie 27-1 tie.	Completed	8/20/2010	Reduced outage risk.		
4 <i>1</i> 9 <i>1</i> 2 qtr. l	2009: Circuit outage data analysis - WPC not on preceding ist.	Completed	5/31/2009	The SAIDI component was the greatest contribution imbalance during switching caused a long-durate when several loops burned open. A second long in July when trees interrupted 378 customers for	tion outage in Febuar g-duration outage of	ry
	/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	8/30/2010	Customers experiencing greater than three outs contributor to the CPI. This was due to several to non-tree trimming related outstes) and one in failure on the line. Tree trimming is planned for	tree related outages stance of equipment	(due
8/20	/2010: Line Inspection and Maintenance	Scheduled for	12/31/2011			
5 Cir	cuit ID: 26103 THROOP 61-03			Location: Scranton	CPI:	647
	1/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	11/30/2010	Four breaker outages contributed to the high CI the outages were caused by equipment failure a This circuit has historically been a good perform	and one was vehicle	
6 Cir	cuit ID: 63201 MORGANTOWN 32-01			Location: Lancaster East	CPI:	646
	/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	8/26/2010	4 Q Summery: CAIDI: 319; SAIFI: 3.437 (the contribution to the over CPI is 14%); SAIDI: 318.21 (40%); >3 Cases: 715 (27%); Total CPI: 799. The circuit was lasted trimmed in 2004. The Top Causes of outages were trees, not trimming related and the Top Component was 0 transformer.		PI:
	/2010: Reconductor line. WR 582710 Initiated to onductor Section of 32-1 Line (#2 Cu)	Scheduled for	12/30/2011	Reduced outage risk.		
1/6/2	2011: Expanded Operational Review.	Scheduled for	12/30/2011			
1/13	/2011: Line inspection-equipment.	Scheduled for	12/30/2011	Reduced outage risk.		
1/13	/2011: Thermographic inspection-OH line.	Scheduled for	3/31/2011			

lani	k Action	Status	Due/Complet	e Result			
27 (	Circuit ID: 47704 BLOOMSBURG 77-04			Location: Sunbury	CPI:	ć	542
5	730/2008: Install 3 phase OCR(s). Replace existing OCR with single pole tripping recloser at grid 35204N31678. WR number is 420353.	Completed	8/31/2010	Reduced customer count affected by each outage.			
1	/16/2009: Expanded Operational Review.	Completed	12/31/2009	Reduced customer count affected by each outage. EC Triple Single OCR installed on Millertown Tap.	R completed	i.	
	M9/2009; Circuit outage data analysis - WPC not on preceding tr. list.	Completed	5/26/2009	Inconclusive. Monitor future performance. The 77-04 of at the Susquehanna Region's WPC meeting on 5/26/0 and the associated reliability metrics for the last 4 quarreviewed. The Bloomsburg #4 circuit is categorized as circuit due to its contribution to the system SAIDI. This impacted during the June 10 storm. This is expected until the Q2 2008 data drops out of the CPI calculation	9. The outageters were a worst perfectives; circuit was to remain a N	e d om hea	lata iing vily
	1/4/2008: Install tie. Extend 3-phase along Millville Rd up to Rt 2 and Tie 77-04 with 77-03 line	Scheduled for	8/14/2011				
(	7/13/2009: Relocate inaccessible line. Relocate 3 phase line WR 434431) along steep cliffside, subject to tree damage, to he roadside along Rte 42.	Completed	11/18/2009	Reduced outage risk.			
	7/13/2010: Circuit outage data analysis - WPC not on receding qtr. list.	Completed	8/19/2010	Inconclusive. Monitor future performance. The Blooms discussed at Susquehanna Region's Q2 2010 WPC m This circuit is categorized as a WPC due to storm outa 2010 weather event. This storm resulted in downed trepower lines and causing significant damaged.	eeting on 8-1 ges during a	9-1 Ma	0.
2	1/26/2010: Install tie. A project was placed into the budget to breate a tie between Bloomsburg 47704 and Bloomsburg 1/7703. This will enhance the reliability of both Bloomsburg circuits by providing additional operating flexibility through use of remotely operated interupting and switching devices. This project is scheduled to go in service in 11/2014.	Scheduled for	r 11/30/2014				
8	Circuit ID: 14404 SO SLATINGTON 44-04			Location: Lehigh	CPI:	(	5 <b>2</b> 3
1	0/11/2010: Install animal guard(s).	Completed	7/11/2009	Reduced outage risk.			
1	0/11/2010: Load balancing.	Canceled	1/1/2011	Reduced outage risk.			
	0/11/2010: Circuit outage data analysis - WPC not on receding qtr. list.	Completed	11/30/2010	This circuit had four circuit breaker outages over the padue to animal contact. Animal guarding has been done as a result. Due to these outages, all the customers of 4 outages. The greater than 3 outages contribution was	at the subs n the 44-4 lin	tatio	on aw

