Escambia River Electric Cooperative
Report to the Florida Public Service Commission
Pursuant to Rule 25-6.0343,F.A.C.
Calendar Year 2017

1) Introduction

Escambia River Electric Cooperative is located in Santa Rosa County and serves the Northern parts of Escambia and Santa Rosa Counties. EREC serves approximately 12,287 meters with approximately 1,631 miles of distribution line and no transmission lines or structures. EREC owns all of the distribution, which operates at 12,470 V, and our generation and transmission partner owns all of the transmission and substations that are used to serve our customers.

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2) Number of meters served in the calendar year 2017

Escambia River Electric Cooperative served 12,287 meters in 2017.

3) Standards of Construction

a. National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Escambia River Electric Cooperative comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2012, the 2012 NESC applies. Electrical facilities constructed prior to February 1, 2012, are governed by the edition of 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 Escambia River Electric Cooperative are guided by the extreme wind loading standards specified by Figure 250-2(d) of the 2012 edition of the

NESC for major planned work, including expansion, rebuild, or relocation of existing facilities, assigned on or after December 10, 2006.

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. Flooding and Storm Surges

Escambia River Electric Cooperative is a non-coastal utility; therefore, storm surge is not an issue.

d. Safe and Efficient Access of New and Replacement Distribution Facilities

Electrical construction standards, policies, guidelines, practices, and procedures at Escambia River Electric Cooperative provide for placement of new and replacement distribution facilities so as to facilitate safe and efficient access for installation and maintenance. Wherever new facilities are placed (i.e. front, back or side of property), all facilities are installed so that Escambia River Electric Cooperative's facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. Escambia River Electric Cooperative decides on a case-by-case basis whether existing facilities need to be relocated. If it is determined that facilities need to be relocated, they will be placed in the safest, most accessible area available.

e. Attachments by Others

The pole attachment agreements between Escambia River Electric Cooperative and third-party attachers include language which specifies that the attacher, not the cooperative, has the burden of assessing pole strength and safety, as set forth in the NESC, before they attach to the pole. Escambia River Electric Cooperative performs follow-up audits of attachments to ensure the attachment is properly installed, maintained, and meet NESC requirements for pole attachments.

4) Facility Inspections

a. Describe the utility's policies, guidelines, practices, and procedures for inspecting transmission and distribution lines, poles, and structures including, but not limited to, pole inspection cycles and pole selection process.

Escambia River Electric Cooperative inspects each distribution pole on an 8 year cycle using visual, sound and boring techniques in accordance with RUS standards. Additionally, Escambia River Electric Cooperative uses data gathered during outages to proactively identify troubled lines, poles, equipment, and right-of-way. All of the data feeds back to our pole selection process, which provides a method to determine which poles not to purchase.

b. The number and percentage of transmission and distribution inspections planned and completed.

We planned for 4,800 (14%) of distribution poles to be inspected for the 2017 year. The number of poles inspected in 2017 was 4854 (14%) of distribution poles were inspected. The amount of pole inspections was less than originally projected as we planned to split the difference in inspections from 2016 across multiple years, this will reduce the cost associated with making up in one year alone. Escambia River Electric plans to perform inspections and treat approximately 4800 poles in 2018 to maintain our 8-year cycle.

Escambia River Electric Cooperative does not own any transmission poles.

c. Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2017 and the reason for the failure.

Approximately 530 poles did not pass initial inspection. The common reason for rejection was pole rot at the top and bottom of poles. The majority of these rejections will have the top of poles re-inspected before replacement as the initial inspection was from the ground.

d. Describe the number and percentage of transmission poles and structures and distribution poles, by type and class of structure, replaced or for which remediation was taken

after inspection in 2017, including a description of the remediation taken.

Poles replaced were of various size and class, and have been or will replaced with the appropriate size and class.

5) Vegetation Management

a. Describe the utility's policies, guidelines, practices, and procedures for vegetation management, including programs addressing appropriate planting, landscaping, and problem tree removal practices for vegetation management outside of road right of-ways or easements, and an explanation as to why the utility believes its vegetation management practices are sufficient.

Escambia River Electric Cooperative uses a 5-year vegetation management cycle for all distribution lines. The primary reason for this is that the right-of-way is cleared 10 feet on both sides of the lines making a total clearance of 20 feet. While the crews are managing vegetation on a line they look for foreseeable future problems and take care of them at that time. If at anytime there is a problem tree or landscaping, Escambia River Electric Cooperative works with the home owner toward trimming, if possible, or removal, if necessary, while providing restitution if necessary for trees or landscaping that is outside the easement or right-of-ways. In all cases our current policy is providing the necessary vegetation management needed to reduce outages due to vegetation.

b. Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2017.

As described in question 5(a), Escambia River Electric Cooperative planned to manage vegetation on 20% or 310 miles of the overhead distribution power lines. In 2017, we managed vegetation of approximately 300 miles of distribution power lines, or 19.3%.

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center
University of Florida

To the

Utility Sponsor Steering Committee

Final Report dated February 2018

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 2017.

II. Steering Committee Workshop

On December 5, the Steering Committee organized a web-based workshop for over 40 participants from the Project Sponsors hosted by the University of Florida. The workshop was held to orient new members on the model of the costs and benefits of storm hardening strategies and to discuss the integration of data from recent storm activities.

The presenter for the workshop was Ted Kury. He first described the model and the overall flow of the simulation element. He then described the 115 different inputs to the model and demonstrated where to find them. Next, he demonstrated a test run of 50 hurricane years for the state and demonstrated how the model illustrates the shift in the probability distribution of the outcome variables. Finally, he demonstrated the model's ability to simulate single hurricanes, both historical and hypothetical.

Following the demonstration, the members discussed strategies for adding data from recent storm experiences to the model.

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.

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, it was renewed in April 2017 and will renew automatically annually on the effective date for an additional one year period, unless terminated by the parties to the agreement.

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. PURC researchers also engaged with the popular media in preparation for, and in the wake of, Hurricane Irma.

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.