State of Florida

Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: November 01, 2013

TO: Office of Commission Clerk (Cole)

FROM: Division of Engineering (L'Amoreaux, Buys)
Office of the General Counsel (Gilcher)

RE: Docket No. 130129-EI – Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Duke Energy Florida, Inc.

Docket No. 130131-EI – Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Florida Public Utilities Company.

Docket No. 130132-EI – Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Florida Power & Light Company.

Docket No. 130138-EI – Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Tampa Electric Company.

Docket No. 130139-EI – Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Gulf Power Company.

AGENDA: 11/14/13 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Graham

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\ENG\WP\130129 et al.RCM.DOC

Case Background

The hurricanes of 2004 and 2005 that made landfall in Florida resulted in extensive storm restoration costs and lengthy electric service interruptions for millions of electric investor-owned utility (IOU) customers. On January 23, 2006, the Florida Public Service Commission (Commission) staff conducted a workshop to discuss the damage to electric utility facilities resulting from these hurricanes and to explore ways of minimizing future storm damages and customer outages. State and local government officials, independent technical experts, and Florida's electric utilities participated in the workshop.

On February 27, 2006, the Commission issued Order No. PSC-06-0144-PAA-EI, in Docket No. 060078-EI, requiring the IOUs to begin implementing an eight-year inspection cycle of their respective wooden poles.[1] In that Order, the Commission noted:

> The severe hurricane season of 2004 and 2005 have underscored the importance of system maintenance activities of Florida's electric IOUs. These efforts to maintain system components can reduce the impact of hurricanes and tropical storms upon utilities' transmission and distribution systems. An obvious key component in electric infrastructure is the transmission and distribution poles. If a pole fails, there is a high chance that the equipment on the pole will be damaged, and failure of one pole often causes other poles to fail. Thus, wooden poles must be maintained or replaced over time because they are prone to deterioration. Deteriorated poles have lost some or most of their original strength and are more prone to fail under certain environmental conditions such as high winds or ice loadings. The only way to know for sure which poles must be replaced is through periodic inspections. (p. 2)

At the February 27, 2006, internal affairs meeting, the Commission was briefed by staff on additional actions to address the effects of extreme weather events on electric infrastructure. The Commission also heard comments from interested persons and Florida's electric utilities regarding staff's recommended actions.

On April 25, 2006, the Commission issued Order No. PSC-06-0351-PAA-EI, in Docket No. 060198-EI, requiring all IOUs to file plans and estimated implementation costs for ten ongoing storm preparedness initiatives (Ten Initiatives) on or before June 1, 2006.[2] The Ten Initiatives are:

1. A Three-Year Vegetation Management Cycle for Distribution Circuits.
2. An Audit of Joint-Use Attachment Agreements.
3. A Six-Year Transmission Structure Inspection Program.

[1] Docket No. 060078-EI, In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.
[2] Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

4. Hardening of Existing Transmission Structures.

5. A Transmission and Distribution Geographic Information System.

6. Post-Storm Data Collection and Forensic Analysis.

7. Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems.

8. Increased Utility Coordination with Local Governments.

9. Collaborative Research on Effects of Hurricane Winds and Storm Surge.

10. A Natural Disaster Preparedness and Recovery Program.

These Ten Initiatives were not intended to encompass all reasonable ongoing storm preparedness activities. Rather, the Commission viewed these initiatives as a starting point of an ongoing process.[3] By Order Nos. PSC-06-0781-PAA-EI (addressing Tampa Electric Company, and Florida Public Utilities Company), PSC-06-0947-PAA-EI (addressing Progress Energy Florida, Inc., and Gulf Power Company), and PSC-07-0468-FOF-EI (addressing Florida Power & Light Company), the Commission addressed the adequacy of the IOU's plans for implementing the Ten Initiatives.

The Commission also pursued rulemaking to address the adoption of distribution construction standards more stringent than the minimum safety requirements of the NESC and the identification of areas and circumstances where distribution facilities should be required to be constructed underground.[4] Rule 25-6.0342, Florida Administrative Code (F.A.C.), was ultimately adopted.[5]

Rule 25-6.0342, F.A.C., requires each IOU to file an Electric Infrastructure Storm Hardening Plan for review and approval by the FPSC. The Rule also requires a description of construction standards, policies, practices, and procedures to enhance the reliability of overhead and underground electrical transmission and distribution facilities. The Rule requires, at a minimum, that each IOU's plan address the following items.

a. Compliance with NESC.

