



Orange & Rockland

**Pike County Light & Power Company
2016 Summer Readiness Overview**

June 1, 2016

System Overview

Pike County Light & Power Company (“PCL&P” or the “Company”) is an electric distribution company (“EDC”) which has approximately 4,550 delivery customers. The Company is a wholly-owned subsidiary of Orange and Rockland Utilities, Inc. (“O&R”). PCL&P’s service territory is fed via two 34.5 kV feeders that originate from New York substations in the O&R service territory, i.e., Line 10 from the Cuddebackville Substation and Line 7 from the Port Jervis Substation. The eastern portion of the PCL&P service territory is fed by two 13.2 kV feeders from the Matamoras Substation that has ties to distribution circuitry from O&R’s Port Jervis Substation, as well. The Matamoras Substation is fed from Line 10, with a backup feed from Line 7. The two feeders also reinforce each other through an automatic transfer scheme at the substation.

The western portion of the PCL&P service territory is fed radially at 34.5 kV from Line 7, with several step transformers serving load at either 2.4 kV or 13.2 kV. The main line segment of Line 7 currently has four reclosers installed on it. These reclosers are spaced to optimize system performance and service reliability, and to reduce exposure and number of customers affected under contingency conditions.

A. Reliability Enhancement Programs

a. Enhanced Vegetation Management

The Company has been effective in removing danger trees. The Company routinely removes those danger trees within rights-of-way areas when identified. Those danger trees that exist outside of the Company's right-of-way areas can only be removed with customer or municipal authorization. PCL&P has begun tracking danger trees that it is unable to mitigate. PCL&P regularly works with the County Commissioners' office, the Boroughs of Matamoras and Milford, the Townships of Westfall and Milford, and the Milford Shade Tree Commission, to address danger trees that represent a hazard to the Company's electrical system but are located outside of right-of-way areas. In 2015, PCL&P coordinated the removal of many of these danger trees previously identified along Route 209, an area that has historically been a problem due to tree contact related outages.

b. Storm Hardening

There has been no Storm Hardening Projects performed in PCL&P’s service territory.

c. Fuses/Reclosers/automatic switches

There are currently four reclosers in service on Line 7 which sectionalize the circuit to minimize the number of customers affected during fault conditions. These units are functionally tested once every three years. The Company also completes a visual inspection

and download of each unit annually. These tests verify availability when system activity increases due to storm or other activity on the circuits.

d. Smart Grid

The SCADAMATE Switch was installed on the 34.5kV Line 7 in 2005 to work with the Vista Switch at the Matamoras Substation. However, no Smart Grid has been installed on the 13kV circuits in PCL&P's service territory.

e. Conservation Voltage Reduction (CVR) activity

Matamoras Bank 1104 is part of the NYISO voltage reduction plan. When called for, the substation transformer is set to reduce 117Volts.

f. Any other relevant continual improvement activity

In 2015, PCL&P continued upon the Reliability Action Plan it initiated in 2014. The Company expanded on the usage of smart fault indicators ("SFI"). These devices allow for automatic and remote notification of any power disturbances in coverage zones, such as transient and permanent faults. SFIs significantly reduce outage response time by directly identifying faulted zones, thereby directly reducing circuit patrol times and customer outage durations. The Company also completed the second phase of a reliability improvement project installing an additional mainline circuit feed on Old Milford Road.

B. Preventative Maintenance Programs

a. Capacitor Inspections

Pike uses a combination of eleven fixed and automatically switched capacitor banks to maintain system voltage throughout the year. In addition, PCL&P has five distribution voltage regulators to help maintain nominal system voltage level throughout peak and off-peak load cycles. These units are all tested annually to verify readiness for summer peak loading when the devices are needed most. The Company completed functional tests for all capacitor banks during the spring of 2016. All capacitor banks and voltage regulators are in good condition and ready for the summer period.

b. Vegetation Management

The Company's vegetation management program consists of: (1) a not to exceed five-year scheduled preventive vegetation management cycle; (2) a danger tree removal program; and (3) a hot spot trimming program that is applied as necessary. Scheduled preventive vegetation management work took place in 2015 and will be performed again in 2017. This

program increases the clearance between vegetation, specifically trees, and the distribution system primary conductors. Routine circuit patrols are performed that identify any significant or pressing conditions, such as danger trees, that must be addressed immediately or in the near term. The Company performs circuit patrols regularly after significant storms or major events have affected the electric delivery system. In addition, the Company supports a strong outreach program that results in customers and municipalities notifying it of conditions requiring action.

