Pennsylvania Summer Reliability

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Keys to Success: Reliability Overview

The table below, taken from the 2011 Annual Reliability Report, shows Penelec's reliability performance for 2011.

2011 (12-Month Rolling)	Benchmark	12-Month Standard	12-Month Actual
SAIFI	1.26	1.52	**1.40**
CAIDI	117	141	167
SAIDI	148	213	233

Penelec's higher-than-normal CAIDI and SAIDI are directly attributed to the non-excludable event, Hurricane Irene which resulted in a forty-five minute CAIDI and seventy-four minute SAIDI impact. The year proved to be a historical year with the number of storms that hit the Penelec service territory. Penelec employees worked a total of 69 days in 2011 (23 minor storms on 62 unique calendar days and one major event over the course of seven days) restoring power to Penelec customers following storm events.

In 2011, Penelec continued its reliability strategy which consisted of completing a mainline protection program that was initiated in 2008. This program sought to improve reliability by ensuring that circuits carrying more than 300 customers were equipped with a mid-line recloser with coordinating fuse protection on every mainline tap. Furthermore, full circuit protection coordination reviews that began in 2009 were continued. Penelec engineering will continue this practice in 2012, examining in excess of 100 of the worst performing circuits from a SAIDI perspective. In addition to the mainline protection studies, examination of fuse protected single phase spurs will also determine whether any protection deficiencies exist.

Penelec is confident that their 2012 plans will continue to have a positive impact on reliability.

2011 Lessons Learned

After each storm event in 2011, Penelec leadership conducted post storm review meetings. The meetings were utilized to identify and disseminate lessons learned to be used for improving the emergency response plan. The following were identified as action items during those meetings:

Enhance Communication Efforts

In an effort to ensure more consistent and accurate communications with community leaders and local Emergency Management Agencies ("EMAs"), Penelec representatives have held meetings with members of the Erie and Meadville Emergency Operations Centers ("EOC"). These meetings led to numerours open house opportunities at Penelec facilities that were offered to community leadership across the service territory. Members of local fire and police departments as well as city council and mayoral figures were invited to hear a presentation on the Penelec storm process and to meet operations as well as executive management. In addition, Penelec has conducted presentations on the storm process in all 31 county EOCs and identified 225 key individuals (community leaders, EOC staff, etc.) that will be notified via e-mail of significant outage restoration efforts during a storm event. Penelec put these enhancements into action during the April 23, 2012 snow storm that affected its Altoona, Johnstown and Mansfield operating areas.

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As a result of an enhanced Emergency Communications Plan, Penelec has also implemented the Critical Information Team (CIT). This team is designed to provide a consistent, reliable and timely flow of information to a variety of key stakeholders (customers, media, community leaders, etc.) during a major storm event.

Consider Social Media Presence

Penelec has implemented the use of Twitter to communicate with customers. The @Penelec Twitter account provides timely information on the numbers of customers restored to service, the number of customers remaining without power, restoration efforts and electrical safety. These efforts and face-to-face outreach are closely aligned with our service restoration efforts, and include safety messages that run in newspapers, on the radio and as online banner ads.

Create a more user-friendly, mobile version of our website for outage information

On April 2, 2012, FirstEnergy implemented a new outage map on the FirstEnergy website (www.firstenergycorp.com). This new functionality applies to FirstEnergy's Penelec service territory. The outage map allows for optimized viewing on mobile devices and provides outage information at the county level as well as the zip code level. In addition, the website provides statewide alerts, estimated time of restoration and planned outage information.

2012 Summer Readiness

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

Mobile Substations - Penelec 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 Penelec was completed in March.

Refresher Training – All employees with secondary storm response roles (hazard responder, hazard dispatcher, storm analyst, etc.) have received appropriate refresher training.

Storm Response

Preparation and Planning - Planning, preparation and pre-staging work is initiated days before a storm strikes. As part of those efforts, Penelec's in-house meteorologists closely monitor weather data and track storms to assess the potential impact on our 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 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 FirstEnergy operating companies, and 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.

Outage Restoration Strategy - In the early stages of service restoration, hazard responders go into the field to assess 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 and life-support facilities, fire departments and other first responders. 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, local officials and regulators 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.

In 2012, Penelec representatives have held meetings with local EMAs to communicate the Company's restoration process and have worked with these officials to provide representation in these emergency facilities during major storm events.

Projects

- Adding approximately 490Mvars of new reactive support (capacitor banks) to the transmission network in 2012. These capacitors will help to strengthen the "backbone" and ultimately improve distribution performance by keeping transmission voltages at acceptable levels.

- Initiated a project at their 345kV EHV Erie West substation to add an additional circuit breaker and reconfigure the arrangement of the transmission lines that exit the structure. The project is being done to mitigate low voltage concerns on the transmission network.

- In order to mitigate overload concerns and loading constraints on the transmission and sub-transmission networks, Penelec has initiated reconductoring projects on the 115kV Gore Junction line as well as bus reconductoring at Huntingdon substation.

- Replacement of the failed Reeds Gap 115 – 23kv transformer.