



411 Seventh Avenue, 15th Floor
Pittsburgh, PA 15219

Vernon J. Edwards
Manager, Regulatory Affairs

Telephone: 412-393-3662
Fax: 412-393-5687
vedwards@duqlight.com

L-00030161

April 30, 2014

Ms. Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
P. O. Box 3265
Harrisburg, Pennsylvania 17105-3265

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APR 30 2014

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

Re: Duquesne Light Company
2013 Annual Electric Reliability Report

Dear Secretary Chiavetta:

Please find enclosed for filing the 2013 Annual Electric Reliability Report of Duquesne Light Company.

If you have any questions regarding the information contained in this filing, please contact me at 412-393-3662 or vedwards@duqlight.com.

Sincerely,

Vernon J. Edwards
Manager, Regulatory Affairs

Enclosures

cc: (Public Version):
Bureau of Technical Utility Services
Office of Consumer Advocate
Office of Small Business Advocate



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APR 30 2014

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

***2013 Annual Electric Reliability Report
to the
Pennsylvania Public Utility Commission***

Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219

April 30, 2014

**DUQUESNE LIGHT COMPANY
2013 ANNUAL ELECTRIC RELIABILITY REPORT**

Filed April 30, 2014

57.195 Reporting Requirements

- (a)(2) **The name, title, telephone number and e-mail address of the persons who have knowledge of the matters, and can respond to inquiries.**

Ken Kallis – Manager, Asset Management
(412) 393-8613, kkallis@duqlight.com

Vernon J. Edwards – Manager, Regulatory Affairs
(412) 393-3662, vedwards@duqlight.com

- (b)(1) **An overall current assessment of the state of the system reliability in the electric distribution company's service territory including a discussion of the electric distribution company's current programs and procedures for providing reliable electric service.**

Duquesne Light Company's ("Duquesne Light" or "the Company") service territory covers approximately 817 square miles, with a well-developed distribution system throughout. Electric service reliability remains very consistent across the service territory. The combination of an effective outage restoration process and significant distribution automation allows the Company to quickly restore power to large numbers of customers in outage situations.

Achieving outstanding performance in system reliability continues to be one of Duquesne Light's most important long-term objectives. The Asset Management Group performs ongoing analysis of reliability indices, root cause analysis of outages, and tracking and monitoring of other performance measures. This is a long-term process to optimize reliability and to identify improvement opportunities. This includes making recommendations for capital projects such as circuit rehabilitation, new substations and distribution circuits. It also includes implementation of new advanced protection and coordination schemes on the distribution system that better localize customer outages and reduce momentary operations.

Duquesne Light continues its Emergent Work Process, which is used to identify problems, set priorities, and resolve reliability issues as quickly as possible. Each day, field personnel perform field inspections and any abnormalities are logged into a database. This database is reviewed regularly by the Emergent Work Team and any high priority problems are identified and a course of action is determined. Analysis at the device level is used to identify small areas where customers have experienced multiple outages. System level and even circuit level indices may mask these isolated problems. This is the short-term process for real-time analysis and reliability improvement.

Scheduled preventative and predictive maintenance activities continue to reduce the potential for future service interruptions. Corrective maintenance is prioritized with the objective to reduce backlog in the most cost-efficient manner.

Several capital budget projects target distribution reliability improvements, including pole replacement, substation rehabilitation, circuit load relief and voltage improvement, URD rehabilitation, circuit rearrangement and installation of additional automated remotely controlled pole top devices.

Specific programs, procedures and ongoing maintenance activities that support Duquesne Light's commitment to service reliability include:

