

Pennsylvania Summer Reliability

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A. Reliability Enhancement Programs

West Penn Power Company (“West Penn” or the “Company”) remains committed to providing safe and reliable electric service to its customers and employs various programs to strengthen the durability and flexibility of its electric system. Methods to improve the efficiency, adequacy and reliability of its distribution system are a continual focus. West Penn utilizes core programs to support cost-effective and reliable service. These programs include, but are not limited to:

- Vegetation Management
 - Routine cycle tree trimming removes selected incompatible trees within the clearing zone corridor, removes certain defective limbs that are overhanging primary conductors, controls selected incompatible brush, and targets identified off right-of-way priority trees for removal.¹
 - Routine cyclical tree trimming may include removing healthy limbs overhanging primary conductors.
 - A dedicated program has been established in response to damage caused by the Emerald Ash Borer, to proactively remove Ash Trees off right-of-way.
 - Post-storm circuit patrols may be performed to target the areas with high tree-related outages. Circuit patrols identify trees damaged in a storm that may eventually lead to a future outage. Once identified, the tree is removed. In addition, damaged equipment identified as part of the circuit patrol is repaired or replaced.
- Load Forecasting and Distribution Planning
 - The load forecasting application is used to estimate future substation and circuit loading based upon historical load data and the planning criteria guidelines are then used to provide a consistent approach for planning the safe, reliable, orderly, and economic expansion of the distribution system.
- Circuit Protection and Sectionalization
 - Circuit protection and sectionalization is aimed at identifying and correcting or improving coordination between protective devices and isolating smaller segments of the circuit with the goals of ensuring safety and security to the public and employees; maximizing service reliability to customers by reducing the number of customers impacted and the frequency and duration of outages; and minimizing damage to distribution equipment due to overcurrent events. West Penn replaced or installed 6,998 devices in 2021 primarily on circuits having installed SCADA controlled devices, or those identified to have SCADA controlled devices installed.
- Customers Experiencing Multiple Interruptions (“CEMI”)
 - The CEMI program provides for distribution line equipment projects focused on reducing the number of outages per customer and the number of customers affected by frequent outages. West Penn completed 3 CEMI projects in 2021.

¹ Trees located off the right-of-way that are either dead, diseased, declining, structurally compromised, severely leaning or significantly encroaching onto the right-of-way.

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- Line Rehabilitation
 - To strengthen its electrical system, West Penn performs targeted circuit rehabilitation in zones one and two,² focusing on circuits identified as worst performing circuits. Equipment that may be replaced includes crossarms, capacitors, insulators, lightning arresters and connectors. West Penn completed the rehabilitation on 14.8 miles of distribution circuits and 10 miles of sub-transmission circuits in 2021.
- SCADA Devices
 - Aging electro-mechanical relay controls and switches and automated subtransmission switching locations are being replaced with newer technology. The installation of supervisory control and data acquisition (“SCADA”) controlled reclosers and switches and automatic switch modernization will provide enhanced sectionalizing for larger blocks of customers at the substation level. The SCADA controlled switches are designed to allow for remote switching to restore large blocks of customers more quickly. West Penn installed 9 automatic reclosers or switches in 2021.
- Substation Equipment Replacement
 - Substation circuit breakers, station transformers and other substation equipment, such as insulators, switches, buses, arresters, and conductors that are obsolete or in poor condition are being replaced with new equipment. Proactively replacing older equipment increases substation reliability and reduces the occurrence of equipment failure. West Penn replaced 34 pieces of substation equipment in 2021.
- Long-Term Infrastructure Improvement Plans (“LTIIIP”)
 - West Penn first began to execute its LTIIIP programs in 2016. These plans include expenditures and programs designed to accelerate repair, improvement, or replacement of aging infrastructure in order to adequately maintain and improve the efficiency, safety, adequacy and reliability of the distribution system. On January 16, 2020, West Penn’s LTIIIP for the period beginning January 1, 2020 and ending December 31, 2024 (“LTIIIP II”) was approved and implementation of that plan is currently underway. Note that some of the initiatives described above are included in the Company’s LTIIIP II.