Rank	Action	Status	Due/Comple	te Result		
29 Ci	rcuit ID: 13905 SEIDERSVILLE 39-05			Location: Bethlehem	CPI:	605
	6/2010: Circuit outage data analysis - WPC not on seding qtr. list.	Completed	8/30/2010	The greatest contribution to the CPI has been due experiencing greater than 3 outages. Many of the on the line have been due to equipment failures. maintenance planned for this line in 2011.	iarger 3-phase ou	
8/20	0/2010: Line Inspection and Maintenance	Scheduled for	12/31/2011			
	0/2010: Line Reconfigured and approximately 500 comers transferred from this circuit	Scheduled for	1/30/2011	Reduced customer count affected by each outage	3.	
0 Ci	rcuit ID: 18501 CANADENSIS 85-01			Location: Pocono	CPI:	587
	9/2009: Circuit outage data analysis - WPC not on seding qtr. list.	Completed	11/30/2009	Inconclusive. Monitor future performance. This ci OCR outages in the last 12 months resulting in 1, experiencing 3 or more outages. Two of the outage vehicle hits and one was caused by a tree from or	000 customers jes were caused by	
5/7/ qtr.	2010: Circuit outage data analysis - WPC not on preceding list.	Completed	5/7/2010	Inconclusive. Monitor future performance. One exoutage and one large OCR outage in Q1 2010 grd CPI of this circuit. Both outages were caused by t ROW.	eatly contributed to	the
10/1	8/2010: Improve sectionalizing capability.	Completed	8/31/2010	The addition of Remote Operator Controlled Swite VCRs will be investigated.	ches and Telemetri	С
10/1	8/2010: Improve sectionalizing capability.	Scheduled for	6/15/2011	Existing air breaks and OCRs will be upgraded to	automated devices	s.
1 <b>C</b> i	rcuit ID: 18502 CANADENSIS 85-02			Location: Pocono	CPI:	585
Mor	itor future performance.	Ongoing				
	0/2009: Circuit outage data analysis - WPC not on seding qtr. list.	Completed	8/31/2009	Inconclusive. Monitor future performance. Several outages during the October 2008 showsform and outage during a windstorm in February significant for this circuit.	a long duration bre	aker
2/6/	2009: Improve sectionalizing capability.	Completed	2/6/2009	Reduced outage duration, OCRs 68292N38999 a upgraded with telemetrics.	and 68774N38190	were
	on/2010: Circuit outage data analysis - WPC not on seding qtr. list.	Completed	11/30/2010	Two circuit breaker outages and three large OCR the high CPI of this circuit. Two outages were cau failure, two were caused by trees from outside the vehicle hit.	ised by equipment	

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8	Circuit ID: 44101 PENN ELEC 41-01 6/1/2010: Circuit outage data analysis - WPC not on preceding tr. list.	Oppositore	<u> </u>		
		Onnetate t		Location: Sunbury	<b>CPI:</b> 57
		Completed	6/7 <i>/</i> 2010	Inconclusive. Monitor future performance. This cir Susquehanna Region's WPC meeting on 6/7/10. source from Penelec, serving customers in a rural months there was a total of five outages, three of customers fed from this line. This line will be mon performance as it has typically been affected during	This line is fed by a area. Over the last 12 which affected all 33 itored for future
	2/14/2010: Investigate putting phone number of contact in DCR attribute field	Completed	1/10/2011	Reduced outage duration. Phone number for Penby Jedediah Smith (Reliability Supervisor, Erie Rele can be contacted for past outages at smithij@f 814-868-8828. Phone number is being put into Od and note placed in OMS.	gion) as 814-860-5587. irstenergycorp.com or
	/6/2011: Thermographic inspection-OH line. Thermovision respection of entire line to be completed early 2011.	in progréss			
33 (	Circuit ID: 16402 MOUNT POCONO 64-02			Location: Pocono	CPI: 56
	/9/2009: Circuit outage data analysis - WPC not on preceding tr. list.	Completed	5/31/2009	Three breaker outages and a large OCR outage si the CPI of this circuit	gnificantly contributed t
C	Circuit outage data analysis.	Completed	3/31/2010	The high CPI of this circuit is due to a breaker out an OCR with 400 customers. The breaker outage tree contact during a windstorm. Four of the OCR trees from outside the right-of-way contacting the livehicle hit. Performance in Q1 2010 continues to be	in Q1 2009 was due to a outages were caused b ine and one was a
b	J/26/2010: Improve sectionalizing capability. A project has seen identified to change the normal open point with 56-04 line and automate switches/OCRs to minimize the number of sustomers involved in a outage	Completed	11/30/2010	Project was completed and remotely operated devon this circuit. This will reduce the time needed to during an outage.	
	3/30/2010: Perform line maintenance identified by line aspection.	Completed	12/31/2010	Circuit was inspected and a large amount of equip to failure will be replaced.	ment known to be pron
	6/30/2010: Tree trimming-selected line segments only (hat spots).	Scheduled for	12/31/2010	Line was inspected for tree clearence problems are be performed.	nd hot spot trimming will
	/14/2011: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	2/18/2011		
34 (	Circuit ID: 64701 LITITZ 47-01			Location: Lancaster East	CPI: 56
1 F	0/11/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	11/5/2010	Inconclusive. Monitor future performance.	
1	/6/2011: Expanded Operational Review.	Scheduled for	12/30/2011		
1	/13/2011: Line inspection-equipment.	Scheduled for	r 12/30/2011		
1	/13/2011: Thermographic inspection-OH line.	Scheduled for	3/31/2011		

ank	Action		Status	Due/Comple	te Result		
55 Cir	cuit ID: 67201	ΓERRE HILL 72-01			Location: Lancaster East	CPI:	559
	2010: Expanded Operat pleted 5/5/10	ional Review. Reliability Analysis	Completed	12/31/2010	Reduced outage duration.		
See	subsequent records for	Reliability Work Requests					
5/6/2	2010: Install fuse(s). In:	stall tap fuse @ 45929s30694	Completed	7/31/2010	Reduced customer count affected by each outage.		
	/2010: Install 1 phase 0 46s30423	OCR(s). Inst 1ph OCR @	Scheduled for	12/30/2011			
NO I	LBAS 44796s30605	alizing capability. Install ROCS on Telemetrics @ 46410s30313	Scheduled for	12/30/2011			
	1/2010: Circuit outage of eding qtr. list.	data analysis - WPC not on	Completed	11/5/2010	Inconclusive. Monitor future performance.		
	2010: Line inspection-ed & 3 phase line sections	quipment. Perform line inspection (17 miles)	Completed	9/7/2010	Identified deteriorated crossarms at 8 locations, 2 liquid created work requests for the replacement.	ghtning arrestors	, and
insp		aintenance identified by line rms and deteriorated equipment	Completed	10/22/2010	Reduced outage risk.		
2/10	/2010: Thermographic i	nspection-OH line.	Completed	2/4/2010	No significant problems identified.		
6 Cir	cuit ID: 42401	GIRARD MANOR 24-01			Location: Central	CPI:	558
2/13	/2009: Expanded Opera	itional Review.	Completed	5/12/2009	Identified locations to install 5 fault indicators and 1	tap fuse.	
	/2009: Install 5 fault ind	icators to identify faults in ine.	Completed	11/18/2009	Reduced outage duration.		
	/2009: Install fuse(s). ince exposure risk.	nstall single phase tap fuse to	Completed	12/2/2009	Reduced customer count affected by each outage.		
	/2009: Circuit outage de eding qtr. list.	ata analysis - WPC not on	Completed	11/30/2009	SAIDI was 34% of the CPI score. The majority of th trees, not trimming related. Last tree trimming on th completed in 2005. The two largest outages contrib due a sectionalizer misoperating.	is feeder was	
	/2010: Install sectionalizemisoperated with an elec-	zers. Replace sectionalizer that ctronic sectionalizer.	Completed	3/5/2010	Reduced outage risk. Since the installation of the e there have been no misoperations. Continue to mor performance of the sectionalizer.		alizer,
	/2011: Circuit outage da eding qtr. list.	ata analysis - WPC not on	Scheduled for	2/18/2011			
7 Cir	cuit ID: 47801	MOUNT CARMEL 78-0	1		Location: Central	CPI:	548
	/2011: Circuit outage da eding qtr. list.	ata analysis - WPC not on	Scheduled for	2/18/2011			