- An Infrared Inspection Program that systemically identifies circuit and substation problems for remedial action in advance of failure.
- A Rights-of-Way Vegetation Management Maintenance Program with the goal of reducing tree and branch failures through proactive pruning and removal to increase clearances. Duquesne Light believes that this program will help to shorten the duration of outages by addressing targeted tree failure conditions that typically result in physical damage to our facilities.
- An all pulse-reclosing protection technology has been implemented on some 23kV circuits. This technology eliminates traditional "hard reclosing", thereby making it easier and faster to conduct repairs and restore circuits to normal operation, enabling customers to be restored more quickly. This technology also reduces stress and damage on the entire circuit since the breaker is no longer required to trip, also contributing to the reduction in momentary outages to customers.
- For newer distribution devices, a dedicated firmware upgrade program serves to keep devices working more reliably with improved features and functionality. These upgrades often correct problems or weaknesses that utilities have discovered during actual operation.
- Line maintenance work of various types is regularly performed in order to maintain distribution plant. This work includes replacement of cross arms, arrestors, insulators, and other equipment on the overhead system as well as inspections and remedial work on the underground system.
- Expanded Storm Preparedness Training is conducted each year and Storm Review Meetings are held following major events. These meetings focus on the successes and failures of the most recent emergency service restoration effort. Service restoration process improvements are made as needed to improve response time and effectiveness during the next restoration effort.

(b)(2) A description of each major event that occurred during the year being reported on, 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.

One PUC Major Event Exclusion – July 10, 2013.

Thunderstorms, heavy rains and winds gusting to 51 mph moved through Duquesne Light's service areas in Allegheny and Beaver counties, causing significant damage to poles, conductors, transformers and other equipment. This event caused service interruptions to approximately 60,388 customers from a total of 589,900 customers, beginning July 10, 2013 at 0500 hours, with full customer restoration on July 13, 2013 at 1600 hours. There were no procedures significantly modified due to this being a result of a single severe storm.

- (b)(3) **A table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the electric distribution company's service territory for each of the preceding 3 calendar years. The report shall include the data used in calculating the indices, namely the average number of customers served, the number of sustained customer minutes interruptions, the number of customers affected, and the minutes of interruption. If MAIFI values are provided, the number of customer momentary interruptions shall also be reported.**

**RELIABILITY BENCHMARKS AND STANDARDS
Duquesne Light Company
System Performance Measures with Major Events Excluded****

	SAIDI	SAIFI	CAIDI	MAIFI
2011	99	.93	107	*
2012	79	.67	117	*
2013	75	.62	121	*
3 Year Average	84	.74	115	*
Benchmark	126	1.17	108	NA

* Sufficient information to calculate MAIFI is unavailable.

Formulas Used in Calculating the Indices

$$\text{SAIFI} = \frac{(\text{Total KVA interrupted}) - (\text{KVA impact of major events})}{\text{System Connected KVA}}$$

$$\text{SAIDI} = \frac{(\text{Total KVA-minutes interrupted}) - (\text{KVA-minute impact of major events})}{\text{System Connected KVA}}$$

$$\text{CAIDI} = \text{SAIDI/SAIFI}$$

Data used in calculating the indices

2013

Total KVA Interrupted for the Period (Excluding July 10, 2013 Major Event)	4,432,987 KVA
Total KVA-Minutes Interrupted (Excluding July 10, 2013 Major Event)	536,328,687 KVA-Minutes
System Connected Load as of 12/31/13:	7,195,761 KVA
July 10, 2013 Major Event	724,661 KVA (10% of System Load)

178,805,024 KVA-Minutes

2012

Total KVA Interrupted for the Period
 Total KVA-Minutes Interrupted
 System Connected Load as of 12/31/12:

4,790,378 KVA
 560,098,427 KVA-Minutes
 7,120,660 KVA

2011

Total KVA Interrupted for the Period
 Total KVA-Minutes Interrupted
 System Connected Load as of 12/31/11:

6,552,567 KVA
 700,283,041 KVA-Minutes
 7,075,537 KVA

(b)(4) A breakdown and analysis of outage causes during the year being reported on, including the number and percentage of service outages 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.

January 1, 2013 through December 31, 2013 – One PUC Major Event Exclusion

CAUSE	NO. OF OUTAGES	OUTAGE PERCENTAGE	KVA TOTAL	KVA PERCENTAGE	KVA-MINUTE TOTAL	KVA-MINUTE PERCENTAGE
Storms	567	20%	693,008	16%	132,523,073	25%
Trees (Contact)	32	1%	24,678	1%	2,366,168	1%
Trees (Falling)	730	26%	1,380,004	31%	179,447,919	33%
Equipment Failures	706	25%	1,139,489	26%	128,816,022	24%
Overloads	174	6%	111,726	3%	12,475,141	2%
Vehicles	149	5%	339,741	8%	37,316,156	7%
Other	463	17%	744,341	15%	43,384,208	8%
TOTALS	2,821	100%	4,432,987	100%	536,328,687	100%

(b)(5) A list of remedial efforts taken to date and planned for circuits that have been on the worst performing 5% of circuits list for a year or more.

