

Choctawhatchee Electric Cooperative, Inc. (CHELCO)
Report to Florida PSC
Pursuant to Rule 25-6.0343, F.A.C.
Calendar Year 2015
Submitted March 1, 2016

1. Introduction

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2. Number of Meters Served in 2015: 50,500

3. Standards of Construction

- a) **National Electrical Safety Code Compliance** - Construction standards, policies, guidelines, practices, and procedures at CHELCO comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after January 1, 2012, the 2012 NESC applies. Electrical facilities constructed prior to January 1, 2012, are governed by the edition of the NESC in effect at the time of the facility's initial construction.
- b) **Extreme Wind Loading Standards** - Construction standards, policies, guidelines, practices, and procedures at CHELCO are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2012 edition of the NESC. This statement applies to (1) new construction; (2) major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after the effective date of this rule; (3) targeted critical infrastructure facilities and major thoroughfares taking into account political and geographical boundaries and other applicable operational considerations.
- c) Electrical construction standards, policies, guidelines, practices, and procedures at CHELCO address the effects of **flooding and storm surges** on underground distribution facilities and supporting overhead facilities. CHELCO reviews each project on a case by case basis to determine the effects of flooding and storm

surge. We make recommendations to the counties that ultimately approve the developments.

- d) Electrical construction standards, policies, guidelines, practices, and procedures at CHELCO provide for placement of new and replacement distribution facilities to facilitate **safe and efficient access** for installation and maintenance. New facilities are placed in front or side of the property and all facilities are installed to allow access by CHELCO crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. CHELCO decides on a case-by-case basis whether existing facilities need to be relocated. In 2015, to further harden our system CHELCO replaced or installed multiple critical wood pole structures with concrete poles as part of the ongoing distribution system upgrades or improvements.
- e) The **pole attachment agreements** between CHELCO and third-party attachers include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and safety before they attach to the pole. However, before approving any attachment, CHELCO reviews each proposed attachment to insure each attachment will meet the National Electric Safety Code and CHELCO standards. CHELCO performs follow-up audits to ensure the attachment is properly installed and maintained. We also inspect and physically count every attachment on a 3-year cycle.

4. Facility Inspections

- a) We inspect new construction of power lines on a monthly basis. Each month work orders are closed and routed to the inspector. Work orders are selected at random and represent all types of construction and an accounting of the total dollars spent. We inspect poles, conductor, equipment, and any attachments made on the poles for NESC requirements and specifications. In addition to monthly work order inspections, we inspect every service (including transformer, service wire and meter) once a year. CHELCO also uses an outside contractor for pole inspections. We are on an eight-year cycle to cover all the poles on our system, and have been conducting pole inspections since the 1960's. Currently, our contractor inspects between 5,000 and 7,500 poles per year.
- b) During 2015, CHELCO selected for inspection 366 different work orders. This inspection ranged from one span single phase primary lines to complex three phase lines. In addition to these planned inspections, our pole inspection contractor inspected 6,222 poles or 10.5% out of a system total pole count of 59,125.

- c) During 2015, of the 6,222 poles that were inspected, there were 214 poles or 3.4% of the poles that failed inspection for various reasons ranging from split top to wood rot.
- d) During 2015, 100% of the 214 poles that failed inspection were replaced.

5. Vegetation Management

- a) CHELCO has no Board policy that directly relates to the Right of Way Program. See below for an overview of CHELCO's current program and practices.
- b) CHELCO's current right of way program is designed to cut, mow, or otherwise manage one fifth of its right of way on an annual basis. Our standard of cutting is ten feet on either side of the primary line from ground to sky. In 2015, we performed 513 miles of maintenance cutting on primary line. We work to remove any existing problem trees under the primary line(s); this helps to reduce hot-spotting requirements between cycles. We do not require cutting around service conductors, but only the removal of limbs that are directly touching that may cause a problem before the next cutting cycle. We have an established herbicidal spraying program. All right of way floors are sprayed to prevent unwanted re-growth following the maintenance cutting program. We patrol all non-scheduled areas continually for danger trees that could affect a primary line through our service department, construction crews, right of way contractors, O & M Contract Administrator and calls from consumers. In 2015, we increased our standard overhead primary line easement area from 20 feet or 10 feet on either side of the pole line to 30 feet or 15 feet on either side of the pole line. This will help limit the number of vegetation issues that potentially could cause an outage.

6. Storm Hardening Research

- a) CHELCO continues to harden our distribution system as mentioned above. We also continue to participate in and monitor the findings of the "Report on Collaborative Research for Hurricane Hardening" (included at the end of this report) provided by The Public Utility Research Center and the University of Florida.

