

Pike County Light & Power Company
Annual Electric Reliability Report
2013 System Performance

April 2014

INTRODUCTION

Pursuant to the requirements of 52 Pa. Code § 57.195, Pike County Light & Power Company (“Pike” or the “Company”) submits this Annual Reliability Report (“Report”) to the Pennsylvania Public Utility Commission (“PAPUC”) for its 2013 system performance. Pike is an electric distribution company (“EDC”) which has approximately 4,500 electric distribution customers, thereby making it a “smaller EDC” for purposes of 52 Pa. Code § 57.195 (c). The Company is a utility subsidiary of Orange and Rockland Utilities, Inc. (“Orange and Rockland”). The Company, together with Orange and Rockland and Rockland Electric Company (i.e., Orange and Rockland’s New Jersey utility subsidiary), comprise the Orange and Rockland System.

§ 57.195. (b)(1) An overall assessment of the state of the system reliability in the EDC’s service territory including a discussion of the EDC’s current programs and procedures for providing reliable electric service.

Overall Current Assessment

The “Western Division” of the Orange and Rockland System includes the Company’s service territory, as well as portions of Orange County and Sullivan County in New York State, and portions of Sussex County in New Jersey. Pike County is the south-westernmost portion of the Western Division. Pike’s service territory in Pennsylvania is primarily fed from two 34.5 kV feeders that originate from New York Substations, i.e., Line 5-10 from the Cuddebackville Substation, and Line 7 from the Port Jervis Substation. The eastern portion of the Pike service territory is fed by two 13.2kV feeders from the Matamoras Substation that has ties to distribution circuitry from Orange and Rockland’s Port Jervis Substation, in New York, as well. The Matamoras Substation is fed from both Line 5-10 and Line 7, which back each other up through an automatic transfer scheme at the substation. The western portion of the Pike service territory is a radial feed from Line 7.

The PAPUC’s service reliability standards for Pike, last revised on August 17, 2006, are as follows:

- 12-Month System Average Interruption Frequency Index (“SAIFI”, or “Frequency”) of 0.82 interruptions per customer served;
- 12-month Customer Average Interruption Duration Index (“CAIDI” or “Restoration”) of 235 minutes of interruption per customer interrupted;
- 12-month System Average Interruption Duration Index (“SAIDI” or “Duration”) of 195 minutes per customer served.

In 2013, the Pike service territory experienced a Frequency of 1.21 interruptions per customer served, a Restoration of 209 minutes, and Duration of 253 customer-minutes of interruption. SAIFI was 48% above the standard, CAIDI was 26 minutes (11%) below the standard, and SAIDI was 58 minutes (30%) above the standard. These results are detailed on Page 5 of this Report, along with the most recent three-year history for these indices.

The three-year reliability standards for Pike are as follows:

Three-year annualized SAIFI of 0.67 interruptions per customer served;

Three-year annualized CAIDI of 192 minutes of interruption per customer interrupted; and

Three-year annualized SAIDI of 129 minutes per customer served.

For the three-year period ended December 2013, Pike experienced an annualized Frequency of 0.835 interruptions per customer served, a Restoration of 229 minutes, and Duration of 191 customer minutes of interruption.

There was one major event affecting Pike's service territory during 2013 that was accepted by the PAPUC for exclusion from the statistics. This major event affected 2,641 customers for a total of 5,362 customer-hours (321,721 customer minutes) of interruption, and is detailed on Page 4 of this Report. This major event was a lightning storm which occurred on July 7.

The table on Page 6 summarizes, by cause, Pike customer interruptions experienced in 2013, with pre-arranged outages and major events removed. The leading cause of outages is tree contact, with 25 interruptions affecting 1,115 customers for a total of 189,294 customer-minutes. The service reliability program targeted to manage these outages is the three-year, cycle-based tree clearance program. The most recent cycle was completed in 2012, and is scheduled next for completion in 2015. In addition, a Circuit Ownership Program was in effect in 2013, whereby circuits are patrolled by 'circuit owners' who identify and address circuit issues that will help to improve performance. This effort, along with the other service reliability programs that the Company implements, as are discussed later in this Report, are designed to target circuit equipment and conditions that will result in performance improvements.

The distribution inspection and maintenance goals/objectives and capital expenses, are listed starting on Page 7 of this Report. Pike has no transmission lines.

57.195. (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 to avoid or minimize the impact of similar events in the future.