Duquesne Light has ten circuits that have been on the worst performing 5% of circuits list for four consecutive quarters. All of these circuits have received remedial action which is expected to improve their reliability in 2014. The Company will continue to monitor these circuits closely during 2014 to verify that the remedial actions taken have been successful and that reliability has improved. Many of the circuits have already shown improvement as indicated in the following detailed descriptions and have not seen a repeat outage for one or more months.

Rank	Circuit	Name	Service Center	Remedial Actions Planned or Taken
1	22869	Midland-Cooks Ferry	Raccoon	<p>In 2012, reliability issues on Midland-Cooks Ferry T22869 locked out the station breaker and other sub-transmission devices due to problems near Midland Substation which affected the downstream distribution portion of this circuit. The Company resolved these problems late in 2012 and reliability on this part of the circuit greatly improved during 2013. However, this circuit was kept on the Worst Performing Circuit List during the first and second quarters of 2013 as part of the monitoring process to verify that remediation efforts worked.</p> <p>For the third and fourth quarters of 2013, this circuit had reliability issues beyond single phase reclosers. Outages on these reclosers only affected a small number of customers near the end of the circuit. The problems causing these lockouts were resolved in late 2013 and reliability has improved.</p> <p>The Company made important reliability-targeted improvements to this circuit in late 2012 and in 2013 and are currently working on installation of four new advanced circuit reclosers on the sub-transmission portion of the circuit which will provide auto fault-clearing functionality. This will eliminate Loss-of-Supply outages to the distribution portion of the circuit in the future when problems occur on the sub-transmission portion. This work is scheduled to be completed early second quarter in 2014 before the start of storm season. Also in 2013, the distribution portion of this circuit was configured for all 3-phase pulse-reclosing operation. This reduces fault current and limits energy delivered to the actual fault during reclosing which minimizes damage to the circuit resulting in faster restoration and better reliability.</p>
2	4517	Sandy Creek	Penn Hills	<p>No new breaker outages occurred at Sandy Creek after the third quarter of 2013. To prevent future sub-transmission circuit outages from affecting Sandy Creek, the Company has installed two advanced circuit reclosers on this sub-transmission circuit. These advanced circuit reclosers automatically isolate a fault. This work was completed in the first quarter of 2014 before storm season. Because the advanced circuit reclosers' auto-fault clearing functionality will eliminate what were historically lengthy outages for customers on the Sandy Creek circuit, reliability is expected to improve in 2014.</p>

Rank	Circuit	Name	Service Center	Remedial Actions Planned or Taken
3	4279	Squaw Run	Edison	No new breaker outages occurred at Squaw Run since the third quarter of 2013. To prevent future sub-transmission outages from affecting Squaw Run, the Company has installed two advanced circuit reclosers on this sub-transmission circuit. These advanced circuit reclosers will automatically isolate a fault. This work was completed during the fourth quarter of 2013 and circuit reliability is expected to improve in 2014.
4	23690	B.I.	Preble	No new outages occurred on WA395 in 2013 after the end of the first quarter of 2013 but the Company has continued to monitor this circuit closely throughout the year because of past reliability problems. All previous outages were caused by tree related failures along a heavily wooded corridor that became unstable and prone to landslides which caused tree fall-ins. A developer has since stabilized the hillside along this corridor in order to build homes at the top. To maintain and improve the reliability of this circuit, the Company installed two new advanced circuit reclosers in 2013 on the main feeder and the entire circuit's protection was upgraded to an all pulse-reclosing configuration which reduces fault current and limits damage to the circuit during faults. Based on performance during the last three quarters, this circuit's reliability has improved significantly and is expected to move off the Worst Performing Circuit List in 2014.
5	4135	Eastwood	Penn Hills	No new breaker outages have occurred at Eastwood since the second quarter of 2013. To prevent future sub-transmission circuit outages from causing a substation outage at Eastwood, the Company installed two advanced circuit reclosers on this sub-transmission circuit. These advanced circuit reclosers will automatically isolate a fault. This work was completed during December of 2013. Note: Because the advanced circuit reclosers' auto-fault clearing functionality will eliminate what were historically lengthy outages for customers on the Eastwood circuits, reliability is expected to improve 2014.
6	4136	Eastwood	Penn Hills	
7	4138	Robinson	Penn Hills	No new breaker outages have occurred at Robinson since the second quarter of 2013. To prevent future sub-transmission circuit outages from causing a substation outage, the Company has installed two advanced circuit reclosers on this sub-transmission circuit. These advanced circuit reclosers allow DLC Operators to now quickly isolate a fault. The new advanced circuit reclosers were successfully installed during the first quarter of 2014. This will eliminate what were historically lengthy outages for customers on the Robinson circuits and reliability is expected to improve in 2014.
8	4139	Robinson	Penn Hills	