Rank Action	Status	Due/Comple	te Result		
38 Circuit ID: 47703 BLOOMSBURG 77-03			Location: Sunbury	CPI:	544
1/16/2009: Expanded Operational Review.	EOR planned	12/31/2009	Reduced customer count affected by each outage. EOI new load break air switch was installed to provide for ad sectionalizing.		Α
8/26/2010: Install tie. A project was placed into the budget to create a tie between Bloomsburg 47703 and Bloomsburg 47704. This will enhance the reliability of both Bloomsburg circuits by providing additional operating flexibility through use of remotely operated interupting and switching devices. This project is scheduled to go in service in 11/2014.	Scheduled for	11/30/2014			
10/11/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	11/11/2010	The Bloomsburg 77-03 circuit was reviewed at Susqueh 2010 WPC meeting on November 11, 2010. This circuit worst-performer due to the number of customers experioutages. Over the last 4 quarters, the substation breake three times, twice due to off-right-of-way trees contactin line will be inspected for vegetation encroachment and pequipment failure risks. Based on the performance of the quarters, this circuit will likely remain a WPC for 2 - 3 m	t is classified encing multiper was interruly g the line. The cotential into the line in the	as a le oted nis
11/11/2010: Line inspection-equipment.	Scheduled for	4/1/2011			
9 Circuit ID: 64802 MOUNT NEBO 48-02			Location: Lancaster East	CPI:	541
4/28/2009: Expanded Operational Review. Voltage Profile Completed 4/21/09 Reliability Analysis Completed 4/21/09	Completed	12/31/2009	Reduced outage risk.		
See subsequent records for reliability work requests					
4/28/2009: Monitor future performance, Install 150 kVA Regulator n/o 39518s20247 (Node 13),	Completed	3/31/2010	Inconclusive, Monitor future performance.		
7/10/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	8/14/2009	Reduced customer count affected by each outage. Disc constructing tie to West Willow and constructing substa- to reduce outage duration and customers affected.	cussions arou tion in Martic	ind ville
10/7/2009: Install 3 phase OCR(s). Replace Hydraulic OCR with Telemetric Electronic OCR 40077s20754	Completed	10/29/2009	Reduced outage duration.		
7/15/2009: Line inspection-equipment. Complete Line Inspection on multiphase line sections - 6.6 miles total	Completed	8/10/2009	Reduced outage risk.		
12/15/2009: Perform line maintenance identified by line inspection. WR 538735 - Replace Deteriorated cross arm	Completed	12/31/2009	Reduced outage risk.		
10/13/2010: Reconductor line. Reconductor 1st 12 spans from Substation to 477 Al XLP (WR 447334)	Completed	12/31/2010	Reduced outage risk.		
10/13/2010: Install tie. Construct Tie to West Willow 75-3 via River Rd	Scheduled for	12/31/2012			
10/13/2010: Install tie. Construct Tie to West Willow 75-3 via Marticville Rd	Scheduled for	12/31/2014			

Rank	Action	Status 1	Due/Comple	te Result		
40 Cir	cuit ID: 20601 GREENWOOD 06-01			Location: Central	CPI:	520
2/21	/2008: Line inspection-equipment.	Scheduled for	8/31/2008	Analyze reliability with single phase taps.		
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011			
41 <b>C</b> ir	cuit ID: 64202 KINZER 42-02			Location: Lancaster	CPI:	513
inac	/2009: Relocate inaccessible line. Relocate 3 ph cessible line to Dam Rd. Approximate grid numbers 13s22904 to 46903s22491	Completed	10/14/2010	Reduced outage duration.		
	2010: Expanded Operational Review. Reliability Analysis ipleted 9/8/10	Completed	12/31/2010	Reduced outage duration.		
No F	Reliability W.R. needed					
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011			
	/2011: Line inspection-equipment. Perform line inspection and 3 phase line sections - 16.3 miles	n Completed	7/12/2010	Reduced outage risk.		
insp	/2011: Perform line maintenance identified by line ection. Perform line inspection on 2 and 3 phase line ions - 16.3 miles	Scheduled for	3/31/2011			
<b>42 C</b> ir	cuit ID: 66203 SPRINGS 62-03			Location: Lancaster	CPI:	512
	/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	8/26/2010	Inconclusive. Monitor future performance.		
	/2010: Line inspection-equipment. Inspect 2 & 3 phase sections in advance of scheduled inspection in 2011.	Completed	7/19/2010	Follow-up WR's initiated		
insp	/2010: Perform line maintenance identified by line ection. WR's 595253 (Arms) and 595256 (Minor Maint) ted to complete follow-up work from line patrol	Completed	12/31/2010	Reduced outage risk.		
	/2010: Improve sectionalizing capability. WR 573052 ited to replace recloser that failed to reclose.	Completed	4/29/2010	Reduced outage risk.		
	/2010: Improve sectionalizing capability. Scheduled acement of Substation CB	Scheduled for	12/31/2012			
1/6/2	2011: Expanded Operational Review.	Scheduled for	12/30/2011			
1/13	/2011: Line inspection-equipment.	Scheduled for	12/30/2011			
1/13	/2011: Thermographic inspection-OH line.	Scheduled for	3/31/2011			
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011			

