

Pike County Light & Power Company
2013 Summer Reliability Outlook

June 28, 2013

System Overview

Pike County Light & Power Company (“PCL&P” or the “Company”) is an electric distribution company (“EDC”) which has approximately 4,500 delivery customers. The Company is a subsidiary of Orange and Rockland Utilities, Inc. (“O&R”). PCL&P’s service territory is fed primarily from two 34.5kv feeders that originate from New York substations in the O&R service territory: Line 5-10 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 13.2kv feeders from the Matamoras Substation that has ties to distribution circuitry from O&R’s Port Jervis Substation in New York as well. The Matamoras Substation is fed from both Line 7 and Line 5-10, which reinforce each other through an automatic transfer scheme at the substation. The western portion of the PCL&P service territory is fed radially from Line 7 and has numerous step transformers which serve load at 2.4kv and 13.2kv. The Line 7 main line currently has three reclosers to reduce exposure and number of customers affected under contingency conditions. After maintaining an annual demand growth over 2% from 2000 to 2011, the demand growth has reduced to 1.1% for 2012.

Reliability Enhancement/Preventative Maintenance Programs

The Company utilizes several proactive and prescriptive maintenance programs to support electric distribution system reliability.

- **Vegetation Management**

The Company’s vegetation management (“VM”) program consists of a three-year cycle based tree clearance program, the removal of danger trees, and “hot” spot trimming as necessary. In 2012, PCL&P’s distribution VM program covered the entire PCL&P service territory, including the approximately 57 miles of Line 7 and the Matamoras Substation overhead primary system. This area is scheduled to undergo the three-year distribution cycle again in 2015. During 2012, PCL&P also assisted its municipalities in the removal of hazard trees. In addition to the scheduled distribution VM and hazard tree work performed in 2012, PCL&P completed major restoration efforts, including removing trees and limbs from the distribution system in response to Superstorm Sandy. Following the restoration response, the PCL&P VM department completed a thorough post-event patrol focused on finding and remediating vegetation related conditions to improve electrical reliability and safety to our customers.

- **Infrared Inspection Program**

PCL&P's three-phase mainline circuitry is inspected annually using thermal infrared cameras. This program identifies "hot" spots which indicate heating of distribution system components and potential failure points. 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 currently scheduled to commence in July 2013 as system conditions permit.

- **Power Quality**

PCL&P utilizes eleven automatically switched and fixed capacitor banks to maintain system voltage throughout the summer period. These units are inspected and functionally tested annually prior to the summer peak loading periods. These inspections were completed by June 1, 2013. In addition, PCL&P has six line voltage regulators that assist in the maintenance of proper distribution voltage levels throughout peak and off-peak load cycles. These units are also tested annually to verify readiness for summer peak loading when the devices are needed most. All capacitors and regulators were inspected and needed repairs were made by June 1, 2013.

- **Mid-Point Recloser/Sectionalizing Program**

There are currently three reclosers in service on Line 7 which sectionalize the circuit to minimize the number of customers affected during fault conditions. These units are tested annually and every attempt is made to have the inspections performed prior to the summer period when system activity increases due to summer storms and other conditions. The units were tested during the spring of 2013 and all units are in good working condition for the summer period.

- **Substation Maintenance**

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 maintenance as outlined has been performed on the Matamoras as well as the Port Jervis and Cuddebackville substations. These stations that serve the PCL&P service territory are in good working condition for the summer period.

- **Distribution Overhead Line Inspections**

The overhead lines of the PCL&P system are patrolled monthly to identify any anomalies that have the potential to affect system performance. These patrols, which are conducted by Electric Operations Supervisors, seek to identify hazard tree conditions,

missing or defective animal protection, missing or defective lightning protection and damage to conductors and equipment. Items identified are prioritized and repaired accordingly. These inspections will continue through the summer on a monthly basis and after major system events. All overhead lines and equipment were inspected by ground patrol for damage such as broken insulators and conductors or equipment leaks and other abnormal conditions in 2012. Since the pole inspection program began in 2010 PCL&P has completed 82% (i.e., 3,397 of the 4,120 poles) of the pole inspections required by 52 PA. Code §57.198(n)(3). In addition, all overhead transformers were inspected during the overhead line inspection program in 2012.

Capacity Planning, Additions and Electric Delivery System Projects

The peak load of the PCL&P system was recorded at 16.8 MVA in 2012. After weather-normalizing this load, the area experienced a 1.1% annual increase in electric demand during 2012. The Company has prepared a 30-year plan for the PCL&P service territory in order to address the expected and predicted load growth and maintain reliability, while minimizing the financial impact on customers. The PCL&P electric delivery system has sufficient capacity for the 2013 summer peak period.