Rank	Circuit	Name	Service Center	Remedial Actions Planned or Taken
9	4154	Long	Penn Hills	<p>No new breaker outages occurred at Long since third quarter of 2013. To prevent future substation outages, the Company has installed two advanced circuit reclosers on this sub-transmission circuit. <i>These advanced circuit reclosers will automatically isolate a fault.</i> The new advanced circuit reclosers were successfully installed during the first quarter of 2014 before storm season. Because the advanced circuit reclosers auto-fault clearing functionality will eliminate what were historically lengthy outages for customers on the two Long circuits, reliability is expected to improve in 2014.</p>
10	4155	Long	Penn Hills	

(b)(6) **A comparison of established transmission and distribution inspection and maintenance goals/objectives versus actual results achieved during the year being reported on. Explanations of any variances shall be included.**

2013 Transmission and Distribution Goals and Objectives

Program Project	Unit of Measurement	Target for Year 2013	YTD Actuals Year 2013	Percent Complete
Communications Goals				
Telecom Battery Maintenance	Batteries	96	96	100%
Overhead Distribution Goals				
Recloser Inspections	Circuits	133	134	101%
Pole Inspections	Poles	17,689	17,992	102%
OH Line Inspections	Circuits	133	134	101%
OH Transformer Inspections	Circuits	133	134	101%
Padmount & Submersible Tfmr Insp	Circuits	83	83	100%
Overhead Transmission Goals				
Tower Helicopter Inspections	Number of Structures	500	500	100%
Tower Ground Detail Inspections	Number of Structures	300	300	100%
Substations Goals				
Breaker Maintenance	Breakers	855	857	100%
Transformer Maintenance	Transformers	71	71	100%
Station Battery Maintenance	Batteries	960	962	100%
Station Relay Maintenance	Relays	1,578	1,634	104%
Station Inspections	Sites	2,064	2,064	100%
Underground Distribution Goals				
Manhole Inspections	Manholes	720	741	103%
Network Vault Inspections	Ntwk Vault Sites	270	275	102%
Network Protector Inspections	Ntwk Protectors	586	604	103%
Network Transformer Inspections	Ntwk Tfmrs	586	604	103%
Underground Transmission Goals				
Pressurization and Cathodic Protection Plant Inspection	Work Packages	52	54	104%
Vegetation Management Goals				
Overhead Line Clearance	Circuit Overhead Miles	1,300	1,325	102%

2013 Maintenance Goals and Objectives -Year-End Variances

Duquesne Light did not have any variances from its maintenance goals and objectives.

(b)(7) A comparison of budgeted versus actual transmission and distribution operation and maintenance expenses for the year being reported on. Explanations of any variances shall be included.