Major Events

Date	Cause	Time	Duration (minutes)	Customers Affected	Cust Min of Interruption
7/7/2013	Lightning Storm	14:34	433	2,641	321,721
Total				2,641	321,721

July 7, 2013 Lightning Storm:

This incident was the result of extreme heat that entered the PCL&P service territory over the July 4th Holiday weekend and produced a lightning storm on the evening of July 7th. This storm inflicted damage on the system that developed into outages for several customers. PCL&P submitted this exclusion request to the Commission on July 26, 2013. The Commission approved this request.

57.195. (b)(3) A table showing the actual values of each of the reliability indices (SAIFI, CAIDI, SAIDI, and if available, MAIFI) for the EDC'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 interruptions, and 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 Indices
2011 - 2013**

Year	SAIFI	CAIDI	SAIDI	Average Number of Customers Served	Number of Interruptions	Customers Affected	Customer Minutes of Interruptions
2011	0.73	297	216	4,491	71	3,268	969,660
2012	0.57	185	104	4,494	55	2,542	468,931
2013	1.21	209	253	4,491	54	5,449	1,137,056

MAIFI data is not presently available.

§ 57.195. (b)(4) A breakdown and analysis of outage causes during the year being reported on, 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 identify service problems shall be reported.

Causes of Interruptions				
Cause	Number of Interruptions	Percent of Interruptions	Customers Affected	Cust Min of Interruption
Tree Contact	25	46%	1,115	189,294
Equipment Failure	13	24%	2,848	753,944
Lightning	1	2%	1	135
Animal Contact	5	9%	813	96,110
Unknown / Other	6	11%	494	74,348
Non-Comp. Accidents	4	7%	178	23,226
Customer Problem	0	0%	-	-
Overload	0	0%	-	-
Work Error	0	0%	-	-
Total	54		5,449	1,137,056

As noted in the above table, the primary cause of interruptions in 2013 was 'tree contacts'. The 2012 Pike distribution vegetation management program included the approximately 57 miles of the L7 and Substation 104 overhead primary system, which is the total of the Pike service territory. The next cycle based tree trimming is planned for 2015. This area is scheduled to undergo the established quarterly worst performing segment-based tree clearance program. During 2013, Pike also assisted municipalities in the removal of many hazard trees. This increase in requests can be directly linked to heightened awareness of the impact of trees on reliability. Tree issues are also reported and addressed during the Circuit Ownership circuit patrols.

§57.195(b)(5) A list of the major 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.

Pursuant to Pike's exemption as set forth in §57.195(c), and as discussed above, Pike is not required to address this subsection.

§ 57.195. (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.

**T/D
Inspection/Maintenance
Goals/Objectives**

Goals/Objectives vs. Results

For distribution goals and objectives, the Company focused on completing all scheduled preventive maintenance. As set forth below, Pike met these goals. Pike has no transmission facilities.

- **Distribution Vegetation Management**
While no vegetation management activity was scheduled for 2013, the Company responded to several requests from customers and municipalities for tree trimming and hazard tree removal.
- **Pole Inspection Program**
Due to being ahead of schedule in the Pole Inspection program, Pike performed no pole inspections in 2013.
- **Distribution Overhead Line Inspections**
The 2013 program included infrared inspecting all three-phase circuitry, which Pike completed as planned.
- **Power Quality**
The 2013 maintenance program required inspection of eleven capacitors and five regulators, which Pike completed as planned.
- **Recloser Program**
The 2013 maintenance program required inspection of three reclosers, which Pike completed as planned.
- **Substation Maintenance and Inspection Program.**
The 2013 program required completion of all inspection and maintenance requirements as listed in Appendix I for the Matamoras Substation, which Pike completed as planned.
- **Transformer Inspection Program.**
Pike inspected all of its 268 padmounted distribution transformers in 2013. This completes the padmounted transformer inspection portion of the PA I&M Plan until 2018.

§ 57.195. (b)(7) A comparison of budgeted versus actual transmission and distribution operation and maintenance expenses for the year being reported on in total and detailed by the EDC's own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.

