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April 30, 2018

E-FILED

Ms. Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
2nd Floor, Room-N201
400 North Street
Harrisburg, PA 17120

Re: **Duquesne Light Company 2017 Annual Electric Reliability Report**
Docket No. M-2016-2522508

Dear Secretary Chiavetta:

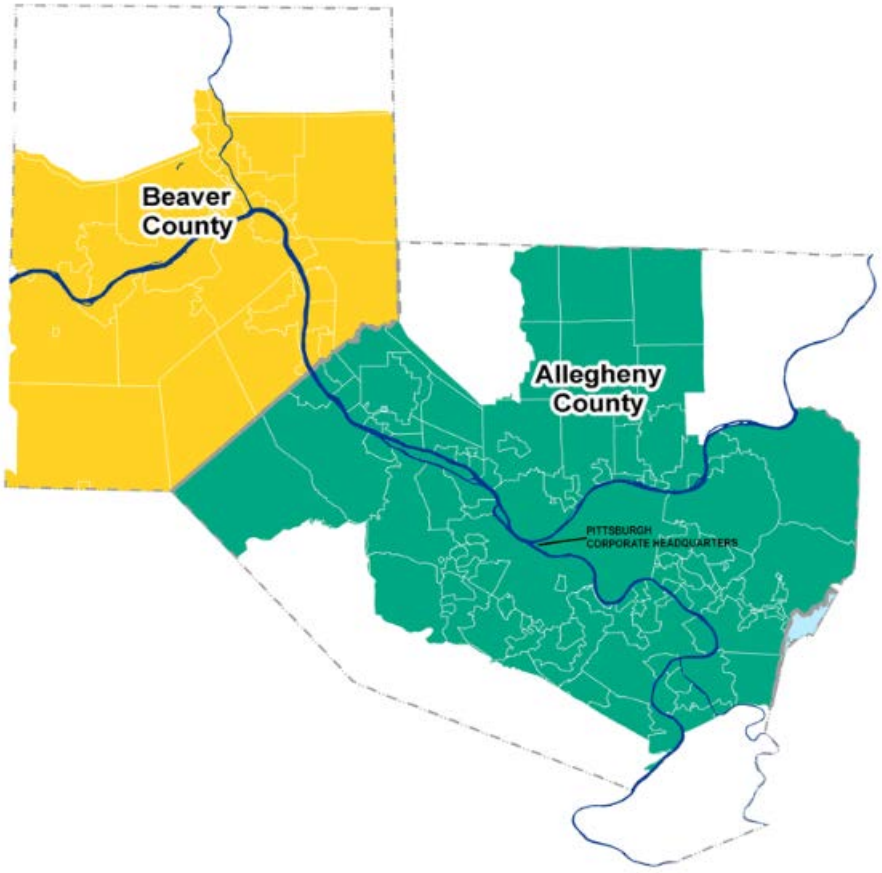
Please find enclosed for filing Duquesne Light Company's 2017 Annual Electric Reliability Report.

If you have any questions regarding the information contained in this filing, please contact myself or Audrey Waldock at 412-393-6334 or awaldock@duqlight.com.

Sincerely,

Shelby Linton-Keddie
Manager, State Regulatory Strategy
And Senior Legal Counsel

Enclosure
c (w/ enc):
Bureau of Technical Utility Services (dgill@pa.gov, dsearfoorc@pa.gov, dawashko@pa.gov)
Office of Consumer Advocate (TMcCloskey@paoca.org)
Office of Small Business Advocate (jorevan@pa.gov, swebb@pa.gov)



2017 Annual Electric Reliability Report

to the

Pennsylvania Public Utility Commission

Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219

April 30, 2018

DUQUESNE LIGHT COMPANY
ANNUAL ELECTRIC RELIABILITY REPORT

Filed April 30, 2018

52 Pa Code §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.

Matthew G. Bucek – General Manager, Asset Management
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Shelby A. Linton-Keddie – Manager, State Regulatory Strategy and Sr. Legal Counsel
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(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 designed 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 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 manage proper 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.

- 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.

- 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.

On April 20, 2017, the Commission adopted the Recommended Decision[1] approving the Company's amended LTIIP/DSIC and the Company has begun its accelerated infrastructure program.

[1] Petition of Duquesne Light Company for Approval of Its Long-Term Infrastructure Improvement Plan for period January 1, 2017 through December 31, 2022, Docket No. P-2016-2540046

(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.

No major events occurred during 2017.