**Budget Variance Recap – O&M Expenses
For the Twelve Months Ending December 31, 2013
Favorable / (Unfavorable)**

	Customer Care	External Affairs	Human Resources	Operations/ Operation Services	Technology	General Corporate*	Total
Total Actual	48,009,120	9,363,327	14,008,286	62,314,022	25,635,360	44,234,352	203,564,467
Total Budget	55,765,583	11,822,859	14,386,709	64,236,312	23,323,905	43,655,098	213,190,466
Variance	7,756,463	2,459,532	378,423	1,922,290	(2,311,455)	(579,254)	9,625,999

*Includes Finance, Office of General Counsel and Senior Management Costs

The year to date O&M underspend is due to headcount vacancies within the customer care, external affairs and operations departments, favorable bad debt expense and favorable surcharge variances. These favorable variances were partially offset with costs associated with higher than budgeted employee benefit expenses.

(b)(8) A comparison of budgeted versus actual transmission and distribution capital expenditures for the year being reported on. Explanations of any variances shall be included.

**Budget Variance Recap – Capital
For the Twelve Months Ending December 31, 2013
Favorable / (Unfavorable)**

	Customer Care	External Affairs	Human Resources	Operations/ Operation Services	Technology	General Corporate*	Total
Total Actual	2,759,795	9,203	10,801,574	151,215,472	45,554,799	33,042,899	243,383,742
Total Budget	2,712,965	0	11,470,657	198,187,100	34,408,069	28,024,304	274,803,095
Variance	(46,830)	(9,203)	669,083	46,971,628	(11,146,730)	(5,018,595)	31,419,353

*Includes Finance, Office of General Counsel and Senior Management Costs

The most significant driver to the 2013 Capital under spend is due to the timing of spend related to a municipal road project - Carson Street Rehabilitation. A significant portion of this project's spend has been to deferred to 2014 due to delays from the Penn Dot contractors.

Lower than historical costs associated with customer work also contributed to the under spend in 2013. Furthermore, several system improvement projects experienced delays that resulted in that schedules moving into 2014. Also, two projects were deferred due to higher than expected costs.

Duquesne Light's Transmission and Distribution Capital (e)(8) Budgets and Expenditures consist of the following work elements:

- Restoration of Service costs include expenses to restore service to customers during storm-related events, and restoration from outages caused by system and component equipment failures.
- Customer Commitment costs include expenses to satisfy residential, commercial, industrial and governmental initiated work requests.
- System Maintenance costs include expenses for programmed preventive and corrective maintenance work.
- System Improvement costs include expenses incurred to provide load relief in growth areas identified through system assessment, as well as continued targeted replacement of systems and components based on maintenance findings and trended useful life.
- Utility costs required to enhance and maintain systems and processes necessary in support of the utility operations including metering systems, technology development to satisfy hardware and system application needs, transmission and distribution planning, all revenue cycle processes and all Operations support and Administrative and General expenses.

(b)(9) **Quantified transmission and distribution inspection and maintenance goals/objectives for the current calendar year detailed by system area (i.e., transmission, substation, and distribution).**

2014 Transmission and Distribution Goals and Objectives

Program Project	Unit of Measurement	Target for Year 2014
Communications Goals		
Communication Battery Maintenance	Batteries	96
Overhead Distribution Goals		
Recloser Inspections	Circuits	133
Pole Inspections	Poles	17,690
OH Line Inspections	Circuits	133
OH Transformer Inspections	Circuits	133
Padmount & Below Grade Inspections	Circuits	83
Overhead Transmission Goals		
Helicopter Inspections	Number of Structures	500
Ground Inspections	Number of Structures	350
Substations Goals		
Breaker Maintenance	Breakers	715
Substation Transformer Maintenance	Transformers	67
Station Battery Maintenance	Batteries	980
Station Relay Maintenance	Relays	710
Station Inspections	Sites	2,100
Underground Distribution Goals		
Manhole Inspections	Manholes	700
Major Network Inspection (Prot Relay)	Network Protectors	92
Minor Network Visual Inspection (Transformer/Protector/Vault)	Network Transformers	573
Underground Transmission Goals		
Pressurization and Cathodic Protection Plant Inspection	Work Packages	52
Vegetation Management Goals		
Overhead Line Clearance	Circuit Overhead Miles	1,300

Justification for changes in tracking methods and terminology from 2013

Tower Helicopter Inspections (Number of Towers) was changed to prevent confusion of general term "Tower", we have chosen to use the word "Structure" in its place to account for transmission wood poles, steel poles and towers. (This has not changed any of our work practices)

Tower Ground Detail Inspections (Number of Towers) was changed to prevent confusion of general term "Tower", we have chosen to use the word "Structure" in its place to account for transmission wood poles, steel poles and towers. (This has not changed any of our work practices) The quantity was increased from 300 to 350 structures to align with our maintenance plan.