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[3] Order No. PSC-06-0947-PAA-EI, p.2, issued November 13, 2006, in Docket No. 060198-EI, In re: Requirements for investor-owned electric utilities to file ongoing storm preparedness plans and implementation costs estimates.

[4] Order No. PSC-06-0556-NOR-EU, issued June 28, 2006, in Docket No. 060172-EU, In re: Proposed rules governing placement of new electric distribution facilities underground, and conversion of existing overhead distribution facilities to underground facilities, to address effects of extreme weather events; and Docket No. 060173-EU, In re: Proposed amendments to rules regarding overhead electric facilities to allow more stringent construction standards than required by National Electric Safety Code.

[5] Order No. PSC-07-0043A-FOF-EU, issued January 17, 2007, in Docket No. 060172-EU, In re: Proposed rules governing placement of new electric distribution facilities underground, and conversion of existing overhead distribution facilities to underground facilities, to address effects of extreme weather events; and Docket No. 060173-EU, In re: Proposed amendments to rules regarding overhead electric facilities to allow more stringent construction standards than required by National Electric Safety Code.

b. Extreme wind loading (EWL) standards for: (i) new construction; (ii) major planned work, including expansion, rebuild, or relocation of existing facilities; (iii) critical infrastructure facilities and along major thoroughfares.

c. Mitigation of damage due to flooding and storm surges.

d. Placement of facilities to facilitate safe and efficient access for installation and maintenance.

e. A deployment strategy that includes: (i) the facilities affected; (ii) technical design specifications, construction standards, and construction methodologies; (iii) the communities and areas where the electric infrastructure improvements are to be made; (iv) the impact on joint-use facilities on which third-party attachments exist; (v) an estimate of the costs and benefits to the utility of making the electric infrastructure improvements; and (vi) an estimate of the costs and benefits to third-party attachers affected by the electric infrastructure improvements.

f. The inclusion of Attachment Standards and Procedures for Third-Party Attachers.

On May 7, 2007, the storm hardening plans were filed by Tampa Electric Company (TECO), Progress Energy Florida, Inc. (formerly PEF, now Duke Energy Florida, Inc. (DEF), Gulf Power Company (Gulf), and Florida Power & Light Company (FPL). Docket Nos. 070297-EI (TECO), 070298-EI (PEF), 070299-EI (Gulf), and 070301-EI (FPL) were opened to address each filing. On June 19, 2007, the Commission voted to set the dockets directly for an informal administrative hearing with the additional mandate for staff to conduct a series of informal workshops to allow the parties and staff to identify disputed issues and potential areas for stipulation. By Order No. PSC-07-0573-PCO-EI, issued July 10, 2007, the dockets were consolidated for purposes of the hearing with the understanding that each utility's plan would be ruled on separately.[6] Florida Public Utilities Company (FPUC) requested to file its storm hardening plan as part of its petition for general rate increase and have it addressed concurrently.[7] FPUC's storm hardening plan was approved May 19, 2008.[8]

A formal administrative hearing was held October 3-4, 2007. During the course of the hearing, the parties reached agreement on a number of issues and the dockets were subsequently stipulated. The Commission was also presented with a stipulated agreement entitled "Process to

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[6] Docket Nos. 070297-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Tampa Electric Company; 070298-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Progress Energy Florida, Inc.; 070299-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Gulf Power Company; 070301-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Florida Power & Light Company.

[7] Order No. PSC-08-0019-POC-EI, issued January 4, 2008, in Docket No. 070300-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plans files pursuant to Rule 25-6.0342 F.A.C., submitted by Florida Public Utilities Company, and in Docket No. 070304-EI, In re: Petition for rate increase by Florida Public Utilities Company.

[8] Order No. PSC-08-0327-FOF-EI, issued May 19, 2008, in Docket No. 070300-EI, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan files pursuant to Rule 25-6.0342 F.A.C., submitted by Florida Public Utilities Company, and in Docket No. 070304-EI, In re: Petition for rate increase by Florida Public Utilities Company.

