

# Pennsylvania Summer Reliability

## MET-ED

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### A. Reliability Enhancement Programs

In 2014, Met-Ed continues to implement reliability improvement initiatives to “storm proof” or “harden” its three-phase distribution backbone. These initiatives include aggressive tree-trimming and circuit-condition assessments. To minimize the number of customers affected by an outage, Met-Ed continues to add protective equipment, such as fuses and reclosers, across the system. In June, Met-Ed’s Smart Grid Distribution Automation system allows for automated fault isolation and switching.

Met-Ed also continues to add remotely controlled sectionalizing devices to enable prompt restoration during outages. These initiatives, combined with targeted substation and distribution asset condition assessments, targeted corrective maintenance, aggressive tree trimming, and application technology, will further improve reliability for Met-Ed customers. Met-Ed is confident that its 2014 plans will continue to have a positive impact on reliability.

### B. Preventative Maintenance Programs

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

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

**Substation** - As of June 1, Met-Ed will have inspected all substation capacitor banks and completed all necessary repairs or replacements to ensure 100% availability.

**Aerial Patrols** – Two aerial maintenance patrols are conducted annually in Pennsylvania to inspect transmission facilities. The purpose of the 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 Met-Ed was completed in May and the second will be completed by yearend.

### C. Capacity Planning

Met-Ed’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 Met-Ed’s compliance with Pennsylvania Act 129 are also reducing overall demand. Residential Programs include Appliance Turn-In, Energy Efficient Products, Energy

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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.

Met-Ed 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.

### D. 2013/2014 Storm Update and Lessons Learned

In calendar year 2013, Met-Ed 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 major storm event, Met-Ed leadership will conduct post storm review meetings to identify and disseminate lessons learned to be used for improving the emergency response plan.

### E. 2014 Summer Readiness

#### Capacity Additions:

- **69 kV North Temple to Car Tech line** - Met-Ed rebuilt a 4.7 mile circuit section to add transmission capacity to the greater Reading area.
- **13.2 kV line near Frystown** - Met-Ed upgraded a 3 mile section of 13.2 kV line to serve a new warehouse.
- **Additional Mobile Transformer** – Met-Ed will take delivery of a new 20 MVA 69 x 34.5 kV – 13.2 kV x 4.8 kV mobile transformer in July. The transformer will be used to offload substations during planned and unplanned outages.

**Transmission Preparedness** - Met-Ed 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 2014. Based on the system conditions modeled, the Met-Ed 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. Met-Ed has operational procedures outlined to implement any PJM required actions and to mitigate contingency

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conditions on the lower voltage systems (<100kV). During the system assessment a voltage stability analysis was conducted and produced acceptable Power-Voltage response curves.

**Event Preparedness** – Planning and preparation work is initiated days before a storm strikes. As part of those efforts, Met-Ed’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.

Additionally, in preparation for the summer storm season Met-Ed completed a company-wide storm drill on April 22. The purpose of this drill was to test participants’ understanding of the storm process by exposing them to a variety of real-world problems and decision making challenges that could be experienced in real storm events.

**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.

## F. Storm Response

**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-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.

**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

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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** - Met-Ed is making it easier for customers to check the progress of service restoration efforts when they experience a power outage.

The Company's "24/7 Power Center" outage maps now display the status of crews restoring service after a power outage in the Met-Ed service territory. With this recent enhancement, Met-Ed customers can see when crews have been dispatched, when they are working on a repair, and when additional crews or equipment are needed to complete restoration work.

Met-Ed's mobile-optimized website and app provide customers with streamlined access to important information and services. In addition, customers can subscribe to email and text message alert notifications to receive billing reminders, weather alerts in advance of major storms, and updates on scheduled or extended power outages.

As it relates to estimated time of restoration (ETRs), Met-Ed is continuing to focus on finding ways to provide increasingly accurate information to the community based on the amount of storm damage. As part of these continuous improvements, customer specific ETR information is now available through IVR, eliminating the need to talk to a live agent.

**Restoration Material Staging and Delivery Efficiency Best Practices** - For major events, Corporate Materials Management will establish a Distribution Center Command Center (DC CC) at the central warehouse supporting Met-Ed. The DC CC covers all functions related to supplying materials including demand planning, procurement, warehousing, transportation, and staging site support. The DC CC participates on all Met-Ed and Corporate storm calls to stay abreast of restoration progress and crew movements. Prior to an event, if extensive damage is anticipated, the DC CC team will pre-pick material for staging sites and also place orders for material with suppliers.

In addition, Met-Ed is a participant in the Mutual Emergency Materials Support (MEMS) group. This group of approximately 45 electric utilities throughout the United States has pledged to assist one another to the extent possible during an emergency with material. MEMS participants assist in locating material from commercial sources or from within the participant's utility organization.

**Mutual Aid Crew Assignment Best Practices** – Resources may be provided to Met-Ed by other FirstEnergy affiliate companies, non-FE utilities through the various mutual assistance organizations, cooperatives, contractors or all of these if the event warrants this level of support. A request for assistance in Met-Ed's territory is made by the Director of Operations Services to the Corporate Mutual Assistance Coordinator who will coordinate all mutual assistance requests. The Corporate Mutual Assistance Coordinator maintains a situational awareness at all times in order to know what areas

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have either been affected or are likely to be affected by a weather event in the order to obtain the appropriate number of crews for an area in a timely fashion.