Five electric delivery system projects are being considered for the PCL&P service territory during the upcoming five-year horizon. The five-year plan calls for a one-half mile section of conductor behind the Matamoras substation to be upgraded and re-routed, which will improve backup for the head end portion of radial Line 7 and reduce the exposure of the line by 1.5 miles. Also during this timeframe, a parallel underground path will be constructed for approximately 3 miles of the eight-mile radial Line 7. The parallel path will provide switchable backup for an area of this circuit where the majority of the interruptions have historically occurred, and the upgraded conductor will improve capacity and reliability for the foreseeable future. A fourth recloser will be installed on Line 7 in 2013. This recloser will provide increased sectionalizing capability for the radial portion of the circuit to minimize the exposure and customers affected in the event of a fault at the end of the circuit.

Beyond the five-year horizon, the Company has continuing plans to upgrade sections of Line 7 in stages to improve capacity and reliability, which will defer the need for the construction of the Milford Substation until 2045.

The Company's Port Jervis Substation is scheduled for upgrade in 2020. The 20 MVA single bank substation will be replaced with a 69 kV substation consisting of two 69-13.2kV, 50 MVA banks. With no room to install four transformers at Port Jervis, a new Deerpark Substation will be constructed in 2017. This 69 kV substation, which is the cause of Port Jervis slipping to 2020,

will contain two – 50 MVA, 69-34.5 kV banks, and a 35 MVA 69-13.2 kV bank. This Deerpark Substation will substantially improve the source reliability, primary and contingency capacity for the electric delivery system serving the PCL&P service territory.

2012 Storms and Lessons Learned

Superstorm Sandy was a devastating storm and its impact was far reaching. It was the largest storm ever observed in the Atlantic Ocean with a diameter extending nearly 1000 miles. Its force disrupted electric service to approximately 8.5 million people in the Northeastern United States, and resulted in a level of damage second only to Hurricane Katrina in the history of our country.

Superstorm Sandy arrived in the early evening on Monday, October 29, and its intense winds, with gusts up to 85 mph, punished the region for approximately 30 hours. The combination of hurricane level winds and the prolonged period of the storm's presence caused unprecedented damage throughout the Company's service territory. All of PCL&P's electric customers lost power during this event. This was approximately the combined outage level of the previous two worst storms in the Company's history, Hurricane Irene and the October 2011 Snowstorm.

The prolonged windy conditions associated with Superstorm Sandy severely damaged PCL&P's overhead electric distribution system. These conditions created multiple faults on each of the circuits which serve the PCL&P service territory. There were twenty-nine utility poles which required replacement, seventeen overhead distribution transformers damaged and replaced, and many spans of overhead wire which required repair or replacement.

The Company was able to restore service to 90% of the affected Pennsylvania customers within four days, and completed the balance in an additional four days. Mother Nature also sent a Nor'easter to O&R's service territory during the Sandy restoration. The Nor'easter brought high winds and up to four inches of snow to the service territory. This added additional customer outages and brought conditions that both hindered and, at some times, halted Sandy restoration efforts.

In response to Superstorm Sandy, the Company identified three key areas of focus. Three teams were developed to address key priority action areas as follows:

- Storm hardening and system resiliency;
- Improving the information PCL&P provides to our customers and key stakeholders; and
- Enhancing the Company's Outage Management System ("OMS").

The Company has committed to several enhancements, including strategic improvements to the network, improving the information we are providing to our customers and key stakeholders,

specifically surrounding incident level projected restoration times, and OMS enhancements that will refine various incident management processes.

The work of these teams resulted in many tangible improvements including:

- Implementation of a three-year, \$35-million construction program that is aimed at reducing electric outages to customers and speeding electric service restoration, a \$2 million underground project is schedule for PCL&P system in 2015;
- Updates to the outage map;
- Implementation of municipal dashboards for customer and storm related information;
- Improvements to communication processes with municipalities for service restoration and road clearings;
- Implementation of a mobile phone application for the reporting of outages;
- Working with the PUC to share best practices with other electric distribution companies for managing restoration events;
- Implementation of text messaging for outage and estimated restoration updates; and
- Various improvements to the OMS.

Storm Response

The Company continually monitors weather forecasts throughout the summer months using several weather subscription services as well as its own internal meteorologists. Staffing of both field and Control Center personnel are adjusted as weather predictions dictate. In addition, damage assessment, site safety, supplemental and other critical support functions are prepared to ensure adequate staffing is available for mobilization should minimum response thresholds be met. Public Affairs continually updates 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 customers as quickly as possible, and manage repairs throughout the event. The following represents the general sequence for the restoration of the electric delivery system:

- Transmission facilities and area substations;
- Distribution circuit lockouts;
- Sensitive customers (i.e., these customers include hospitals, water supply and sewage; treatment facilities, nursing homes, police and fire stations, telephone company;

facilities, radio and TV stations, public transportation and life sustaining equipment customers); and

- All other affected customers.

Summary

PCL&P continually strives to improve our response to outages and customer communications regarding our storm recovery updates. The various proactive programs, ongoing initiatives, and capacity planning mentioned in this report are part of our efforts to systematically improve system reliability for the 4,500 delivery customers in the area. PCL&P is ready for the 2013 summer storm season.