(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
2015	71	0.75	95	*
2016	70	0.85	82	*
2017	112	0.97	115	*
3 Year Average	84	0.86	97	*
Benchmark	126	1.17	108	*

***** Sufficient information to calculate MAIFI is unavailable.

Formulas Used in Calculating the Indices

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

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

$$CAIDI = SAIDI/SAIFI$$

Data used in calculating the indices

2017

Total KVA Interrupted for the Period	7,069,591	KVA
Total KVA-Minutes Interrupted	812,332,647	KVA Minutes
System Connected Load as of 12/31/17:	7,259,129	KVA

2016

Total KVA Interrupted for the Period	6,163,842	KVA
Total KVA-Minutes Interrupted	505,272,030	KVA Minutes
System Connected Load as of 12/31/16:	7,210,354	KVA

2015

Total KVA Interrupted for the Period	5,417,502	KVA
Total KVA-Minutes Interrupted	513,565,543	KVA Minutes
System Connected Load as of 12/31/15:	7,203,346	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, 2017 through December 31, 2017 – No PUC Major Event Exclusions

CAUSE	NO. OF OUTAGES	OUTAGE PERCENTAGE	KVA TOTAL	KVA PERCENTAGE	KVA-MINUTE TOTAL	KVA-MINUTE PERCENTAGE
Storms	975	30%	2,166,639	31%	361,584,556	45%
Trees (Contact)	27	1%	2,208	1%	283,764	1%
Trees (Falling)	831	26%	1,516,585	21%	165,982,123	20%
Equipment Failures	628	19%	1,803,197	26%	157,179,133	19%
Overloads	35	1%	88,258	1%	7,090,861	1%
Vehicles	164	5%	510,456	7%	57,302,162	7%
Other	595	18%	982,248	13%	62,910,048	7%
TOTALS	**3,255**	**100%**	**7,069,591**	**100%**	**812,332,647**	**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 5 circuits that have been on the worst performing 5% of circuits list for four consecutive quarters. The majority of these circuits have received remedial actions or are scheduled for maintenance activities in 2018 that are expected to improve their reliability in 2018. The Company will continue to monitor these circuits closely during 2018 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.

Duquesne uses a sophisticated automated protection system on its 23kV circuits, which utilizes numerous 3-phase IntelliRupters, sectionalizers and reclosers on the main feeders and as ties to adjacent circuits. This automation technology with remote control generally allows circuit problems to be isolated and rerouted in less than 5 minutes. Generally, only a small portion of the customers on a worst performing circuit experience reliability issues.

Rank, Circuit Name, Device	Outages	Remedial Actions Planned or Taken
1 Traverse Run 23770 Recloser 100	Five Total Outages: Fourth Quarter 2017 Outages: • One outage was caused by tree fall in. Previous Outages: • The cause of one outage was unknown, during a storm. • One outage was caused by equipment failure, during a storm. • Two outages were caused by tree fall in.	• Permanent repairs were made following each outage as necessary. • The Company will continue to monitor this circuit for reliability issues. • Vegetation Management addressed identified reliability concerns in Q4 2017. • Protection Engineering will check this circuit for potential coordination issues by end of Q2 2018.
2 Midland-Cooks Ferry 22869 WR875	Four Total Outages: Fourth Quarter 2017 Outages: • Two outages were caused by tree fall in. Previous Outages: • One outage was caused by tree fall in. • The cause of one outage was unknown.	• Permanent repairs were made following each outage as necessary. • The Company will continue to monitor this circuit for reliability issues.
3 Pine Creek 23714 80E	Four Total Outages: Fourth Quarter 2017 Outages: • One outage was caused by tree fall in. Previous Outages: • Two outages were caused by tree fall in, one during a storm. • One outage was caused by excessive vine growth.	• Permanent repairs were made following each outage as necessary. • The Company will continue to monitor this circuit for reliability issues. • Routine vegetation maintenance was last performed in 2012 and is scheduled for 2018. • Protection Engineering will check this circuit for potential coordination issues by end of Q2 2018.

4 Montour 23670 WA527	Four Total Outages: Fourth Quarter 2017 Outages: • No outages. Previous Outages: • One outage was caused by equipment failure. • One outage was caused by tree fall in. • One outage was caused by contact with company equipment by vehicle. • The cause of one outage was unknown, during a storm.	• Permanent repairs were made following each outage as necessary. • The Company will continue to monitor this circuit for reliability issues. • Protection Engineering will check this circuit for potential coordination issues by end of Q2 2018.
5 Dravosburg 23750 65K	Three Total Outages: Fourth Quarter 2017 Outages: • No outages. Previous Outages: • Two outages were caused by tree fall in, one during a storm. • One outage was caused by contact with company equipment by animal, bird, or reptile.	• Permanent repairs were made following each outage as necessary. • The Company will continue to monitor this circuit for reliability issues. • Protection Engineering will check this circuit for potential coordination issues by end of Q2 2018.

(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.