c. Substation Inspections

All substation maintenance is performed in accordance with the “Substation Maintenance and Inspection Program” that is detailed and included in the Pike County Light & Power Annual Electric Reliability Report. The Company has performed such maintenance on the Matamoras as well as the Port Jervis and Cuddebackville substations. These substations that serve the PCL&P service territory are in good condition and are ready for the summer period.

d. Aerial Patrols

PCL&P does not conduct aerial patrols of its distribution system.

e. Infrared Inspections

The Company inspects all three phase mainline circuitry annually using thermal infrared cameras. This program identifies “hot” spots which indicate overheating of distribution system components, the result of which could be a potential failure if not addressed. Anomalies are prioritized and repairs initiated based on the thermal measurements of the detected anomalies. The inspection is performed when system loads are high enough to generate the thermal anomalies and is typically scheduled to commence in the summer months and as system conditions permit. Single phase circuitry is inspected on a three-year cycle.

f. Any other relevant continual improvement activity

The Company inspects the overhead lines of the PCL&P distribution system every two-years. These inspections identify abnormal conditions and verify satisfactory transformer conditions. Our distribution pole inspection program is on a twelve-year cycle and verifies pole strength and other attributes that could impact reliability.

C. Capacity Planning

PCL&P's 2015 peak system load was 16.4 MVA as recorded on July 20 at 17:00. Although this appears to be a drop in demand since the historical peak of 18.96 MVA recorded on July 22, 2011, the two loads were at different temperature variables ("TV"). The 2011 peak occurred at a TV of 86.5°, while the TV for 2015 was only 81.8°. The design TV is 85°. In addition, PCL&P has made power factor improvements and the addition of solar units have impacted total system loading. Although this area has experienced a 1.71% annual increase in electric demand from 2013 to 2015, the growth rate has reduced below 0.5% for the past year. In 2013, the Company commenced a mainline parallel path to Line 7 along Old Milford Road from Roberts Lane to approximately Pocono Drive, in order to improve reliability. In 2015, this mainline extended along Old Milford Road to approximately Whetfield Drive.

In 2015, Orange and Rockland entered into a stock purchase agreement with Corning Natural Gas Holding Corporation ("CNGHC") whereby Orange and Rockland will transfer all of its ownership interests in PCL&P to CNGHC. Orange and Rockland currently expects that this transaction will close in 2016.

D. 2015/2016 Storm Update and Lessons Learned

PCL&P experienced no storm events in 2015.

E. 2016 Summer Readiness

a. Capacity Additions

O&R's Port Jervis Substation is scheduled for upgrade in 2018/19. The 20 MVA single bank station will be replaced with a station consisting of two 69/13.2 kV, 50 MVA banks. However, with only enough room to install one additional transformer (single 69/34.5 kV bank), reliability for PCL&P's service territory will not significantly improve with this project alone, as it would remain on a radial bank feed containing limited backup. Consequently, a second station (i.e., Deerpark Substation) is scheduled for construction in 2017. This station will consist of two 69/34.5 kV, 50 MVA transformers that will intercept the two 34.5kV feeds and provide primary/backup service for PCL&P's service territory. This will improve source, reliability and capacity to PCL&P's service territory for both normal and contingency conditions with minimal impact during the construction of the Port Jervis Substation.

b. Transmission Preparedness

PCL&P owns no transmission facilities.

c. Event Preparedness

The Company continually monitors weather conditions and forecasts throughout the year, especially during the summer months when there is a greater likelihood for thunderstorms to occur. In addition to two full-time staff meteorologists, the Company uses several paid weather forecasting services and real-time feedback from field personnel to help guide the decisions necessary to staff for potential events.

d. Training

The training programs described herein are Orange and Rockland's training programs. These program benefits transfer directly to the support of PCL&P, as the PCL&P system is served by the O&R transmission and distribution system.

i. Electric Operations Training Programs

The skills development and training program utilizes competency-based hands on training that transfers the learning responsibility from the instructor to the student. Students read material, practice under the guidance of journeymen linemen, are tested and must demonstrate proficiency. Progression testing is fundamental to the success of the program as competency in each skill or task is essential to advance to the next learning step. All the instructors are fully qualified high voltage linemen and the training complies with all OSHA regulations, especially as it pertains to "Qualified Worker" and employee safety.