Engage Third-Party Attachers." This process, as designed, would allow for the exchange of information between the parties. Per the stipulation, annual status reports would be filed with the Commission.[9] In addition, the stipulation stated that any disputes or challenges to issues related to a utility's plan would be resolved by the Commission in accordance with Rule 25-6.0342(7), F.A.C. A customer, applicant for service, or attaching entity could file a request for dispute resolution at any time.

On May 3, 2010, FPL, PEF, TECO, Gulf, and FPUC each filed 2010-2012 storm hardening plan updates as required by Rule 25-6.0342(2), F.A.C.. Docket Nos. 100262-EI (PEF), 100263-EI (TECO), 100264-EI (FPUC), 100265-EI (Gulf), and 100266-EI (FPL) were opened to address the updates. FPUC filed an amended storm hardening update on May 28, 2010. On June 10, 2010, staff conducted a workshop to better understand each IOU's plan. The Commission approved the first updated storm hardening plans for PEF, TECO, Gulf, and FPUC at the October 26, 2010 Commission Conference. FPL's recommendation was deferred until the January 11, 2011 Commission Conference.[10]

On May 3, 2013, the five IOU's filed 2013-2015 storm hardening plan updates as required. Docket Nos. 130129-EI (DEF), 130131-EI (FPUC), 130132-EI (FPL), 130138-EI (TECO), and 130139-EI (Gulf) were opened. Staff did not conduct a workshop for these updated storm hardening plans, data request responses were sufficient in understanding the updated plans.

This recommendation addresses the IOUs' plan updates as required by Rule 25-6.0342, F.A.C. For each utility, staff's recommendation will address:

I. Wooden Pole Inspection Program

II. Ten Initiatives

III. National Electric Safety Code (NESC) Compliance

IV. Extreme Wind Loading (EWL) Standards

V. Mitigation of Flooding and Storm Surge Damage

VI. Facility Placement

VII. Deployment Strategies

Attachment A describes the storm hardening requirements for each IOU. Attachments B through F contain a comparison of each IOU of the provisions of the 2010-2012 approved and updated 2013-2015 storm hardening plans, and the cost of implementing the approved and updated plans.

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[9] Order Nos. PSC-07-1020-FOF-EI, PSC-07-1021-FOF-EI, PSC-07-1022-FOF-EI, PSC-07-1023-FOF-EI, issued December 28, 2007, in Docket Nos. 070297-EI, 070299-EI, and 070301-EI, and Order No. PSC-08-0327-FOF-EI, issued May 19, 2008, in Docket No. 070300-EI.

[10] See Order Nos. PSC-10-0684-PAA-EI (DEF), PSC-10-0686-PAA-EI (TECO), PSC-10-0687-PAA-EI (FPUC), PSC-10-0688-PAA-EI (Gulf), PSC-11-0082-PAA-EI (FPL).

The Commission has jurisdiction over this matter pursuant to Sections 360.04 and 366.05, Florida Statutes (F.S.).

Glossary

1. Annual Electric Utility Distribution Reliability Report – A report, required by Rule 25-6.0455, Florida Administrative Code that contains data pertaining to distribution reliability. In the report, each utility is to provide information regarding established service reliability metrics or indices that are intended to reflect changes over time in system average performance, and sub-regional performance.

2. Extreme Wind Loading (EWL) – A construction standard defined by NESC Section 25, Rule 250C. The standard details loading requirements for Grade B and Grade C construction and maps EWL standards for regions in North America.

3. Florida Emergency Operation Center (EOC) – A central command and control facility responsible for carrying out the principles of emergency preparedness and emergency management, or disaster management functions at a strategic level in an emergency situation, and ensuring the continuity of operation of a company, political subdivision or other organization.

4. Geographic Information System (GIS) – Any system that captures, stores, analyzes, manages, and presents data that are linked to locations.

5. Grade B Construction – In general, the National Electric Safety Code classifies Grade B construction as the highest construction grade and it is used for all supply circuits crossing over railroad tracks; for open-wire supply circuits of over 7,500 volts (V) or constant-current circuits exceeding 7.5 amperes (A) where crossing over communication circuits; and in urban and suburban districts.

