

Citizens' Electric Company
2017 Summer Readiness Overview
05/01/2017

Summary

As summer approaches, Citizens' Electric Company is continuing to execute its approved inspection and maintenance plan. This plan will help ensure that system facilities continue to remain in good condition and ready for the storm season.

A. Reliability Enhancement Program

a. Enhanced Vegetation Management

Off right-of-way trees continue to be a significant cause of outages for Citizens' Electric. To address the issue head-on, the Company has increased expenditures on tree trimming by an annual average of 46% each year since 2012. The Company's vegetation coordinator, line crews, and trimming contractors have all been advised to continue identifying and resolving off right-of-way priority trees where possible.

The Company is continuing to see impact from the Emerald Ash Borer throughout its territory. As this invasive beetle has moved through, a significant number of deteriorating Ash trees have become apparent. The Company has again committed additional resources to identify, prioritize and remove significant threats to reliability from hazard trees during 2017.

Citizens' Electric was recently recognized for the fifteenth consecutive year as a "Tree Line USA" utility. This award from the National Arbor Day Foundation recognizes the Company for using nationally approved trimming techniques and procedures in its vegetation management program.

b. Storm Hardening

The most frequent cause of storm outages in the Company's territory is off right-of-way tree issues. The efforts discussed above to identify and remove danger trees constitute a large part of the Company's storm hardening initiative.

In addition, the Company is continuing its efforts to identify and replace specific equipment it has identified as failure-prone. This includes certain vintages of overhead arrestors and porcelain cutouts. In an effort to improve longevity and reliability, all new cutouts being installed utilize polymer-based insulators rather than porcelain. To maximize protection for the coming storm season, inspection of important arrestor locations such as switch points has been completed. Arrestors found to be problematic have been replaced.

c. Fuses/Reclosers/Automatic Switches

The company is currently in the process of completing scheduled recloser inspections for 2017, in accordance with its PUC-approved comprehensive inspection and maintenance program. Recloser maintenance is also currently in progress. This year, comprehensive maintenance will be performed on ten reclosers. This work includes removing the units from service, filtering or replacing the dielectric oil, inspecting contacts and replacing if needed, and testing to ensure proper response timing. All scheduled units are expected to be maintained and returned to service for the coming thunder storm season.

The Company does not utilize automatic switches.

d. Smart Grid

The Company continued its efforts to improve the accuracy of outage prediction throughout the past year. Prediction is aided by the 100% penetration of “smart” meters across the Company’s territory. These meters help operations staff assess outage magnitudes, dispatch repair crews, verify restorations, monitor voltage quality and identify areas of load growth.

During 2016, the Company enhanced its mobile, tablet-based, mapping, inspection and data management tool for used by all internal crews. In addition to helping crews perform routing construction tasks and outage assessment, an inspection tracking module was added in early 2017. This module will provide near real-time status reports and allows crews to document locations visited and log their findings. Management reports provide completion statistics on a daily basis. Activities will be archived to ensure required data retention.

All smart grid systems, including AMR infrastructure, Outage Management System, GIS Mapping and associated online and telephone customer service systems are fully operational and ready for processing outage transactions.

e. Conservation Voltage Reduction (CVR) Activity

Citizens' Electric does not utilize substation voltage regulation equipment. As a result, the Company does not currently have a Conservation Voltage Reduction (CVR) program.

B. Preventative Maintenance Programs

a. Capacitor Inspections

The Company currently has 22 capacitor locations in service. In accordance with its approved inspection and maintenance plan, all locations have been inspected and are available as needed.

b. Vegetation Management

Nearly all of the Company’s routine vegetation work is completed by contractors. Typically, this work is conducted during the early spring and summer months. This allows the Company to better respond to any unexpected “hot spots” that may require attention during the growing season. This schedule also helps ensure that contract crews will be present during the bulk of the summer storm season so they can be quickly deployed for restoration work if needed.

This year’s contract has been awarded and trimming work is underway. As discussed above, the Company will continue its aggressive program of maintenance and danger tree removals again this year.

c. Substation Inspections

All monthly substation inspections have been completed on schedule. Any issues requiring attention have been addressed.

d. Aerial Patrols

The Company does not own any transmission facilities and does not conduct any aerial patrols of its distribution facilities.

e. Infrared Inspections

Infrared inspections are performed on all three-phase primary overhead line sections each year and all single-phase line sections on a three-year cycle. To date, approximately 74% of this year's inspections have been completed. The Company expects to complete 100% of these inspections by year-end. Any issues found have been addressed.

f. Underground Cable Replacement

The Company will be continuing its program to replace aging underground distribution cable. This year approximately 1,900 feet of late '70s vintage bare concentric neutral primary cable will be replaced and approximately 4,500 feet of aging underground service cable will be replaced. This program has been underway for several years and is expected to continue for several more.

g. Pole Inspection & Replacements

In accordance with its PUC-approved Inspection & Maintenance Plan, the Company completed inspection of 529 poles in 2016. One pole was identified as approaching end-of-life and has been replaced. During 2017, another 705 poles will be inspected to ensure continued safe and reliable service.