T/D Operation and Maintenance

<u>2013 O&M Expenditures</u>	<u>2013 Budget(k\$)</u>	<u>2013 Actual(k\$)</u>
5600 OPERATION SUPERVISION AND ENGINEERING	13.1	2.6
5630 OVERHEAD LINE EXPENSES	5.7	3.3
5670 RENTS	0.0	0.3
5700 MAINTENANCE OF STATION EQUIPMENT TRANSMISSION	3.3	0.0
5710 MAINTENANCE OF OVERHEAD LINES TRANSMISSION	6.9	0.9
5800 OPERATION SUPERVISION AND ENGINEERING	102.7	309.3
5810 LOAD DISPATCHING	4.8	0.0
5820 STATION EXPENSES	48.2	3.5
5830 OVERHEAD LINE EXPENSES	24.6	72.2
5840 UNDERGROUND LINE EXPENSES	12.0	11.8
5860 METER EXPENSES	31.2	73.7
5870 CUSTOMER INSTALLATIONS EXPENSES	0.0	1.8
5880 MISCELLANEOUS DISTRIBUTION EXPENSES	143.6	199.6
5890 RENTS	0.7	0.0
5920 MAINTENANCE OF STATION EQUIPMENT DISTRIBUTION	12.5	1.7
5930 MAINTENANCE OF OVERHEAD LINES DISTRIBUTION	157.8	726.0
5940 MAINTENANCE OF UNDERGROUND LINES DISTRIBUTION	54.7	26.0
5960 MAINTENANCE OF STREET LIGHTING AND SIGNAL SYSTEMS	20.8	23.5
5980 MAINTENANCE OF MISCELLANEOUS DISTRIBUTION PLANT	0	2.0
Total Distribution	642.6	1,458.2

The 2013 Actual Operation and Maintenance Expenses exceeded the budgeted amounts by 126%.

- Corporate: Pike recently started to Amortize storm costs, which led to higher 2013 Pike spending of \$108K.
- Corporate: The amortization of the three year tree trimming cycle caused increased 2013 costs by \$78K.
- Electric Operations: Increased spending due to higher Customer/Municipal Calls/Assists associated with tree trimming by \$229k.
- Electric Operations: Performed Tree Trimming/Removal of "Danger Trees" resulting in \$200k of additional spending.
- Energy Control Center: Ops Dispatching by \$200k.

* Per PAPUC order granting deferral of incremental storm costs for Hurricane Irene (dated June 21, 2012) and Superstorm Sandy (Order Pending), Pike is expensing the deferred amount on a reasonable amortization schedule. The Order does not preclude Pike from seeking recovery of the total amount of deferred expenses.

§ 57.195. (b)(8) A comparison of budgeted versus actual transmission and distribution capital expenditures for the year being reported on in total and detailed by the EDC's own functional account code or FERC account code as available. Explanations of any variances 10% or greater shall be included.

T/D Capital Expenditures

Account#	Capital Project	2013 Budget(k\$)	2013 Actual(k\$)
330	2013 Electric Distribution Blankets - PA	\$ 365.41	\$ 349.57
330	2013 Transformers - PA OH (Incl Contributions)	38.1	0.0
330	2013 Transformers - PA UG (Incl Contributions)	14.3	0.0
330	2013 Circuit Reliability Blanket (PARC)	11.1	0.0
330	2013 Pole Inspection Blanket (PARC)	40.3	0.0
330	US 209-Cummins Hill Rd to Ryan	683.8	405.6
330	2013 Electric Meter Purchases Bkt - PA	25.0	24.2
330	2013 Electric Meter 1st Installs Bkt - PA	40.9	7.7
Total Capital		\$ 1,219.05	\$ 787.04

The 2013 overall Capital Expenditures were under by 35% vs. budgeted. The underrun was the result of Electric Distribution Blankets work and Transformer purchases. 2013 Circuit Reliability/Pole inspection blankets, the contract with OSMOSE (contractor) expired 6/20/13 and was not renewed until 9/1/13. Since the contract lapsed and demobilize, they were unable to remobilize until January 2014. The inspections will take place in 2014. US 209-Cummins project spending was carried over into 2014. For 2013 Meter 1st Install, the projected pilot project to install the Itron meters did not occur due to Itron not releasing the meters to production.

§ 57.195. (b)(9) Quantified transmission and distribution inspection and maintenance goals/objectives for the current calendar year detailed by system area (that is by transmission, substation and distribution.)