B. Preventative Maintenance Programs

In accordance with 52 Pa. Code § 57.198, every two years West Penn files a Biennial Inspection, Maintenance, Repair and Replacement Plan³ for approval by the Commission. This Biennial Plan is designed to reduce the risk of outages on the Company’s system and form the basis for the Company’s inspection and maintenance objectives. The Biennial Plan includes programs to conduct vegetation management, pole inspections, distribution overhead

² Zone one is defined as the portion of the circuit from the substation breaker to the first protective device. Zone two is defined as the three-phase conductor and devices after the first protective device.

³ On January 15, 2020, West Penn’s Biennial Inspection, Maintenance, Repair and Replacement Plan for the period January 1, 2021 through December 31, 2022 was approved by the Commission at Docket No. M-2009-2094773.

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line inspections, distribution transformer inspections, recloser inspections and substation inspections.

These well-established maintenance programs ensure the existing system will continue to operate in a safe and reliable manner and serve to identify any potential system issues so that they can be proactively addressed.

Additionally, for subtransmission overhead inspections, unmanned aerial vehicle drones are utilized on sections of lines that are off-roads or hard to access areas via foot patrols.

C. Capacity Planning

Due to ongoing system enhancements and the hard work of employees and contractors, West Penn is able to reliably serve its customers. The primary driver of customer demand this summer is again expected to be warm temperatures across the region.

West Penn does not foresee significant concerns with system delivery capacity during the upcoming summer based on its performance during last summer's peak. Ongoing facility enhancements designed to improve reliability, load-bearing upgrades, and customers' adoption of energy efficiency and conservation opportunities are being viewed as additional opportunities to ensure the reliability and capacity availability of the system.

D. 2021/2022 Storm Update and Lessons Learned

In calendar year 2021, West Penn had a total of nine reportable⁴ storm events, of which one was a major event.

During restoration efforts, working safely and efficiently is the main objective. Regional conference calls are held for preparation and logistics planning. 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, West Penn leadership conducts post storm review meetings to identify and disseminate lessons learned which are used to improve the emergency response plan.

From storm review action items identified as a result of 2021 and early 2022 restoration events, West Penn has:

- Identified and addressed communication issues among field crews, affiliate personnel and the Distribution Control Center during storm restoration.

⁴ "Reportable" is defined as an event where filed reports are necessary to the Pennsylvania Public Utility Commission.

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- Incorporated circuit quarantine and damage assessment processes as a part of the West Penn Storm Drill process.
- Reinforced ARCOS Resource Assist process with contractors to better manage personnel, improve storm response time, and ensure efficient logistics of crews.

Also, West Penn is preparing for the implementation a new outage management system, which is scheduled to take place in the third quarter of 2022. Benefits of the new system include enhanced system monitoring allowing distribution system operators to respond more quickly to outages; remote configuration to enable the safe isolation of equipment, preventing outages, and allowing for safer and more efficient restoration; and advanced monitoring and control capabilities improving situational awareness and increasing efficiency.

West Penn continues to work and strive to safely restore all customers in a timely and efficient manner.

E. 2021 Summer Readiness

Capacitor Inspections – By June 1, 2022, West Penn will have inspected all line capacitor banks and completed all necessary repairs or replacements to ensure at least 98% availability.

Substation – By June 1, 2022, West Penn will have inspected all substation capacitor banks and completed necessary repairs or replacements to ensure minimum 98% available reactive support. In addition, a review of spare equipment will have been completed. Spare equipment includes voltage regulators and substation cooling items such as transformer fans.