Rank	Action	Status	Due/Complex	e Result		
3 Cir	cuit ID: 47707 BLOOMSBURG 77-07			Location: Sunbury	CPI:	502
1/16	/2009: Expanded Operational Review.	EOR initiated	12/31/2009	Reduced customer count affected by each outage.		
	onductor line. WR 145093 - Reconductor 3 phase portion assen Dr. approx. from Grovania to Catawissa.	Completed	1/8/2010	Reduced outage risk.		
	2008: Install tie. Construct Tie between East Danville #2 Bloomsburg #7 along Rte 11.	Scheduled for	10/26/2011			
disco	2009: Improve sectionalizing capability. Instalt solid blade connects to imrprove sectionalizing on Grovania Hill Tap R 33751N29561).	Completed	5/27/2010	Reduced customer count affected by each outage.		
	/2009: Line inspection-equipment. Inspect manholes at wissa SR 42 River Bridge Crossing	Completed	3/18/2009	Reduced outage risk. Manholes inspected and photos items found.	taken. No ma	ajor
	/2009: Install fuse(s). Install series fusing on River Drive # 504490).	Completed	7/16/2010	Reduced customer count affected by each outage.		
	/2009: Install fuse(s). Install series fusing - Hollow Rd. # 504489)	Completed	7/16/2010	Reduced customer count affected by each outage.		
	2009: Install fuse(s). Install series fusing - Hollow Rd. # 504489)	Completed	2/19/2010	Reduced customer count affected by each outage.		
	2009: Install 1 phase OCR(s), Install OCR at 9N27955, Long Woods Rd and Orchard Rd, (WR 503377).	Completed	5/28/2010	Reduced customer count affected by each outage.		
	/2009: Reconductor line. Replace conduit and river sing on SR 42 Bridge to Catawissa.	Scheduled for	5/14/2011			
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011			
4 Cir	cuit ID: 28302 NEWFOUNDLAND 83-0	)2		Location: Pocono	CPI:	498
Moni	tor future performance.	Completed	12/31/2009	Inconclusive, Monitor future performance. Many long of during October 2008 snowstorm significantly contribute circuit. Over 6:6 million customer minutes were lost du Q4 2008. There was a large OCR outage in August 09 Circuit performance has improved in 2009.	ed to the CPI o	of this s in
	1/2010: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	11/30/2010			
10/2	1/2010: Tree trimming.	Completed	10/21/2010	Reduced outage risk. Circuit recently trimmed. A new between Tafton 80-1 and Newfoundland 83-2 is current engineered and is expected to be completed by the entie will allow greater operational flexibility, reduce outage increase ability to remotely isolate and restore custom.	tly being d of 2011. Thi ge exposure, a	e n <i>e</i> w

45	Circuit ID: 41503 FAIRVIEW 15-03			Location: Central	CPI:	487
••	Expanded Operational Review.	Completed	3/10/2010	Reduced customer count affected by each outage.		10,
	3/5/2010: Relocate inaccessible line. Remove 3-phase inaccessible and improve sectionalizing.	Scheduled for	6/30/2011	,		
	9/23/2010: Perform line maintenance identified by line inspection.	Completed	9/23/2010	Reduced outage risk.		
	Install fuse(s). Install tap fuses at 3 locations.	Scheduled for	12/25/2011			
	Improve sectionalizing capability. Add fault indicators to reduce outage duration.	Scheduled for	12/25/2011			
	1/14/2011: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	2/18/2011			
46	Circuit ID: 15704 TANNERSVILLE 57-04			Location: Pocono	CPI:	478
	Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	<i>5/7/</i> 2010	Four large OCR outages significantly contributed to the Two outages were caused by trees outside the ROW, or hit, and one was of unknown cause.		
	6/30/2010: Install tie.	Scheduled for	11/30/2011	SP51223 will create a tie for 524 currently radial custome remote operator controlled equipment will be installed to sectionalizing of the circuit.		al
	10/11/2010: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	11/30/2010	Two transmission outages and three large OCR outages high CPI of this circuit. The transmission outages were of from outside the ROW. The OCR outages were caused outside the ROW and a vehicle hit.	aused by a	tree

Ran	k Action	Status	Due/Comple	te Result	
47	Circuit ID: 22406 MORGAN 24-06			Location: Scranton	CPI: 469
	Circuit outage data analysis - WPC not on preceding qtr. list. Additional projects are being reviewed for inclusion of the budget to increase reliability.	Completed	4/27/2009	Inconclusive. Monitor future performance.	
	Rebuild an inaccessible portion of 4/0 with 477 AL.	Scheduled for	11/29/2011		
	Pole inspection of inaccessible line section in grid block 533N492.	Completed	4/30/2009	Investigating the addition of Remote Operator Contro sectionalize the inaccessible section.	lled Switches to
-	4/26/2010: Investigate the addition of Remote Operator Controlled Switches (ROCS) to sectionalize an inaccessible section.	Canceled	12/31/2010	Replaced with relocation.	
	4/16/2009: Investigate if the substation equipment has animal guards installed.	Completed	4/30/2009	Animal guards are installed at the substation.	
i	Monitor future performance.	Ongoing		High CPI caused by three breaker outages. Two occurone due to a vehicle hit and one due to equipment fail outage occured in Q3 2009 and was caused by a anin substation. Circuit performance in Q1 2010 was good outages.	ure. One breaker nal contact at the
	1/14/2011: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	2/18/2011		