**T/D
Inspection and Maintenance
Goals/Objectives
Quantified**

Inspection and maintenance programs, designed with the intention of improving frequency of interruption and minimizing the resultant increases in restoration (as frequency is improved), have been in effect in Pike's service territory for over ten years. In addition, the "Biennial Inspection, Maintenance, Repair and Replacement Plan" became effective on January 1, 2012. This plan along with the associated programs are focused on field facilities and customer satisfaction, and are effective in minimizing the probability of an interruption while limiting the number of customers affected per interruption. The major programs are:

- **Distribution Vegetation Management**
Spot trimming and hazard tree removal are performed as conditions are identified. The next trim cycle is schedule for 2015.
- **Pole Inspections Planned**
350 Poles are scheduled to be inspected in 2014
- **Power Quality**
The 2014 maintenance program will require inspection of eleven capacitors and five regulators.
- **Recloser Program**
The 2014 maintenance program will require inspection of three reclosers
- **Substation Maintenance and Inspection Program**
The 2014 maintenance program will require the completion of all monthly and annual inspection and maintenance requirements as listed in Appendix I for the Matamoras Substation.
- **Distribution Overhead Line Inspections**
Three circuits with a combined mileage of 37.04 miles are scheduled to be inspected in 2014.
- **Distribution Transformer Inspections**
In 2014, 368 overhead transformers are scheduled to be inspected. The overhead line inspection program and pad mount transformers will be inspected at least once every five years.

§ 57.195. (b)(10) Budgeted transmission and distribution operation and maintenance expenses for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.

T/D Operation and Maintenance

O&M Accounts	2014 Budget(k\$)
5600 OPERATION SUPERVISION AND ENGINEERING	14.7
5630 OVERHEAD LINE EXPENSES	5.7
5700 MAINTENANCE OF STATION EQUIPMENT TRANSMISSION	3.3
5710 MAINTENANCE OF OVERHEAD LINES TRANSMISSION	8.8
5800 OPERATION SUPERVISION AND ENGINEERING	106.5
5820 STATION EXPENSES	49.3
5830 OVERHEAD LINE EXPENSES	27.7
5840 UNDERGROUND LINE EXPENSES	32.2
5860 METER EXPENSES	33.9
5870 CUSTOMER INSTALLATIONS EXPENSES	0
5880 MISCELLANEOUS DISTRIBUTION EXPENSES	201.3
5890 RENTS	0.7
5920 MAINTENANCE OF STATION EQUIPMENT DISTRIBUTION	12.8
5930 MAINTENANCE OF OVERHEAD LINES DISTRIBUTION	156.5
5940 MAINTENANCE OF UNDERGROUND LINES DISTRIBUTION	51.8
5960 MAINTENANCE OF STREET LIGHTING AND SIGNAL SYSTEMS	18.9
Total Distribution	\$ 724.1

§ 57.195. (b)(11) Budgeted transmission and distribution capital expenditures for the current year in total and detailed by the EDC's own functional account code or FERC account code as available.

T/D Capital Expenditures

Account#	Capital Project	2014 Budget(k\$)
330	2014 Electric Distribution / Transformer Blankets - PA	\$ 264.59
330	2014 Circuit Reliability Blanket (PARC)	11.2
330	2014 Pole Inspection Blanket (PARC)	40.4
330	2014 Electric Meter Purchases Bkt - PA	29.7
330	2014 Electric Meter 1st Installs Bkt - PA	40.9
Total Capital		\$ 386.81

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

**T/D
Inspection and Maintenance
Programs
Significant Changes**

Inspection & Maintenance Changes

There were no significant changes to Pike's Inspection and Maintenance programs in 2013. Inspection programs in 2014 will be performed in accordance with the Company's "Biennial Inspection, Maintenance, Repair and Replacement Plan" filed with the PAPUC.

Appendix I Substation Maintenance and Inspection Program

Item Description:

Examine individual utility substation maintenance programs to validate proper maintenance procedures and verify that maintenance is being performed. Review recent operating data to verify that no adverse trends exist.

Company Program:

The following details the different class inspections and maintenance programs performed by the Substation Operations Department, and their associated time cycles. Intervals vary depending on equipment type, style and maintenance history.

CLASS #1 INSPECTION - Monthly

- Visual inspection of transformers and oil breakers for oil leaks, oil levels, nitrogen pressure, connections, condition of bushings and Oil Circuit Breaker (“OCB”) operating mechanism.
- Visual inspection of battery banks, chargers, control board indicating lights, control house lights, yard lights.
- Visual inspection of minor equipment including Potential Transformers (“PTs”), Current Transformers (“CTs”), Capacitive Coupled Potential Devices (“CCPDs”), disconnect switches and bus connections.
- Visual inspection of all structures, fences and yard surfaces.
- Counter readings taken of OCBs, Gas Circuit Breakers (“GCBs”), reclosers and tap changers.

