

**Report to the Florida Public Service Commission Pursuant to
Rule 25-6.0343, F.A.C.
Calendar Year 2012**

1) Introduction

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2) Number of meters served in calendar year 2012

31045

3) Standards of Construction

a) National Electric Safety Code Compliance

Construction standards, policies, guidelines, practices, and procedures at Florida Keys Electric Cooperative Association, Inc., comply with the National Electrical Safety Code (ANSI C-2) [NESC]. For electrical facilities constructed on or after February 1, 2007, the 2007 NESC applies. Electrical facilities constructed prior to February 1, 2007, are governed by the edition of the NESC in effect at the time of the facilities initial construction.

b) Extreme Wind Loading Standards

Florida Keys Electric Association, Inc., facilities were not originally designed to the extreme loading standards on a system wide basis. However, Florida Keys Electric Cooperative Association, Inc. adopted the extreme wind loading standard on April 24, 2007 for:

- a) New construction
- b) Major planned work, including expansion, reconstruction or relocation of existing facilities

c) Flooding or Storm Surges

Florida Keys Electric Cooperative Association, Inc. continues to evaluate and modify our standards, policies, guidelines, practices and procedures that address the effects of flooding and storm surges on underground facilities and supporting overhead facilities. FKEC is participating in the Public Utility Research Center's (PURC) study on the conversion of overhead electric facilities to underground and the effectiveness of undergrounding facilities in preventing storm damage and outages through the Florida Electric Cooperative Association. The 2013 report to the PSC is attached to this report.

d) Safe and Efficient Access of New and Replacement Distribution Poles

Electrical construction standards, policies, practices and procedures at Florida Keys Electric Cooperative Association, Inc., 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, all facilities are installed so that FKEC facilities are accessible by its crews and vehicles to ensure proper maintenance/repair is performed as expeditiously and safely as possible. FKEC 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

Electrical construction standards, policies, guidelines, practices and procedures at Florida Keys Electric Cooperative Association, Inc., include written safety, pole reliability, pole loading capacity and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles. FKEC included inspection of third party contacts in the formal distribution pole inspection which began in 2007. The four year cycle was completed in 2010. Inspections are scheduled to resume 2015.

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.

Florida Keys Electric Cooperative Association Inc. conducts aerial inspections on all transmission structures annually. Distribution poles are inspected on a four-year cycle. FKEC began a formal distribution pole inspection and treatment program in 2007. The four year cycle was completed in 2010. Inspections and treatment is scheduled to resume 2015. All distribution wood poles (10698) in the

system have been tested and treated since 2007. All rejects (1003) have been replaced. The reject rate for the cycle was 9%.

b) Describe the number and percentage of transmission and distribution inspections planned and completed for 2012.

One hundred percent of FKEC's transmission poles were inspected by helicopter in 2012. The inspection of all distribution poles was completed in 2010.

c) Describe the number and percentage of transmission poles and structures and distribution poles failing inspection in 2012 and the reason for the failure.

No transmission structures failed inspection in 2012. All transmission poles or structures are either steel or concrete. No distribution poles were inspected.

d) Describe the number and percentage of transmission poles and structures and distribution poles, by pole type and class of structure, replaced or for which remediation was taken after inspection in 2012, including a description of the remediation taken.

No transmission poles were replaced in 2012.

All pole replacements identified in the 2007-2010 Osmose inspections were replaced prior to 2012.

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.

Florida Keys Electric Cooperative Association, Inc. inspects and trims, where necessary, the entire transmission system on an annual basis. Substations are inspected annually and trimmed when vegetation encroaches. The remainder of FKEC's distribution system is trimmed on a three-year cycle. A formal trade-a-tree program was implemented in 2007 to help with the removal of problem trees located within the right of way.

b) Describe the quantity, level, and scope of vegetation management planned and completed for transmission and distribution facilities in 2012.

Annual transmission line right-of-way clearing from mile marker 106 on County Road 905 to the Dade/Monroe County line was completed in the first quarter of 2012. The remainder of the transmission system was spot-trimmed as necessary.

Vegetation surrounding all substations was trimmed prior to June 1, 2012. Approximately 200 circuit miles of distribution lines were trimmed in 2012. Additional distribution spot-trimming was conducted as necessary.

Report on Collaborative Research for Hurricane Hardening

Provided by

The Public Utility Research Center
University of Florida

To the

Utility Sponsor Steering Committee

February 2013

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).

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 2012.

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 other universities with an interest in the model, though no additional relationships have been established. The researchers that contact PURC all cite 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. Currently, WeatherFlow's Florida wind monitoring network includes 50 permanent wind monitoring stations around the coast of Florida. The wind, temperature, and barometric pressure data being collected at these stations has been made available to the Project Sponsors.

There have been no major impacts from hurricanes since the wind monitoring network was established. Once such an event does occur and wind data is captured, it is expected that forensic investigations of utilities' infrastructure failure will be conducted and overlaid with wind observations to correlate failure modes to wind speed and turbulence characteristics. Project Sponsors and PURC will analyze such data at that time.

IV. Public Outreach

In last year's report we discussed the impact of Hurricane Irene on greater interest in storm preparedness. PURC researchers discussed the collaborative effort in Florida with the engineering departments of the state regulators in Pennsylvania and Maryland. In addition, PURC researchers testified on the collaborative effort in a special session before the office of the Governor of Connecticut. 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. However, the impact of Hurricane Sandy has sparked interest in the research in the states of New York and New Jersey, and

representatives of regulatory and consumer organizations in both states have contacted PURC regarding the research and Florida's collaborative effort.

In August, PURC Director of Energy Studies Ted Kury participated in a teleseminar for state utility regulators sponsored by the National Regulatory Research Institute. During the seminar, he joined other participants in discussing the costs and benefits of relocating power lines underground. He also discussed the state's response to the 2004-05 hurricane seasons and shared lessons from the collaborative experience. In March of 2013, the *Wall Street Journal* will be publishing a special section on pressing energy issues where Kury will be contributing an essay on the costs and benefits of undergrounding.

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.