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center
University of Florida

To the

Utility Sponsor Steering Committee

February 2016

I. Introduction

The Florida Public Service Commission (FPSC) issued Order No. PSC-06-00351-PAA-EI on April 25, 2006 (Order 06-0351) directing each investor-owned electric utility (IOU) to establish a plan that increases collaborative research to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers. This order directed IOUs to solicit participation from municipal electric utilities and rural electric cooperatives in addition to available educational and research organizations. As a means of accomplishing this task, the IOUs joined with the municipal electric utilities and rural electric cooperatives in the state (collectively referred to as the Project Sponsors) to form a Steering Committee of representatives from each utility and entered into a Memorandum of Understanding (MOU) with the University of Florida's Public Utility Research Center (PURC). The third extension of this MOU was recently approved by the Research Collaboration Partners and now extends through December 31, 2018.

PURC manages the work flow and communications, develops work plans, serves as a subject matter expert, conducts research, facilitates the hiring of experts, coordinates with research vendors, advises the Project Sponsors, and provides reports for Project activities. The collaborative research has focused on undergrounding, vegetation management, hurricane-wind speeds at granular levels, and improved materials for distribution facilities.

This report provides an update on the activities of the Steering Committee since the previous report dated February 2015.

II. Undergrounding

The collaborative research on undergrounding has been focused on understanding the existing research on the economics and effects of hardening strategies, including undergrounding, so that informed decisions can be made about undergrounding policies and specific undergrounding projects.

The collaborative has refined the computer model developed by Quanta Technologies and there has been a collective effort to learn more about the function and functionality of the computer code. PURC and the Project Sponsors have worked to fill information gaps for model inputs and significant efforts have been invested in the area of forensics data collection. Since the state has not been affected by any hurricanes since the database software was completed, there is currently no data. Therefore, future efforts to refine the undergrounding model will occur when such data becomes available.

In addition, PURC has worked with doctoral and master's candidates in the University of Florida Department of Civil and Coastal Engineering to assess some of the inter-relationships between wind speed and other environmental factors on utility equipment damage. PURC has also been contacted by engineering researchers at the University of Wisconsin and North Carolina State University with an interest in the model, though no additional relationships have been established. In addition to universities, PURC was contacted by researchers at the Argonne National Laboratory who expressed interest in modeling the effects of storm damage. The researchers developed a deterministic model, rather than a probabilistic one, but did use many of the factors that the Collaborative have attempted to quantify. Every researcher that contacts PURC cites the model as the only non-proprietary model of its kind.

The research discussed in last year's report on the relationship between wind speed and rainfall is still under review by the engineering press. Further results of this and related research can likely be used to further refine the model.

III. Wind Data Collection

The Project Sponsors entered into a wind monitoring agreement with WeatherFlow, Inc., in 2007. Under the agreement, Florida Sponsors agreed to provide WeatherFlow with access to their properties and to allow WeatherFlow to install, maintain and operate portions of their wind monitoring network facilities on utility-owned properties under certain conditions in exchange for access to wind monitoring data generated by WeatherFlow's wind monitoring network in Florida. WeatherFlow's Florida wind monitoring network includes 50 permanent wind monitoring stations around the coast of Florida, including one or more stations located on utility-owned property. The wind monitoring agreement expired in early 2012; however, the wind, temperature, and barometric pressure data being collected at these stations is being made available to the Project Sponsors on a complimentary basis.

IV. Public Outreach

In last year's report we discussed the impact of increasingly severe storms on greater interest in storm preparedness. PURC researchers discussed the collaborative effort in Florida with the engineering departments of the state regulators in Connecticut, New York, and New Jersey, and regulators in Jamaica, Grenada, Curacao, Samoa, and the Philippines. While all of the regulators and policymakers showed great interest in the genesis of the collaborative effort, and the results of that effort, they have not, at this point, shown further interest in participating in the research effort.

PURC researchers continue to utilize the insight gained through the hurricane hardening research to contribute to the debate on undergrounding in the popular press, and reinforce the state of Florida as a thought leader in this area. PURC Director of Energy Studies Ted Kury was asked to contribute an article to the second quarter issue of *Utility Horizons* describing the modeling methodology for assessing the undergrounding of power lines. The essay also provided a link to an *Electricity Journal* article by Kury and Lynne Holt, another PURC researcher, which discusses Florida's cooperative approach and holds it up as a "best practice" in regulation. In addition, Kury has conducted interviews for the general press on the costs and benefits of underground power lines.

V. Conclusion

In response to the FPSC's Order 06-0351, IOUs, municipal electric utilities, and rural electric cooperatives joined together and retained PURC to coordinate research on electric infrastructure hardening. The steering committee has taken steps to extend the research collaboration MOU so that the industry will be in a position to focus its research efforts on undergrounding research, granular wind research and vegetation management when significant storm activity affects the state.