STATION BATTERY TESTS - Annually

Measure specific gravity and cell voltage. Test with Battery Impedance Testing Equipment. Clean batteries.

FANS, PUMPS, HEATERS AND COMPRESSORS - Annually

Check for proper operation prior to winter for heaters and compressors and prior to summer for fans and pumps.

TRANSFORMER GAS-IN-OIL ANALYSIS - Annually

Take oil sample from each power transformer compartment and analyze for combustible gas content.

DOBLE POWER FACTOR TEST - Every Three - Ten Years

Use Doble instrument to measure the integrity of the insulating medium of certain device.

OCB TIMING - Every Three - Ten Years

Check the time it takes for each operation of certain breakers.

RELAY MAINTENANCE - Every Four Years, Electromechanical; Six Years Microprocessor Based, With Self-Check.

Clean, test and calibrate as required all relays involved in protective relay schemes. After testing and calibrating, perform a trip test to verify proper operation.

CLASS #3 INSPECTION - Every Three – Ten Years

The Class #3 inspection on transformers is to include, but is not limited to the following items:

1. Test oil;
2. TTR - Test, meggar test;
3. Inspect all connectors, bushings;
4. Inspect for leaks (oil - nitrogen);
5. Check CT connections, alarm systems on banks; and
6. Doble Power Factor Test.

Transformers With Load Tap Changers

7. Test Oil in LTC cabinet; and
8. Test LTC control for proper operation.

The Class #3 inspection on OCB's is to include, but is not limited to the following items:

1. Test Oil;
2. DLRO (Ductor Test) before and after;
3. Inspect and clean control cabinet;
4. Inspect and clean Pneumatic-Hydraulic or spring charged operating system; and
5. Operational Test.

The Class #3 inspection on reclosers is to include, but is not limited to the following items:

1. Test Oil ;
2. DLRO (Ductor Test) before and after;
3. Control cabinet clean, checkout and operational test; and

Reclosers With Vacuum Bottles

4. Hi-Pot test.

The Class #3 inspection on ACB's is to include, but is not limited to the following items:

1. DLRO (Ductor Test) before and after;
2. Inspect all contacts (action to be taken, if needed);
3. Inspect and test all Micro and Aux. contacts (close and trip circuit); and
4. Operational Testing

CLASS #4 INSPECTION - Various intervals (four - twelve years or as necessitated by Class #3 Inspection results) dependent on equipment type, style and maintenance history.

The Class #4 inspection consists of a thorough inspection and testing of the apparatus listed below.

The Class #4 also includes all inspections included in a Class #3.

Transformers With Load Tap Changer

5. Drain oil from LTC cabinet, inspect all contacts;
6. Inspect and tighten all connections;
7. Clean complete LTC cabinet;
8. Filter or replace oil; and
9. Test LTC control for proper operation.

The Class #4 inspection on OCB's is to include, but is not limited to the following items:

1. DLRO (Ductor test) before and after;
2. Drop tanks - inspect and tighten all connections. Clean all parts and tanks;
3. Test and filter or replace oil;
4. Inspect and clean control cabinet;
5. Inspect and clean Pneumatic-Hydraulic or spring charged operating systems; and
6. Operational Test.

The Class #4 inspection on reclosers is to include, but is not limited to the following items:

1. Drop tank (filter or replace oil);
2. Inspect all contacts - repair or replace (depending on the condition);
3. Check and tighten all connections;
4. Control cabinet, clean and checkout;
5. DLRO (Ductor Test) before and after; and
6. Operational Test.

Recloser With Vacuum Bottles

7. Hi-Pot test.

The Class #4 inspection on ACB's is to include, but is not limited to the following items:

1. DLRO (Ductor Test) before and after;
2. Inspect all contacts - clean and put protective grease coating on;
3. Inspect and clean all ARC chutes;
4. Inspect and test all Micro and Aux. contacts (close and trip circuit);
5. Check and tighten all connections; and

6. Operational Test.

References:

All inspection and maintenance records are retained as a hard copy for one year at Orange and Rockland's main Operating Division headquarters. These records are also retained electronically on a work management system. Repeated callouts and equipment failures that show an abnormal trend are flagged by the work management system.

The Doble power factor testing, transformer gas in oil analysis, and infrared inspection records are stored electronically on the Substation Information System ("SIS"). OCB timing maintenance records are presently kept on a separate electronic storage system that is provided with the test equipment.