Capacity Additions:

- **Cabot – Fawn – McCalmont (Lawson Jct) 138 kV Terminal Upgrades (s2290)** – Upgrades limiting terminal equipment at Cabot, Fawn, and McCalmont 138 kV (“kV”) substations. This equipment is expected to be in service by June 7, 2022.
- **Smith 138 kV (b3156)** – Replaces line relaying and fault detector on the Wylie Ridge 138 kV terminal at Smith Substation. This equipment is expected to be in service by June 1, 2022.
- **Charleroi – Mitchell – Peters (Union Jct) 138 kV Terminal Upgrades (s2291)** – Upgrades limiting terminal equipment at Charleroi, Mitchell, and Peters 138 kV Substations. This equipment is expected to be in service by May 28, 2022.

Transmission Preparedness – An annual transmission readiness review is coordinated by FirstEnergy’s Transmission Operations Services department with West Penn for the purpose of ensuring the capability and reliability of the system for the summer. The detailed review did not reveal any significant issues for the summer of 2022. Based on the system conditions modeled, the West Penn transmission system is expected to sufficiently support the forecasted peak summer loading.

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Two aerial patrols are conducted via helicopter annually by FirstEnergy’s Transmission Maintenance section 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 has been completed and the second will be completed by year end.

Emergency Exercise – As part of the FirstEnergy Utilities (“FEU”) Emergency Preparedness program, West Penn completes an annual emergency exercise. The exercise facilitates the testing and validation of key emergency response roles, systems and processes. The primary objective of the exercise is to ensure a complete understanding of the restoration process by all participants through exposure to a variety of real-world scenarios and decision-making challenges that could be experienced during actual restoration events. The 2022 emergency exercise will take place virtually on May 19, 2022.

Event Preparedness – FirstEnergy’s in-house meteorologists use highly sophisticated, proprietary data and forecasting models specifically designed to provide actionable intelligence. When predicted weather meets specific criteria, planning and preparation work is immediately initiated, often days before forecasted impact.

As part of the preparation efforts, West Penn’s executive leadership and operations managers implement the emergency restoration process. Based on available data, resource needs are evaluated, and requests are submitted to the FEU Emergency Operations Center. These requests can include but are not limited to line resources (both internal to FirstEnergy and external), hazard responders, damage assessors, public protectors, vegetation crews, and equipment and material needs. Depending on the predicted magnitude of the event, pre-identified staging areas can be quickly activated to prepare for the efficient deployment of crews and equipment.

Refresher Training – All employees with emergency response roles receive appropriate refresher training at specified intervals to ensure they are immediately deployable when an event impacts the system. Expectations for employees to complete appropriate training and verify all equipment and personal protective equipment are available and in proper working order are communicated each year during the emergency exercise and verified by West Penn management.

Staffing – West Penn is appropriately staffed for the 2022 summer storm season. West Penn performs an annual staffing analysis that accounts for attrition, including retirements, to determine the proper staffing levels of craft workers. West Penn then enrolls students in the Power Systems Institute (“PSI”) based on the results of the analysis. PSI is a unique, two-year program that combines classroom learning with hands-on training. West Penn plans to hire eleven line worker graduates and six substation electrician graduates in 2022. The objective of the PSI program is to proactively hire a diverse group of individuals that will fulfill the line work and substation electrician staffing needs for West Penn. The following colleges have partnered with West Penn to support these line worker and substation electrician development:

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- Westmoreland County Community College (for Line students)
- Pennsylvania Highlands Community College (for Substation students)

For larger-scale events, West Penn is able to supplement its own resources by accessing FirstEnergy’s portfolio of operating companies that includes the additional three companies located within Pennsylvania, as well as an additional six operating companies in other jurisdictions. The consistency in standards and work practices employed across all ten of these operating companies enables streamlined resource sharing in a way that promotes both safety and efficiency.

FirstEnergy, for itself and its affiliated operating companies, including West Penn, is a member of the following Regional Mutual Assistance Groups (“RMAGs”) and can call upon them to request additional resources when needed:

- Great Lakes Mutual Assistance Group
- North Atlantic Mutual Assistance Group
- Southeastern Electrical Exchange

A National Response Event can be activated by Edison Electric Institute member utilities when multiple RMAGs cannot adequately support the resource requirements of the requesting utilities. In addition to working with RMAG organizations, FirstEnergy works with non-RMAG utility companies and contractors to secure resources.

