

# Pennsylvania Summer Reliability

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### 1. Keys to Success

#### **A. Reliability Enhancement Programs**

In 2013, Penn Power is continuing its reliability strategy, consisting of reviewing all outages by outage cause and weather, installing protective devices to minimize the impact and size of outages, aggressive tree trimming, and creative shift coverage to improve response time. This includes additional troublemen coverage with first line supervision called out directly for all outages impacting over 100 customers to expedite restoration. By implementing the initiatives noted above, Penn Power remains committed to providing safe and reliable service to their customers.

#### **B. Preventative Maintenance Programs**

Penn Power has programs and processes in place to continually address and enhance distribution reliability. Well-established maintenance programs, such as the Vegetation Management Program, ensure the existing system will continue to operate in a safe and reliable manner. Penn Power also employs maintenance programs aimed to specifically address worst performing circuits and identified line segments where reliability issues may exist.

**Circuit Inspections** – In 2012, Penn Power reviewed nine worst performing circuits and fifteen additional circuits to look for aging infrastructure and broken equipment such as crossarms, braces and poles, of which priority findings were addressed expeditiously.

**Capacitor Inspections** – As of June 1, Penn Power inspected all line capacitor banks and completed all necessary repairs or replacements to ensure at least 98% availability.

**Mobile Substations** – Penn Power completed a review of the status of its mobile substations and other spare equipment. This included inspections of the mobile trailer, transformer and breaker. Spare equipment includes voltage regulators and substation cooling items such as transformer fans.

**Aerial Patrols** – Two aerial patrols are conducted annually in Pennsylvania to inspect transmission facilities. The purpose of routine patrols is to ensure the integrity of in-service transmission lines to maintain safe and reliable service. The first aerial patrol of transmission lines in Penn Power was completed in May and the second will be completed by year-end.

#### **C. Capacity Planning**

Penn Power's electric delivery system is able to serve customers' needs without problems as a result of the ongoing system enhancements and the hard work of employees and contractors. The weather is again expected to be the primary driver of customer demand this summer.

The energy efficiency and conservation programs offered to customers as part of Penn Power's compliance with Pennsylvania Act 129 are also reducing overall demand.

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Residential Programs include Appliance Turn-In, Energy Efficient Products, Energy Efficient HVAC Equipment, Residential New Construction, Home Performance, and Limited Income Energy Efficiency. Non-Residential Programs include Commercial and Industrial (“C&I”) Equipment – both Prescriptive and Custom.

Penn Power does not foresee significant concerns with system delivery capacity during the upcoming summer based on its performance during last summer’s heat wave, ongoing enhancements to reliability and load-bearing upgrades, and customers’ adoption of energy efficiency and conservation opportunities.

### **2. 2012 Storm Update and Lessons Learned**

In calendar year 2012, Penn Power did not experience any major events. During any weather event, safety remains the number one priority.

Throughout coordination efforts, working safely and efficiently is the main objective. Regional conference calls are executed to plan and prepare logistics. Effective planning allows for the precise deployment of crews, supplies, and equipment. Employees are also staggered around the clock to maximize productivity.

After each significant storm event, Penn Power leadership will conduct post storm review meetings to identify and disseminate lessons learned to be used for improving the emergency response plan.

### **3. 2013 Summer Readiness**

#### **A. Capacity Additions**

- **New 500-138 kV Bulk Transmission Cranberry Substation** - The station was placed in service in June 2012 in growing Cranberry and is now providing a significant source of bulk power. The project also enhanced the reliability of the entire transmission network for the Western Pennsylvania area.
- **Installation of two new distribution feeders from the Epworth Substation** - The new feeders will serve the growing load in the vicinity of I-79 / Route 228 corridor. The first feeder was installed by June 1 with second feeder planned to be energized by the end of the year.
- **Replacement of a substation transformer at Zelienople Substation** - The new transformer provides additional distribution capacity and increased reliability.
- **Sharon 138kV Project** - In June, two 25 MVar capacitor banks (total 50 MVars) project were placed into service resulting in increased reliability to the area for the loss of multiple transmission elements. This project will also provide an opportunity for additional load growth in the area.

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### B. Transmission Preparedness

Penn Power conducts an annual transmission readiness review with transmission operations to discuss the capability and reliability of the system for the summer. The Company's detailed review did not reveal any significant issues for the summer of 2013. Based on the system conditions modeled, the Penn Power transmission system is expected to sufficiently support the forecasted peak summer loading.