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Rank	Action	Status	Due/Comple	te Result	
48 Circ	cuit ID: 46701 RENOVO 67-01			Location: Susquehanna	CPI: 468
12/18	/2008: Expanded Operational Review.	Completed	12/31/2009	Reduced outage risk. Identified locations for addition animal guard.	nal fusing and 1
12/18	/2008: Line inspection-equipment.	Completed	1/30/2009	No maintenance items identified.	
	2009: Circuit outage data analysis - WPC not on ding qtr. list.	Completed	12/1/2009	Inconclusive. Monitor future performance. The Rend discussed at Susquehanna Region's Quarterly WPC This circuit is a WPC due to outages longer than 4 h circuit was affected by a summer wind storm on Aug customers experiencing an outage for approximately was inspected in October and November to identify i Several items identified include additional fusing, repunred by equipment damage, and adding redundant Susquehanna River crossing to S. Renovo Borough. documented individually in this database.	meeting on 12/1/09. Its in duration. This sust 9 resulting in all to 5 hours. The circuit improvement projects. The found the found oncy to the
1/6/20	010: Install animal guard(s).	Completed	1/20/2010	Reduced outage risk.	
1/6/20	010: Install fuse(s).	Completed	1/20/2010	Reduced customer count affected by each outage.	
7/6/20	010: Install fuse(s).	Completed	1/7/2010	Reduced customer count affected by each outage.	
1/6/20	010: Thermographic inspection-OH line.	Completed	3/31/2010	6.6 miles of three-phase and 0.2 miles of two-phase identified.	inpected. No repairs
Rebui Portic can b	2010: Relocate inaccessible line. Westport Tap Part 1. Id approx 2.0 miles with 1/0 ACSR XLP and static wire. Ins may only need XLP and no static wire. Other portions a relocated from one side of SR 120 to other side, away steep bank.	Scheduled for	12/31/2011		
Rebui Portio can be	2010: Relocate inaccessible line. Westport Tap Part 2. Id approx 1.3 miles with 1/0 ACSR XLP and static wire. In smay only need XLP and no static wire. Other portions a relocated from one side of SR 120 to other side, away steep bank.	Scheduled for	12/31/2011		

Rank	Action	Status	Due/Comple	te Result	
49 Cir	cuit ID: 40802 EXCHANGE 08-02			Location: Central	CPI: 46
2/13/	2009: Expanded Operational Review.	Completed	6/15/2009	Initiated work to install 5 tap fuses and fault indica sectionalizing air break.	tors at an exisiting
	2009: Install fuse(s). Install 5 tap fuses to reduce sure risk to substation.	Completed	4/30/2010	Reduced outage risk.	
	2009: Monitor future performance. Install fault indicators actionalizing air break.	Completed	10/23/2009	Inconclusive, Monitor future performance.	
	2009: Circuit outage data analysis - WPC not on eding qtr. list.	Completed	7/10 <i>/</i> 2009	Inconclusive. Monitor future performance. SAIDI vacore. Planned maintenance was scheduled at a the majority of the customers were transfered to the While serving all those customer an outage occur interruption to all of the 8-2 line and all the custom to the line. This caused the circuit to receive a high the first time this circuit has ever been on the worst	neigboring substation so the Exchange 8-2 line. and on the line causing at the satol were transfered th SAIDI value. This is
	2011: Circuit outage data analysis - WPC not on adding qtr. list.	Scheduled for	2/18/2011		
0 Cir	cuit ID: 12701 MACUNGIE 27-01			Location: Lehigh	<b>CPI:</b> 463
2/28/	2008: Relocate inaccessible line.	Scheduled for	2/28/2011	Reduced outage risk. Section along Churchview I	Road to be relocated.
2/28/	2008: Build tie to split single phase load on Zionsville tap.	Completed	6/29/2009	Reduced outage risk.	
2/28/	2008: Thermographic inspection-OH line.	Completed	4/1/2009	Reduced outage risk. Work Requests generated found.	o resolve concerns
	2011: Circuit outage data analysis - WPC not on odding qtr. list.	Scheduled for	2/18/2011		
1 Cir	cuit ID: 67402 WAKEFIELD 74-02			Location: Lancaster East	CPI: 459
	2008: Line inspection-equipment. LMI Inspection rmed on 3 phase line - 9.4 miles total	Completed	12/31/2009	Reduced outage risk.	
Com	009: Expanded Operational Review. Voltage Profile bleted 9/8/09 bility Analysis Completed 9/8/09	Completed	9/8/2009	Reduced outage risk.	
Nore	liability work requests needed				
	2011: Circuit outage data analysis - WPC not on odding qtr. list.	Scheduled for	2/18/2011		

Rank	Action	Status	Due/Comple	te Result	
52 Cir	cuit ID: 12501 MINSI TRAIL 25-01			Location: Bethlehem	CPI: 454
	/2009: Circuit outage data analysis - WPC not on eding qtr. list.	Campleted	11/12/2009	Inconclusive. Monitor future performance. Four February and August 2009 caused this circuit to 1,500 customers experienced at least 4 outages a history of frequent breaker outages. This is a ties.	be on the WPC list. Over s. This circuit has not had
	/2010: Install 3 phase OCR to sectionalize the customer it in half and limit the circuit breaker's exposure.	Completed	9/25/2010		
8/20	/2010: Install 3 phase OCR(s).	Completed	8/20/2010	Reduced outage risk.	
8/20	/2010: Install 3 phase OCR(s).	Completed	8/20/2010	Reduced customer count affected by each outage	ge.
8/20	/2010: Line Inspection and Maintenance	Scheduled for	12/31/2011		
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011		
3 Cir	cuit ID: 12303 LANARK 23-03			Location: Lehigh	CPI: 454
	2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011		
54 Cir	cuit ID: 60301 TWIN VALLEY 03-01			Location: Lancaster East	CPI: 453
1/5/2	2011; Expanded Operational Review.	Scheduled for	12/30/2011		
1/13	/2011: Line inspection-equipment.	Scheduled for	12/30/2011	Reduced outage risk.	
1/13	/2011: Thermographic inspection-OH line.	Scheduled for	3/31/2011		
	/2011: Circuit outage data analysis - WPC not on eding qtr. list.	Scheduled for	2/18/2011		