C. Capacity Planning

The Company provides load forecasts and works closely with its transmission provider and System Operator to ensure continued transmission capacity availability. Long-range plans for additional substation or transmission facilities are refined periodically as load forecast trends are adjusted. System and feeder loading patterns and circuit voltage profiles are analyzed to ensure adequate capacity at all points on the Company's distribution system.

D. 2016/2017 Storm Update and Lessons Learned

The primary weather impact experienced by the Company during the previous year was from typical summer thunder storms. No significant tropical or winter systems affected the service area. The Company continues to participate with various statewide and national best practices groups to maintain awareness and incorporate lessons learned where appropriate.

E. 2017 Summer Readiness

a. Capacity Additions

During 2016, crews completed a 3,200 foot tieline which interconnects several distribution circuits in the Lewisburg area. These interconnections will afford the Company greater ability to respond to outages or load constraints in a prompt and efficient manner, allowing shorter outage times and operational flexibility. Throughout 2017, crews will be working on the upgrade of approximately 6,500 feet of three-phase overhead line to provide enhanced capacity and reliability.

b. Transmission Preparedness

The Company does not own any transmission facilities. However, it provides load forecasts and works closely with its transmission provider to ensure continued transmission capacity availability.

c. Event Preparedness

Lessons learned during 2016 have been incorporated into the Company's storm process. Access to resources from utilities in the PREA group and across the region will continue to play a significant role in any major event response.

The Company continues to foster relationships with local EMA officials to ensure efficient coordination during storm efforts. Emergency material stock levels are adequate, the construction fleet is in good operating condition and staffing is at expected levels. All technology systems are fully operational.

d. Training

In an effort to ensure efficient response to customer outage calls, refresher training has been provided to all office personnel involved in outage activities. All line personnel training is up-to-date in accordance with Company training plans and OSHA requirements.

e. Personnel

As with many electric utilities, Citizens' must address the pressures of an aging workforce. It is expected that within the next 8 to 10 years, 13 of Citizens' current 16 employees will retire. Eight will be in the operations area. Turnover has already begun, with the retirement of an inside employee in 2016.

Citizens' Electric's management team has been entrusted by the shareholders, customers and the Public Utility Commission to provide safe and reliable service at a fair cost. To address this core responsibility and the potentially negative impact from failure to plan, management has adopted a long-term and methodical transition strategy that will prevent a lapse in experience and job knowledge that is so necessary to effectively operate the Company. To begin this orderly transition process, the Company increased its line crew staffing level by 12.5%, through the hiring of one additional apprentice in 2015.

It typically takes up to seven years to fully develop a journeyman lineman. While no retirement announcements have been made, 75% of the line crew is considered as "approaching" retirement age. Incorporating additional apprentices in a timely manner will ensure there is an adequate supply of knowledge and skills available to provide a safe and proficient workforce.

F. Storm Response

a. Outage Restoration Strategy

Citizens' Electric employs a restoration strategy which aims to restore customers in the most efficient way possible. Ensuring the safety of the public and the Company's employees is the first priority. Crews are first dispatched to trouble locations that will restore service to the largest number of customers in the shortest amount of time, with priority given to incidents that will restore service to critical public infrastructure. Next, outages affecting individuals or small groups of customers are restored.

b. Communications and Outreach

In addition to providing timely information through traditional methods such as newsletters, newspaper articles, and direct employee contact, the Company utilizes social media including Facebook and Twitter.

During 2016, the Company continued enhancing its online customer service portal called SmartHub. This tool allows customers to securely access a rich set of features via a web interface or by downloading a free application to their smartphone or tablet. Recent enhancements enabled customers to sign up to receive email or text messages that will automatically inform them of status and ETR for outages affecting them. This system can also be used to inform subscribing customers of planned outages and other emergencies.

To increase public safety awareness, the Company conducted electrical safety training with various groups during the year. Demonstrations were provided for members of the local university community and the general public.

The Company maintains effective information exchange with county EMA officials and coordinates response to local emergencies as needed.

c. Outage Restoration and Storm Response Best Practices Implemented and/or Identified for Future Implementation

The Company participates in various statewide and national industry organizations, including the PA Best Practices Team. It will continue monitoring the findings and recommendations of these groups and will implement them where appropriate.

Conclusion

The Company believes it is ready and well-positioned for the coming summer storm season. Through the application of the above initiatives, safety, reliability and customer satisfaction will be maintained throughout 2017.