CHELCO

Owned By Those We Serve

February 9, 2017

Ms. Penelope Buys
Engineering Specialist
Division of Engineering
Florida Public Service Commission
2540 Shumard Oaks Blvd.
Tallahassee, FL 32399-0850

Re: Report for Rule 25-6.0343, F.A.C.

Attached is Choctawhatchee Electric Cooperative, Inc's (CHELCO) report for Rule 25-6.0343, F.A.C. due March 1, 2017. If you have any questions regarding the information provided in this report, please contact me at (850) 307-1190.

Regards,

J. Matthew Avery, P.E.
Vice President of Engineering

Cc; Steve Rhodes, Chief Executive Officer, CHELCO
Cc; Donny Fugate, Vice President of Operations, CHELCO
Cc; Michelle Hershel, FECA

**Choctawhatchee Electric Cooperative, Inc. (CHELCO)**
**Report to Florida PSC**
**Pursuant to Rule 25-6.0343, F.A.C.**
**Calendar Year 2015**
**Submitted March 1, 2017**

1. Introduction
   - CHELCO – Choctawhatchee Electric Cooperative, Inc.
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     DeFuniak Springs, FL 32435
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     Vice President of Engineering
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2. Number of Meters Served in 2016: 51,803

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, 2017, the 2017 NESC applies. Electrical facilities constructed prior to January 1, 2017, 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 2017 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 2016, 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 2016, CHELCO selected for inspection 448 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

7,670 poles or 12.87% out of a system total pole count of 59,557.

c) During 2016, of the 7,670 poles that were inspected, there were 317 poles or 4.1% of the poles that failed inspection for various reasons ranging from split top to wood rot.
d) During 2016, 100% of the 317 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 2016, we performed 500 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 has helped 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 2017

## 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 approved last year 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 2016.

## II. Steering Committee Workshop

On September 29, the Steering Committee organized a workshop for 26 participants from the Project Sponsors at TECO Plaza in Tampa. The workshop was held to orient new members on the work that the cooperative has accomplished, and to serve as a forum for new ideas in the field of storm preparedness and outage response.

The opening speaker was Matt Corey from Weatherflow, Inc. who discussed their wind monitoring network "HurrNet." The network consists of approximately 90 wind monitoring stations, 44 in Florida, and 21 on utility property. This data is available at no charge to the Project Sponsors. He also outlined Weatherflow's new capabilities, specifically their StormTrack/StormPrint model (on which he displayed, ironically, Hurricane Matthew) and their new line of Smart Weather weather stations for domestic to commercial users.

Next was Ted Kury from PURC with an update on the undergrounding model developed by the Project Sponsors. The current capabilities, which include both probabilistic and deterministic modeling, were reviewed.

The next item on the agenda was a roundtable on vegetation management. Participants discussed current procedures and best practices. All noted that utilities continue to face challenges regarding access to facilities that need to be managed, particularly within municipal boundaries due primarily to municipal codes. Some noted that municipalities may not be aware of the impact that their codes may have on system reliability, and that education is critical in these areas. Each utility then outlined their current trim cycle and approach. Finally, the participants discussed the evolution of customer expectations regarding communications with their utilities.

Next on the agenda was a discussion on the collection and usage of forensic storm damage data. Participants reviewed the existing platform and data framework.

Finally, the participants engaged in a roundtable discussion of topics that might be explored further in future workshops, and discussed the importance and the form of follow-up efforts.

Overall, the participants left the workshop with a greater appreciation and understanding of the work conducted at the various transmission and distribution segments of the Florida utilities.

## III. 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 again 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. They are currently working to incorporate stochastic elements into their model and have consulted PURC for guidance. Every researcher that contacts PURC cites the model as the only non-proprietary model of its kind.

The research discussed in previous years' reports 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.

## IV. 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.

## V. Public Outreach

In last year's report we discussed the impact of increasingly severe storms on greater interest in storm preparedness. PURC researchers continue to discuss the collaborative effort in Florida with the engineering departments of the state regulators in Connecticut, New York, and New Jersey, Pennsylvania, 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.

## VI. 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.