Rai	nk Action	Status	Due/Comple	te Result		
55	Circuit ID: 63403 HONEYBROOK 34-03			Location: Lancaster East	CPI: 450	
	3/30/2008: Line inspection-equipment. LMI Inspection performed on 2 phase and 3 phase line - 18 miles total Repair damaged down-ground, blown lightning arresters & bad crossarm, and broken cross-arm brace	Completed	6/1/2009	Reduced outage risk.		
	5/8/2009: Install fuse(s). Install tap fuse <b>②</b> 52054s28292 and 51787s28578	Completed	7/7/2009	Reduced customer count affected by each outage.		
	5/8/2009: Line inspection-equipment. Replace C-tagged pole @ 52431s28593	Completed	9/10/2009	Reduced outage risk.		
	Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	6/30/2010	Incondusive. Monitor future performance. SAIDI was score. The number of cases greater than 3 was 47% score. The majority of those outages were due to E. The one single outage that contributed the greatest occurred on 5/31 due to a server wind storm, causinfail. The CMI for that one outage was 821,036, or 6% over the last 12 months.	6 of the overall CPI quipment Failures. to the 12 month CMI g some equipment to	
	1/13/2011: Line inspection-equipment.	Scheduled for	12/30/2011	Reduced outage risk.		
	1/6/2011: Expanded Operational Review.	Scheduled for	12/30/2011			
	1/13/2011: Thermographic inspection-OH line.	Scheduled for	3/31/2011			
	1/14/2011: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	2/18/2011			
56	Circuit ID: 44903 SCOTT 49-03			Location: Sunbury	CPI: 450	
	7/10/2009: Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	8/25/2009	The Scott 49-03 circuit was discussed at Susquehanna Region's 200 Worst Performing Circuits meeting on August 25, 2009. This circuit is WPC because of a high number of customers experiencing more that interruptions. All customers on this line were interrupted 2X due to a transmission outage. Approximately 650 customers were interrupted due to vehicles striking PPL facilities. This circuit is typically not a wo performer and is expected to drop off the list next quarter assuming continued good performance in Q3 2009.		
	6/7/2010: Line inspection-equipment.	Completed	10/1/2010			
	Circuit outage data analysis - WPC not on preceding qtr. list.	Completed	6/7 <i>1</i> 2010	Inconclusive. Monitor future performance. This circus Susquehanna Region's WPC meeting on 6/7/10. The categorized as a worst performer due to the number experiencing more than 3 outages within the 12 more causes have been vehicle hits, customer equipment customers, and other miscellaneous issues. Two midentified to improve the performance of this line.	nis circuit is of customers th period. The affecting PPL	
	6/7/2010: Install 3 phase OCR(s).	Scheduled for	6/1/2011			
	1/14/2011: Circuit outage data analysis - WPC not on preceding qtr. list.	Scheduled for	2/18/2011			

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, Trees-Not Trimming Related, and Animals), which are based on the percent of cases of trouble, are highlighted in the table. Service interruption definitions are provided in Appendix B. PPL Electric's maintenance programs focus on corrective actions to address controllable service interruptions (e.g., trees and equipment failure).

Cause Description	Trouble Cases <sup>6</sup>	Percent of Trouble Cases	Customer Interruptions <sup>7</sup>	Percent of Customer Interruptions	Customer Minutes	Percent of Customer Minutes
Animals	4,733	23.57%	79,389	5.26%	9,340,005	4.58%
Contact/Dig-In	156	0.78%	10,721	0.71%	1,135,013	0.56%
Directed by Non-PPL Authority	158	0.79%	10,823	0.72%	621,367	0.30%
Equipment Failures	5,572	27.75%	484,287	32.11%	55,960,493	27.44%
Improper Design	0	0.00%	0	0.00%	0	0.00%
Improper Installation	5	0.02%	4,072	0.27%	420,645	0.21%
Improper Operation	31	0.15%	46,064	3.05%	1,429,705	0.70%
Nothing Found	1,723	8.58%	106,285	7.05%	8,616,992	4.22%
Other-Controllable	124	0.62%	10,673	0.71%	714,565	0.35%
Other-Non Control	498	2.48%	50,608	3.36%	4,018,302	1.97%
Other-Public	94	0.47%	21,408	1.42%	952,375	0.47%
Trees-Not Trimming Related	5,423	27.00%	509,649	33.79%	98,787,987	48.43%
Trees-Trimming Related	879	4.38%	56,307	3.73%	12,143,248	5.95%
Vehicles	686	3.42%	118,060	7.83%	9,829,732	4.82%
Total	20,082	100.00%	1,508,346	100.00%	203,970,429	100.00%

<sup>&</sup>lt;sup>6</sup> Cases of trouble are the number of sustained customer service interruptions (i.e., service outages).

<sup>&</sup>lt;sup>7</sup> The data reflects the number of customers interrupted for each interruption event summed for all events, also known as customer interruptions. If a customer is affected by three separate cases of trouble, that customer represents three customer interruptions, but only one customer interrupted.

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. PPL Electric has experienced an elevated level of both reportable and non-reportable storms during this reporting period.

Trees – Trimming Related: On January 1, 2010, PPL Electric initiated a prescriptive tree trimming program that moved maintenance trimming cycles to five years for all circuits in the northern portion of its service area and four years for all circuits in the southern portion of its service area. These cycles are inclusive of both urban and rural circuits, and will shorten the overall average trimming cycle for the system. Several more years will be required for the program to reach its full effectiveness on all circuits

Trees – Not Trimming Related: Although their effect on reliability is significant, tree outages not related to trimming generally are caused by trees falling from outside of PPL Electric's rights-of-way, and generally are not controllable.

Animals: Animals accounted for about 24% of PPL Electric's cases of trouble. Although this represents a significant number of cases, the effect on SAIFI and CAIDI is small because nearly 85% 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.

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 45% of the cases of trouble, 49% 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 indicators of equipment condition or performance. In 2009, to help reduce the risk of incurring interruptions due to equipment failures, PPL Electric initiated an Asset Optimization Strategy project to assess equipment health and generate a long-term plan for proactive infrastructure replacement and enhanced maintenance practices. It is anticipated that, over time, this strategy will improve reliability performance as it pertains to PPL Electric's distribution, substation and transmission assets.