Manhole Inspections (Manholes) the quantity was reduced from 720 to 700 to align with our maintenance plan.

Network Vault Inspections (Network Vault Sites) this item has been removed from our tracking methods, we found that this metric was misleading and not useful to our maintenance plan. A vault may contain one to five network transformers/protectors, in our strive to move to electronic data entry this metric has been abandoned; with the development of our Major and Minor Network Inspection Program (pilot program).

Network Protector Inspections (Network Protectors) this inspection has changed with the development of our Major and Minor Network Inspection Program (pilot program). The old visual inspection that this number tracked will be done in conjunction with the Minor Network Visual Inspection. The new **Major Network Inspection (Prot Relay)** is a pilot program where we are doing a more thorough protector inspection beyond a visual inspection; our test plan is expected to change as we analyze the results and actual versus estimated time to complete an inspection. We have set an aggressive pace of targeting 92 of our protectors per year.

Network Transformer Inspections (Network Transformers) this inspection has changed with the development of our Major and Minor Network Inspection Program (pilot program). The new **Minor Network Visual Inspection (Transformer/Protector/Vault)** includes visual inspection of Transformer, Protector and Vault. This new program is in the beta stage of electronic entry, we have a goal of completing the transition from paper to electronic entry for these inspections by the end of first quarter.

(b)(10) Budgeted transmission and distribution operation and maintenance expenses for the current year in total and detailed by FERC account.

2014

BUDGET

Favorable / (Unfavorable)

	Customer Care	External Affairs	Human Resources	Operations / Operation Services	Technology	General Corporate *	Total
Total Budget	53,162,362	10,926,101	12,481,801	65,755,984	37,718,565	47,463,271	227,508,084

* Includes Finance, Office of General Counsel and Senior Management Costs

(b)(11) Budgeted transmission and distribution capital expenditures for the current year in total and detailed by FERC account.

2014

BUDGET

Favorable / (Unfavorable)

	Customer Care	External Affairs	Human Resources	Operations / Operation Services	Technology	General Corporate *	Total
Total Budget	4,082,130	0	11,978,638	154,563,074	49,482,172	29,065,872	249,171,886

* Includes Finance, Office of General Counsel and Senior Management Costs

The Duquesne Light 2014 Transmission and Distribution Capital (b)(11) Budgets and Expenditures consist of the following work elements:

- Restoration of Service costs includes expenses to restore service to customers during storm-related events, and restoration from outages caused by system and component equipment failures.
- Customer Commitment costs include expenses to satisfy residential, commercial, industrial and governmental initiated work requests.
- System Maintenance costs include expenses for programmed preventive and corrective maintenance work.
- System Improvement costs include expenses incurred to provide load relief in growth areas identified through system assessment, as well as continued targeted replacement of systems and components based on maintenance findings and trended useful life.
- Utility costs required to enhance and maintain systems and processes necessary in support of the utility operations including metering systems, technology development to satisfy hardware and system application needs, transmission and distribution planning, all revenue cycle processes and all Operations support and Administrative and General expenses.

(b)(12) Significant changes, if any, to the transmission and distribution inspection and maintenance programs previously submitted to the Commission.

On November 1, 2012, pursuant to 52 Pa. Code § 57.198(1), Duquesne Light Company filed, as an addendum to its third quarter 2012 Reliability Report, three proposed revisions to its Biennial Inspection, Maintenance, Repair and Replacement Plan. The proposed revisions were to (1) combine the two separate benchmark requirements, by county, into a single benchmark requirement; (2) increase the 4 kV recloser benchmark to reflect the actual number of 4 kV reclosers on the Company's distribution system; and (3) update and modify the information contained in the Inspection and Maintenance Plan relating to the Reference Documents.

Duquesne Light has not made any other significant changes to its transmission and distribution inspection and maintenance programs.