F. Storm Response

Outage Restoration Strategy – Depending on the predicted severity of an impending weather event, West Penn typically begins preparing for potential outages before severe weather hits. Based on the projected impact to West Penn’s system, plans are activated so that properly scaled preparations can be made.

Information obtained through various tools and resources is critical to determine the type, number and location of resources needed to assure prompt restoration of service. Line personnel, damage assessors and hazard responders are integral resources in providing initial and ongoing assessments of the damage in the field. Line personnel are equipped with mobile data terminals (“MDT”) in their vehicles and will enter damage information directly into the MDT. This information is immediately available for viewing in the Outage Management System (“OMS”). The OMS is the central collection point for all relevant information concerning damage reports, assessment, and configuration of the electric distribution system. During emergencies that meet triggering criteria, the circuit quarantine process is used for rapid assessment and repair of heavily damaged circuits. Additionally, there are two apps that employees can use on mobile devices to automatically enter damage information into the Company's OMS.

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In response to power outages and other systems emergencies, West Penn maintains a copy of its Emergency Plan for Service Restoration which provides the guidelines for all common processes and procedures for conducting emergency preparedness, response, and service restoration. Further, West Penn has incorporated Incident Command System principles into its emergency response organization to adhere to the principles and high-level structure of the National Incident Management System as appropriate in an electric utility environment.

Communications and Outreach – External Affairs consultants establish communications with emergency management agencies, local officials, county commissioners, and legislators and their offices 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 alerting them of the potential for extended power outages. These efforts and face-to-face outreach are closely aligned with the Company’s service restoration efforts. The Company also provides safety messages via newspapers, radio, and online banner ads.

West Penn customers can stay abreast of restoration progress through a variety of means. A customer can access the Storm Restoration Process page of the Company’s website to learn about the damage assessment and repair prioritization processes as well as the importance of customer calls and outage reporting during the restoration process. Customers can access the 24/7 Power Center outage map that provides county-by-county information. Through this site users can obtain the number of customers served and the number of customers out of power at the county level as well as estimated time of restoration (“ETR”) information. In addition, the 24/7 Power Center outage map shows the status of crews restoring service, and informs customers when crews have been dispatched, when they are working on a repair and when additional crews or equipment are needed to complete restoration work.

West Penn’s mobile website allows customers to report outages and connect to the 24/7 Power Center outage map which has been optimized for mobile devices. From the mobile site, customers can view personalized outage status for an outage they have reported. The mobile website and app, as well as the full West Penn website, also allow customers to register for outage-related alerts via text messages and/or email. These platforms also provide instructions to use two-way text messaging, an interactive option for customers to report outages and obtain outage updates.

Furthermore, West Penn uses Twitter and Facebook to share additional safety reminders, ETRs, updates on restoration efforts, explanations of the restoration process and information about the arrival of additional crews, water and ice locations, and links to other resources such as shelters.

In addition, interactive voice response (“IVR”) messaging is used to communicate restoration information to customers. Messaging is also relayed to customers who have called West Penn

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regarding their individual outage. Live agent customer service representatives are available and have the same information at their disposal.

For extended power outages, Communications issues regular news releases and media advisories over both traditional media channels and social media to update customers on the status of power restoration efforts, as well as provide realistic ETRs so customers can plan accordingly. Communications proactively issues safety messaging ranging from avoiding downed wires to properly hooking up and operating generators. The Company also has plans in place to provide free water and ice to customers without service. Once locations have been determined, this information is communicated to customers via the IVR, press releases, social media and the website.

Outage Restoration and Storm Response Best Practices – West Penn continues to review each storm event, and many of the practices adopted as mentioned above stemmed from sharing best practices with other utilities, a practice that continues today.