2017 Transmission and Distribution Goals and Objectives

Program Project	**Unit of Measurement**	**Target for 2017**	**YTD Actuals for 2017**	**Percent Complete**
Communications Goals				
Communication Battery Maintenance	Batteries	100	101	101%
Overhead Distribution Goals				
Recloser Inspections	Circuits	130	130	100%
Pole Inspections[2]	Poles	17,945	22,841	127%
OH Line Inspections	Circuits	130	130	100%
OH Transformer Inspections	Circuits	130	130	100%
Padmount & Below Grade Insp	Circuits	81	81	100%
Overhead Transmission Goals				
Helicopter Inspections[3]	Number of Structures	625	693	111%
Ground Inspections	Number of Structures	336	363	108%
Substations Goals				
Circuit Breaker Maintenance[4]	Breakers	501	602	120%
Station Transformer Maintenance[5]	Transformers	78	88	113%
Station Battery Maintenance	Batteries	936	977	104%
Station Relay Maintenance	Relays	1,580	1,701	108%
Station Inspections	Sites	2,040	2,050	100%
Underground Distribution Goals				
Manhole Inspections	Manholes	700	709	101%
Major Network Insp (Prot Relay)	Ntwk Protectors	92	92	100%
Minor Network Visual Inspection (Transformer/Protector/Vault)	Ntwk Transformers	562	601	107%
Underground Transmission Goals				
Pressurization and Cathodic Protection Plant Inspection	Work Orders	371	396	107%
Vegetation Management Goals				
Overhead Line Clearance	Circuit Overhead Miles	1,300	1,322	102%

[2] Apart from DLC's normal inspection and maintenance schedule for pole inspections, in 2017 the Company engaged a third party contractor to inspect an additional 3,800 poles for quality assurance.

[3] The target for helicopter inspections is based on the entire system. Once the circuits to be inspected are identified the actual work performed may result in more units being inspected.

[4] The Company substation circuit breaker maintenance overage was the result of opportunistic work scheduling, as some tasks were completed ahead of time in conjunction with other field work activities.

[5] The Company substation transformer maintenance overage was the result of opportunistic work scheduling, as some tasks were completed ahead of time in conjunction with other field work activities.

(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, 2017
Favorable/(Unfavorable)

	Total Actual	Total Budget	Variance
Customer Service	55,524,764	55,970,179	445,415
Human Resources	14,853,712	16,335,411	1,481,699
Operations/Operation Services	60,077,388	64,737,900	4,660,512
Technology	50,836,699	48,834,711	(2,001,988)
General Corporate*	53,863,183	53,743,855	(119,328)
Total	235,155,746	239,622,056	4,466,310

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

The O&M expense underspend for the twelve months ended December 31, 2017 is attributable to a shift in the company's mix of vegetation management activities (Operations), favorable medical claims activity below industry trends (Human Resources), and slightly offset by unfavorability in the timing of spend related to surcharge program expense.

(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, 2017
Favorable/(Unfavorable)

	Total Actual	Total Budget	Variance
Customer Service	8,969,265	8,192,738	(776,527)
Human Resources	11,509,964	10,897,845	(612,119)
Operations/Operation Services	162,460,385	145,610,082	(16,850,303)
Technology	78,289,228	83,432,478	5,143,250
General Corporate*	24,864,217	24,401,918	(462,299)
Total	286,093,059	272,535,061	(13,557,998)

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

The capital spend overspend for the twelve months ended December 31, 2017 is attributable to both greater restoration costs associated with increased storm activities in 2017 and the timing of actual spend associated with some projects compared to their budgeted timing.

(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).

2018 Transmission and Distribution Goals and Objectives

Program Project	**Unit of Measurement**	**Target for Year 2018**
Communications Goals		
Communication Battery Maintenance	Batteries	124
Overhead Distribution Goals		
Recloser Inspections	Circuits	130
Pole Inspections	Poles	17,393
OH Line Inspections	Circuits	130
OH Transformer Inspections	Circuits	130
Padmount & Below Grade Insp	Circuits	80
Overhead Transmission Goals		
Helicopter Inspections	Number of Structures	533
Ground Inspections	Number of Structures	383
Substations Goals		
Circuit Breaker Maintenance	Breakers	610
Station Transformer Maintenance	Transformers	52
Station Battery Maintenance	Batteries	988
Station Relay Maintenance	Relays	1,391
Station Inspections	Sites	2,016
Underground Distribution Goals		
Manhole Inspections	Manholes	700
Major Network Insp (Prot Relay)	Network Protectors	92
Minor Network Visual Inspection (Transformer/Protector/Vault)	Network Transformers	576
Underground Transmission Goals		
Pressurization and Cathodic Protection Plant Inspection	Work Orders	372
Vegetation Management Goals		
Overhead Line Clearance	Circuit Overhead Miles	1,300

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

	Total Budget
Customer Service	$ 62,040,152
Human Resources	16,680,823
Operations/ Operation Services	63,683,038
Technology	51,498,196
General Corporate*	$ 48,863,899
Total	$ 242,766,108

*Includes Finance, Supply Chain, 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.

	Total Budget
Customer Service	$ 10,750,602
Human Resources	12,856,790
Operations/ Operation Services	230,131,752
Technology	58,977,693
General Corporate*	$ 31,144,378
Total	$ 343,861,215

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

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

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