6. Grade C Construction – Grade C is typically the National Electric Safety Code minimum standard for most electrical distribution facilities. Grade C is specified for open-wire supply circuits of over 7,500 V in rural districts were crossing over or in conflict with supply circuits of 0 to 750V, excluding services; and for open-wire supply circuits of 750V to 7,500V in urban districts under nearly all conditions except as noted for Grade B construction, and also where crossing over or in conflict with communication circuits.

7. Investor-Owned Electric Utilities (IOUs) – Utilities that are privately owned and organized as a tax paying business, usually financed by the sale of securities in the capital markets. There are five investor-owned electric utilities in Florida.

8. Mid-Cycle Trimming (also know as hot spot trimming, proactive trimming, etc.) – Vegetation (e.g., tree) trimming that occurs outside of a regular schedule or cycle.

9. National Electric Safety Code (NESC) – Safety standards published exclusively by IEEE. The 2007 NESC, approved June 16, 2006, by the American National Standards Institute (ANSI), covers basic provisions for safeguarding of persons from hazards arising from the installation, operation, or maintenance of: (1) conductors and equipment in electric supply stations, and (2) overhead and underground electric supply and communication lines. It also includes work rules for the construction, maintenance, and operation of

electric supply and communication lines and equipment. The standards are applicable to the systems and equipment operated by utilities, or similar systems and equipment, of an industrial establishment or complex under control of qualified persons.

10. Public Utility Research Center (PURC) – A research institute located at the University of Florida. PURC is an internationally recognized academic center dedicated to research and providing training in utility regulation and strategy, as well as the development of leadership in infrastructure policy.

Discussion of Issues

Issue 1: Should the Commission approve Duke Energy Florida, Inc.'s 2013-2015 storm hardening plan filed in Docket No. 130129-EI?

Recommendation: Yes, DEF's updated plan is largely a continuation of its current Commission-approved plan. Since, Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on DEF's infrastructure. However, staff believes DEF is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. (L'Amoreaux)

Staff Analysis: On Attachment B, staff has provided a summary of DEF's currently approved storm hardening plan and the proposed changes contained in its updated plan. In addition, where available, staff has shown the costs associated with the 2010-2012 and 2013-2015 plans. Components of DEF's updated plan are summarized below.

I. Wooden Pole Inspection Program

DEF is continuing its eight-year wooden pole inspection as required by Commission Order No. PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 060531-EU.[11] DEF will continue to file the results of these inspections in DEF's Annual Electric Utility Distribution Reliability Report.

II. Ten Initiatives

Initiative One – Three-Year Vegetation Management cycle for Distribution Circuits

DEF proposes to continue its previously approved plan for this initiative. DEF has a three-year average trim cycle for feeders and a five-year trim cycle for distribution laterals.

Initiative Two – Audits of Joint-Use Attachment Agreements

DEF proposes to continue performing joint-use pole loading analyses on an eight-year cycle in conjunction with its wooden pole inspection program. DEF will continue, in 2014, a new eight-year cycle starting with poles last inspected in 2007.

Initiative Three – Six-Year Transmission Structure Inspection Program

DEF proposes to continue its existing transmission structure inspection program, which is on a five-year cycle for structures. DEF proposes to continue conducting monthly inspections of its substations.

[11] Docket No. 060531-EU, In re: Review of all electric utility wooden pole inspection program.

Initiative Four – Hardening of Existing Transmission Structures

DEF proposes performing system upgrades due to system growth on several lines over the next ten years. This, on average, will result in approximately 250-350 wooden structures per year being changed out and replaced with concrete or steel poles. DEF also estimates that it will be adding 300-400 structures per year due to system expansion and growth. DEF estimates the program will reduce its percentage of wooden transmission structures from 75 percent to less than 50 percent.

Initiative Five – Transmission and Distribution Geographic Information System (GIS)

DEF's current distribution GIS system does not provide asset specific information. DEF proposes to implement an enhanced system for distribution. In order to fully implement this strategy, DEF would need to invest in several systems and perform additional field inspections and audits on its assets. DEF's transmission GIS is fully functioning and linked to DEF's work management system. However, DEF proposes that over the next six years to populate its transmission GIS with maintenance data such as: inspection dates, type of inspections, conditional assessment of the transmission facility, and status of remediation or repair work orders.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

DEF proposes to continue its previously approved plan for Initiative Six. DEF currently has data gathering procedures, which are able to provide DEF Forensic Assessors (distribution) and Consultants (transmission) with information so that they will be able to make recommendations for improvements to DEF's system when needed. DEF did not experience a hurricane event during 2010-2012; therefore, no significant forensic data is available at this time.