The program encompasses 13 weeks of guided instruction over a 42-month period. The remainder of the time is spent in the field learning and refining practical skills. To keep current in environmental health and safety practices, employees' skills are refreshed at predetermined intervals, usually annually. Line skills are also updated continually as new work procedures or equipment is introduced to the system.

ii. Substation Operations Training Programs

The Substation Operations training program presently in place was revised and implemented in 2010. It established an extensive three-year training program, including progression testing, for a new applicant to the Electrician classification. A new applicant must pass an entry level test and physical requirements to be considered for the program. Upon entering the program there is a 90-day qualifying period which includes basic skills and safety training, with validated testing and minimum passing grade requirements. An applicant that is accepted and elects to remain after the 90-day qualifying period then enters a more extensive training

program, which combines safety, classroom and on the job training with progression testing, over a three-year period, to become a fully qualified 1st class Electrician.

A minimum of eight hours of refresher training for job skills is also provided annually. Each employee receives this refresher training, which is in addition to the required annual environmental health and safety training. This refresher training usually focuses on the operation and maintenance of new equipment, and in keeping abreast of new technologies.

e. Personnel sufficient

O&R, PCL&P and Orange and Rockland’s New Jersey subsidiary, Rockland Electric Company (“RECO”) operate a single fully integrated electric system. Neither PCL&P nor RECO has any operating employees. O&R provides the personnel required to operate and maintain the electric distribution facilities in PCL&P’s and RECO’s service territories. While there is a satellite facility located within the PCL&P service territory, the PCL&P service territory is also served from crew locations in Rockland and Orange Counties in New York, and Bergen and Passaic Counties in New Jersey. Thus, the following table summarizes the number of Electric Operations personnel that are available to operate and maintain the PCL&P electric delivery system.

Department	Union	Management	Total
Electric Operations – OH Line	103	22	125
Electric Operations – EHV	10	1	11
Electric Operations – UG Line	37	5	42
Substation Operations – Substation	26	4	30
Substation Operations – Relay	12	3	15
Troubleshooter	18		18
Total	206	35	241

PCL&P regularly supplements its Electric Operations workforce with tree trimming contractor crews as well as overhead and underground contractors on an as needed basis. These contractor crews are also available for any adverse system conditions or major events that would warrant their use in the PCL&P service territory.

F. Storm Response

a. Outage Restoration Strategy

The Company has modified its operational procedures so as to decrease response time to large outages by calling a supervisor and multiple construction crews at the same time that the Company’s troubleshooter crew is called out to respond. PCL&P also has expanded its

customer outreach efforts. Company executives met with local residents, community leaders and business owners to review system performance and outline short-term corrective action initiatives and potential long-term system improvement plans. Also, in an effort to enhance the reliability of its electric distribution system, PCL&P developed and submitted to the PAPUC a Reliability Action Plan (“RAP”) on October 3, 2014.

b. Communications and Outreach

PCL&P conducts a Community Response Team (CRT) table top exercise and drill at the Pike County Office of Emergency Management on an annual basis. The purpose of the exercise and drill is to familiarize both CRT and County/Local Public officials with PCL&P’s emergency response communications.

c. Outage restoration and storm response best practices implemented and/or identified for future implementation

Storm staffing of both Company and contractor personnel are set using the Company Storm Classification Matrix as a guide, which outlines minimum staffing levels based on a combination of expected weather conditions and anticipated customer outages. When activated, the Community Response Team, in conjunction with the Priority Restoration Group, will continually update emergency and municipal officials prior to and during system emergencies.

Public and employee safety are paramount in setting restoration priorities and coordinating restoration efforts. It is the Company’s focus to make conditions safe, restore utility service to the communities as quickly as possible, and manage repairs throughout the event. The following represents the general sequence for the restoration of the electric delivery system:

- Safety concerns including, but not limited to:
 - Wires down in heavy pedestrian areas or state or emergency service road closures; and
 - Municipally reported wires down or road closures;
- Critical facilities, including hospitals, police and fire stations, water supply and sewage;
- All other wires down and road closures and all distribution circuit lockouts; and
- All other affected customers prioritized by highest customer count.