**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	4th Q	4th Quarter		Year-to-date	
-		Budget	Actual	Budget	Actual	
Transmission				_		
Transmission C-tag poles (# of poles)	200	17	200	200	347	
Transmission arm replacements (# of sets)	300	16	34	300	190	
Transmission air break switch inspections (# of switches)	100	7	16	100	73	
Transmission lightning arrester installations (# of sets)	100	7	28	100	76	
Transmission pole inspections (# of poles) <sup>8</sup>	8,500	400	9,043	8,500	18,041	
Transmission tree side trim-Bulk Power (linear feet)	161,155	17,961	0	161,155	711,034	
Transmission herbicide-Bulk Power (# of acres)	3,188	410	1,128	3,188	2,731	
Transmission reclearing (# of acres)	4,905	459	674	4,905	8,719	
Transmission danger tree removals-Bulk Power (# of trees)	6,431	451	135	6,431	30,570	
Substation						
Substation batteries (# of activities)	851	0	31	851	860	
Circuit breakers (# of activities)	1,638	232	43	1,638	1,556	
Substation inspections (# of activities)	1,794	260	297	1,794	1,738	
Transformer maintenance (# of activities)	2,177	551	512	2,177	1,964	
Distribution	1	_				
Distribution C-tag poles replaced (# of poles)	2,000	267	.468	2,000	1,244	
C-truss distribution poles (# of poles)	1,800	384	3,247	1,800	5,845	
Capacitor (MVAR added)	81	10	8	81	78	
OCR replacements (# of)	715	38	177	715	729	
Oil Switch replacements (# of) <sup>9</sup>	20	1	2	20	8	
Distribution air break switch inspections (# of) <sup>10</sup>	310	66	52	310	315	
Distribution pole inspections (# of poles)	95,000	35,000	81,372	95,000	147,429	
Distribution line inspections (# of miles)	3,000	1,300	150	3,000	1,215	
Group relamping (# of lamps)	16,029	8,029	3,000	16,029	6,000	
Test sections of underground distribution cable	430	88	106	430	543	
Distribution tree trimming (# of miles)	7,444	2,011	2,966	7,444	7,444	
Distribution herbicide (# of acres)	N/A	N/A	N/A	N/A	N/A	
Distribution > 18" removals within R/W (# of trees)	903	153	629	903	1,654	

<sup>&</sup>lt;sup>8</sup> New program developed for 2010; inspection and treatment of transmission wood poles.

<sup>&</sup>lt;sup>9</sup> The line item is being added as a result of an error correction from 2010 annual report.

<sup>&</sup>lt;sup>10</sup> The line item is being added as a result of an error correction from the 2010 annual report.

Inspection & Maintenance Goals/Objectives	Annual	4th Quarter		Year-to-date	
Inspection & Maintenance Guais/Objectives	Budget	Budget	Actual	Budget	Actual
Distribution hazard tree removals outside R/W (# of trees)	12,069	2,883	8,120	12,069	25,608
LTN manhole inspections (# of)	500	84	237	500	841
LTN vault inspections (# of)	821	118	236	821	681
LTN network protector overhauls (# of)	79	16	24	79	50
LTN reverse power trip testing (# of)	132 .	31	14	132	95

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

-	4th Quarter		Year-to-date	
Activity	Budget (\$1,000s)	Actual (\$1,000s)	Budget (\$1,000s)	Actual (\$1,000s)
Provide Electric Service	2,875	3,627	11,459	12,166
Vegetation Management	7,970	10,139	31,102	38,197
Customer Response	14,463	11,915	64,498	59,410
Reliability & Maintenance	13,006	17,941	61,824	53,647
System Upgrade	841	700	3,243	1,783
Customer Services/Accounts	30,624	27,137	119,404	111,211
Others	4,434	7,227	46,616	48,782
Total O&M Expenses	74,212	78,686	338,147	325,195

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.

	4th <sup>d</sup> Quarter		Year-to-date	
	Budget (\$1,000s)	Actual (\$1,000s)	Budget (\$1,000s)	Actual (\$1,000s)
New Service/Revenue	15,216	17,900	67,185	60,287
System Upgrade	32,843	44,922	131,769	127,343
Reliability & Maintenance	38,467	71,651	121,315	156,061
Customer Response	5,967	6,505	23,109	22,372
Other	8,553	9,945	26,681	21,907
Total	100,045	150,923	370,058	387,970

# 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 C.

Transmission and Distribution (T&D)		
Lineman Leader	80	
Journeyman Lineman	181	
Journeyman Lineman-Trainee	125	
Helper	31	
Groundhand	8	
Troubleman	52	
T&D Total	477	
Electrical		
Elect Leaders-UG	7	
Elect Leaders-Net	9	
Elect Leaders-Sub	26	
Journeyman Elect-UG	27	
Journeyman Elect-Net	8	
Journeyman Elect-Sub	41	
Journeyman Elect Trainee-UG	7	
Journeyman Elect Trainee-Net	13	
Journeyman Elect Trainee	46	
Helper	0	
Laborer-Network	5	
Laborer-Substation	10	
Electrical Total	199	
Overall Total	676	

## PPL Electric Utilities Corporation Worst Performing Circuit Definition

PPL Electric uses a Circuit Performance Index (CPI) to define the worst performing circuits on its system. The CPI covers about 1,100 feeders across the PPL Electric service area.

The CPI is derived using the following statistics and weighting factors:

- SAIDI 35%
- SAIFI 30%
- Fraction of customers interrupted more than three times 20%
- Fraction of customers with an interruption over four hours 15%

Major Events, momentary interruptions, and planned prearranged jobs are excluded.

The CPI values are obtained by multiplying the individual feeder statistics by coefficients based on the 5-year period, 2001-2005. Average values over this period were:

- SAIDI 121.9 per customer per year
- SAIFI 0.929 per customer per year
- Fraction of customers interrupted more than three times 4% per feeder per year
- Fraction of customers with an interruption over four hours 10% per feeder per year

A hypothetical feeder with the values of SAIDI, SAIFI, and the fraction of customers interrupted more than three times, and the fraction of customers with an interruption over four hours, equal to the 5-year averages would have a CPI value of 100. Any variations in the values of the above criteria would affect the CPI values in accordance with the weighting factors.