Initiative Seven – Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

DEF's updated plan continues to assess differences in damage sustained by underground and overhead facilities, and determine whether customer outages are caused by failures in underground or overhead components. In addition, as proposed in Initiative Five, DEF's new GIS system would allow DEF the ability to collect data relevant to asset performance, and DEF would use this information to analyze and compare performance of its overhead and underground systems.

Initiative Eight – Increased Coordination with Local Governments

DEF seeks to continue coordinating year-round with local governments through its community relations team. DEF representatives will continue to hold various meetings and expositions with local governments, county Emergency Operations Centers (EOCs), and first responders. DEF also proposes to continue working with counties and cities on projects such as: briefings in counties where they provide service, annual storm planning, and collaborating on vegetation management issues.

Initiative Nine – Collaborative Research on Effects of Hurricane Winds and Storm Surge

The electric utilities previously established a non-profit, member-financed organization to coordinate all research efforts through the Public Utility Research Center (PURC), located in the Warrington College of Business at the University of Florida. PURC's work is focused on three main areas of concern: hurricane wind effects, vegetation management, and undergrounding of electric infrastructure. DEF entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2013.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

DEF seek to continue refining its storm recovery plan. This plan is reviewed and updated annually based on lessons learned from the previous storm seasons and organizational needs.

III. National Electric Safety Code (NESC) Compliance

DEF's updated plan addresses the extent to which, at a minimum, DEF complies with the NESC pursuant to Rule 25-6.0342(2), F.A.C.

IV. Extreme Wind Loading (EWL) Standards

New Construction – DEF's updated plan continues its approved approach which adheres to current NESC requirements, executes maintenance plans, and adopts prudent end-of-life equipment replacement programs. DEF has not adopted EWL standards for new distribution construction. DEF reasoned that its own experience coupled with industry experience shows that flying debris and vegetation are the primary causes of distribution pole damage; and these are conditions that EWL standards, and any other overhead construction standard, cannot address. With respect to transmission, however, DEF does apply EWL criteria to its new construction of poles, rebuilds, and relocations of existing facilities.

Major Planned Work – In its updated plan, DEF continues its approach of not applying EWL standards to major planned distribution work, including expansions, rebuilds, or relocations of existing facilities. Staff notes that while Rule 25-6.0342, F.A.C., requires that a utility's plan address the extent to which EWL standards are adopted for various types of facilities, it does not require a utility to adopt a particular standard. However, consistent with NESC Rule 250C, DEF will continue to use the EWL standards for all major planned transmission work, including expansions, rebuilds, and relocations of existing facilities.

Critical Infrastructure (CIF) – DEF proposes to continue its approach of not applying EWL standards to any of its distribution level CIF. With respect to transmission, DEF proposes to continue the use of EWL standards for all major planned transmission work, including expansions, rebuilds, and relocations of existing facilities, irrespective of whether they can be classified as "critical" or "major."

V. Mitigation of Flooding and Storm Surge Damage

DEF seeks to continue to use its prioritization model to identify areas where certain mitigation projects will be put into place to test whether flood mitigation techniques and devices can be used to protect equipment such as switchgears, padmounted transformers, and pedestals. Based on data collected and analyzed, DEF will continue to learn and adapt its flood and storm surge strategies as needed.

VI. Facility Placement

DEF proposes to continue to use front lot construction for all new distribution facilities and all replacements of distribution facilities unless a specific operational, safety, or other site-specific reason exists for not using such construction at a given location. In the updated plan, DEF provided its Distribution Engineering Manual as an aid to facilitate a better understanding of its construction method.

VII. Deployment Strategies

Facilities Affected, Including Specifications and Standards – DEF previously engaged industry expert Davies Consulting to develop a comprehensive prioritization model that has helped DEF identify potential hardening projects, procedures, and strategies. The model has since been improved and enhanced to better reflect the changes in DEF's overall storm hardening strategy. As more data becomes available, DEF proposes to continue to adjust its prioritization model as appropriate.

Areas of Infrastructure Improvements – DEF's updated plan provides a detailed description of communities and areas where electric infrastructure improvements will be made, including facilities identified by the utility as critical infrastructure and facilities along major thoroughfares.