In addition, PJM has operational procedures identified to effectively control and mitigate contingency outage conditions on the transmission system. Penn Power has operational procedures to implement any PJM required actions and to mitigate contingency conditions on the lower voltage systems (<100kV). During the system assessment, a voltage stability analysis was conducted and produced acceptable Power-Voltage response curves.

### C. Event Preparedness

**Preparation and Planning** – Planning and preparation is initiated days before a storm strikes. As part of those efforts, Penn Power's in-house meteorologists closely monitor weather data and track storms to assess the potential impact on the electrical system and service area.

If it is determined that a storm could potentially disrupt service, Company leadership and operations managers hold conference calls and conduct meetings to evaluate the need for forestry, hazard responders, damage assessors and line crews as well as supplies and equipment. This core management team also evaluates the need for additional crews from other affiliated operating companies, as well as outside utilities and contractors. Depending on the magnitude of the storm, staging areas are organized to prepare for the efficient deployment of crews and equipment.

**Refresher Training** – All employees with storm response roles (hazard responder, hazard dispatcher, storm analyst, etc.) have received appropriate refresher training in preparation for the summer storm season.

## 4. Storm Response

### A. Outage Restoration Strategy

In the early stages of service restoration, hazard responders go into the field to locate damage to the electric system and identify electric hazards – such as downed and potentially energized wires – and then remain at those locations to protect the public until linemen safely isolate or clear the hazard. Next, forestry crews clear fallen trees and branches as well as other debris so utility workers can repair and re-energize power lines.

Once debris has been cleared from the affected areas, service is initially restored to high-voltage transmission equipment, lines and substations, because they supply power for local distribution systems. After that, crews focus on restoring service on a high-

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priority basis to hospitals, critical care, life-support facilities, and critical first responder facilities. Focus is then placed on repairs that will bring the greatest number of customers back in service. Next, repairs that restore service to individual customers occur.

### **B. Communications and Outreach**

External Affairs managers establish communications with emergency management agencies (“EMAs”), local officials and regulators in advance of and throughout a storm to keep them apprised of preparation and planning efforts. Communications representatives also contact the media to enlist their help in encouraging customers to prepare for the likely storm events and provide information on who to call if they lose power. Proactive email alerts and phone messages are initiated to key stakeholders, critical care, and well water customer alerting them to the potential for extended power outages. These efforts and face-to-face outreach are closely aligned with our service restoration efforts. The Company also provides safety messages via newspapers, radio, and as online banner ads

#### **Enhanced Communication Efforts**

Penn Power refined its outage website to improve customer communications. The primary improvement is the additional of the “24/7 Power Center” outage maps, which provide up-to-the-minute outage information to customers, the news media, and public officials. This user-friendly outage map provides the ability to search outages by state, county, community, or zip code on a computer or mobile device. Customers can also report a service interruption or view safety tips and other critical information by utilizing links on the map.

In addition, Penn Power administered community focus groups involving key representatives from local townships, communities, and county governments. As a result, a lesson learned from the storm review was the importance of sending daily communications to township management during major storm planning process. This will allow for the continued implementation of our proactive, comprehensive communications strategy – including social media – for reaching customers and media outlets.

#### **New Technologies for Customers**

During major power outages, Penn Power uses its Twitter account, @Penn\_Power, to provide timely information including the number of customers restored to service, the number of customers remaining without power, updates on restoration efforts, electrical safety reminders, and resources for additional assistance including water and ice distribution locations. In 2013, the Company trained additional social media support staff to assist with storm communications and respond to customer service inquiries during “blue-sky” days. In the future, Penn Power expects to expand its social media outreach with the launch a Facebook page. In addition to these improvements, an additional series of new technologies were introduced on other platforms.

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Early in 2013, the Company launched a Penn Power smartphone app for Apple® iPhone® and Android™ devices and a mobile website that is accessible by using a smartphone to visit the FirstEnergy website ([www.firstenergycorp.com](http://www.firstenergycorp.com)). The app and website provide customers with easy, on-the-go access to information and services regarding their electric accounts.

In March 2013, Penelec introduced two additional technologies that made it easier for its customers to receive information. Customers can now subscribe to receive alert notifications via email or text message which contain information about weather conditions that may impact electrical service or updates on reported outages, among other customer service functions. Customers can also use text messaging to report outages, request updates on restoration efforts, and make inquiries about their accounts.

The 24/7 Power Center outage map enhancements made in May 2013 also implemented a new feature that allows individual customers to view their personal outage status – including the best-available ETR and cause of outage – by logging in to the full website or the new mobile website.