## PPL Electric Utilities Corporation Service Interruption Definitions

**Trouble Definitions:** After field investigations and repairs are complete, PPL Electric linemen report the cause of each case of trouble. This information is electronically recorded as a "cause code" number when the job record is closed. PPL Electric cause codes are subdivided into four general classifications: Controllable, Non-Controllable, Public and Non-PPL. The definitions of the cause codes are:

10 Improper Design	Controllable	When an employee or agent of PPL Electric is responsible for an error of commission or omission in the engineering or design of the distribution system. (Facility Records personnel use only)
11 – Improper Installation	Controllable	When an employee or agent of PPL Electric is responsible for an error of commission or omission in the construction or installation of the distribution system. (Facility Records personnel use only)
12 – Improper Operation	Controllable	When an employee or agent of PPL Electric is responsible for an error of commission or omission in the operation or maintenance of the distribution system. (Facility Records personnel use only)
30 – Trees – Trimming Related <sup>11</sup>	Controllable	Outages resulting from conductors contacted by tree growth within the clearance zone defined by the current trimming specification (within the Rights-of- Way).
35 – Trees – Not Trimming Related	Non- Controllable	Outages due to trees, but not related to lack of proper tree trimming maintenance. This includes danger timber blown into PPL Electric facilities, and trees or limbs felled by the public.
40 – Animals	Controllable	Any outage caused by an animal directly or indirectly coming in contact with PPL Electric facilities. This includes birds, squirrels, raccoons, snakes, cows, etc.
41 – Vehicles	Public	When cars, trucks or other types of vehicles or their cargoes strike facilities causing a problem.

<sup>&</sup>lt;sup>11</sup> The title and description of this code have been revised for clarity. The purpose and application of the code have not changed.

#### Appendix B

51 – Contact/Dig-in	Public	<ul> <li>When work in the vicinity of energized overhead facilities results in interruptions due to accidental contact by cranes, shovels, TV antennas, construction equipment (lumber, siding, ladders, scaffolding, roofing, etc.).</li> <li>When contact is made by a non-employee with an underground facility causing interruption.</li> </ul>
60 - Equipment Failure	Controllable	<ul> <li>Outages resulting from equipment failures caused by corrosion or contamination from build-up of materials, such as cement dust or other pollutants.</li> <li>Outages resulting from a component wearing out due to age or exposure, including fuse tearing or breaking.</li> </ul>
		<ul> <li>Outages resulting from a component or substance comprising a piece of equipment failing to perform its intended function.</li> </ul>
		<ul> <li>Outages resulting from a failure that appears to be the result of a manufacturer's defect or can not be described by any other code indicating the specific type of failure.</li> </ul>
77 – Non-PPL Problem – Other	Non-PPL	Where no PPL Electric or customer facilities were affected, and no repair or restoration was carried out on PPL Electric equipment.
78 - Non-PPL Problem - Customer Facility	Non-PPL	Where no PPL Electric facilities were affected, and no repair or restoration was carried out on PPL Electric equipment.
80 – Scheduled Outage <sup>12</sup>	Controllable	• Interruptions under the control of a PPL Electric switchman or direction of a PPL Electric System Operator for the purpose of performing scheduled maintenance, repairs and capacity replacements for the safety of personnel and the protection of equipment.
		<ul> <li>Includes requests from customers for interruption of PPL Electric facilities.</li> </ul>

<sup>&</sup>lt;sup>12</sup> Interruptions under the control of a PPL Electric switchman or the direction of a PPL Electric System Operator for the purpose of isolating damaged facilities to make repairs are reported using the initial cause of the damage when the interruption is taken <u>immediately</u>, but are reported as a scheduled outage when the interruption is <u>postponed</u>.

## Appendix B

85 – Directed by Non-PPL Authority	Non-Controllable	<ul> <li>Interruptions under the control of a PPL Electric switchman or direction of a PPL Electric System Operator for the purpose of dropping load or isolating facilities upon request during emergency situations.</li> <li>Interruptions which cannot be postponed or scheduled for a later time, and include situations like load curtailment during system emergencies, and requests of civil authorities such as fire departments, police departments, civil defense, etc. for interruption of PPL Electric facilities.</li> </ul>
90 - Other - Controllable (Lineman provides explanation)	Controllable	<ul> <li>Interruptions caused by phase to phase or phase to neutral contacts, resulting from sleet or ice dropping off conductors, galloping conductors, or any other phase to phase or phase to neutral contact where weather is a factor.</li> <li>Interruptions resulting from excessive load that cause</li> </ul>
		<ul> <li>that facility to fail.</li> <li>When restoration of service to a facility, which had been interrupted for repairs or other reasons, causes an additional interruption to another facility which had not been involved in the initial interruptions.</li> </ul>
		Controllable interruptions or Power Service     Problems whose cause is not described by one of the previous controllable cause codes.
96 Nothing Found	Non- Controllable	When no cause for the interruption can be found.  When there is no evidence of equipment failure, damage or contact after line patrol is completed. This could be the case during a period of heavy thunder and lightning, when a line fuse blows or a single phase OCR locks open.
		When closed for test, the fuse holds or the OCR remains closed. A patrol of the tap reveals nothing.
98 – Other Public (Lineman provides explanation)	Public	All outages resulting from gunfire, civil disorder, objects thrown, or any other act intentionally committed for the purpose of disrupting service or damaging company facilities.

### Appendix B

99 – Other – Non- Controllable (Lineman provides explanation)	Non- Controllable	<ul> <li>Any outage occurring because of a fire, flood or a situation that develops as a result of a fire or flood.</li> <li>Do not use when facilities are de-energized at the request of civil authorities.</li> </ul>
		When an interruption is caused by objects other than trees, such as kites, balls, model airplanes, roofing material, or fences, being accidentally blown or thrown into overhead facilities.
		All problems caused by contact of energized equipment with facilities of other attached companies or by trouble on customer owned equipment.
		• Interruptions or power service problems whose cause is not described by one of the previous non-controllable cause codes, but is not affected by a PPL Electric employee's decisions.

# PPL Electric Utilities Corporation Job Descriptions

#### Transmission and Distribution

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

#### Electrical

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

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