Joint-Use Facilities – DEF proposes to continue performing joint-use pole loading analyses on an eight-year cycle in conjunction with its wooden pole inspection programs. DEF proposes to continue to meet with all joint-use attachers and provide attachers with information on when pole change outs are conducted.

Utility Cost/Benefit Estimates – DEF provided estimates of costs to be incurred in connection to its updated plan. These cost seem to be reasonable as compared to the last approved storm hardening plan. However, no quantification on benefits was included in its filing. Since DEF has not experienced any major storms since the implementation of its plan the Company has minimal evidence of improved network performance from storm hardening projects. However, DEF states that any entity jointly attached to DEF's equipment would enjoy any benefits that DEF would enjoy from that same application. Please refer to Attachment B for a comparison of the cost associated with implementing DEF's current and updated storm hardening plans.

Attachers Cost/Benefit Estimates – DEF provided its Joint-Use Pole Attachment Guidelines with its updated plan. The report details contractual agreements, permits, pole attachment and overlash attachment procedures, costs, and other guidelines.

VIII. Attachment Standards and Procedures

DEF's updated plan includes written Attachment Standards and Procedures addressing safety, reliability, pole loading capacity, and engineering standards and procedures for attachments by others to the utility's electric transmission and distribution poles. These standards meet or exceed those of the NESC pursuant to Rule 25-6.034, F.A.C.

IX. Conclusion

DEF's updated plan is largely a continuation of its current Commission-approved plan. Since Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on DEF's infrastructure. However, staff believes DEF is taking proactive steps to improve its system to withstand severe weather events, and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Therefore, staff recommends the Commission approve DEF's updated 2013-2015 storm hardening plan.

Issue 2: Should the Commission approve Florida Public Utilities Company 2013-2015 storm hardening plan filed in Docket No. 130131-EI?

Recommendation: Yes. FPUC's updated plan is largely a continuation of its current Commission-approved plan. Since, Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on FPUC's infrastructure. However, staff believes FPUC is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. (Buys, L'Amoreaux)

Staff Analysis: FPUC filed its updated storm hardening plan pursuant to Rule 25-6.0342, F.A.C., on May 1, 2013. On Attachment C, staff provided a summary of FPUC's currently approved storm hardening plan and the proposed changes contained in its updated plan. In addition, where available, staff has shown the costs associated with the 2010-2012 and 2013-2015 plans. Components of FPUC's updated plan are summarized below.

I. Wooden Pole Inspection Program

FPUC seeks to continue its eight-year wooden pole inspection as required by Commission Order No. PSC-07-0078-PAA-EU. However, FPUC proposes to visually inspect, sound, and selectively bore (if internal decay is suspected) all Chromated Copper Arsenate (CCA) poles under 21 years of age. Unless a pole fails sound and bore, a full excavation will not be performed on these poles. The wooden pole inspections include visual inspections, sound and bore, excavation, and strength and loading assessments. FPUC will continue to file the results of these inspections in FPUC's Annual Electric Utility Distribution Reliability Report.

II. Ten Initiatives

Initiative One – Three-Year Vegetation Management cycle for Distribution Circuits

In its updated plan, FPUC proposes to continue its previously approved plan for Initiative One. Currently, FPUC has a three-year trim cycle for main feeders and a six-year cycle for laterals. FPUC will also continue annual inspections of feeders serving critical infrastructure prior to storm season; to identify and perform any mid-cycle trimming; to address danger trees located outside the normal trim zone that threaten main feeders; to educate the public regarding maintenance and placement of trees, and increase participation with local government to address vegetation management.

Initiative Two – Audits of Joint-Use Attachment Agreements

In its updated plan, FPUC proposes to conduct joint-use audits in accordance with the joint-use agreements. However, audits with joint-use attachers have not yet been completed. FPUC proposes in its updated plan to begin initiating audits in 2014 of all joint-use attachers and data collected during the audits will be analyzed to determine overloaded poles, unauthorized attachments, and outages relayed to these situations. FPUC will perform pole strength

assessment and stress calculations for all FPUC-owned and third-party-owned poles through its eight-year wooden pole inspection cycle.

Initiative Three – Six-Year Transmission Structure Inspection Program

FPUC seeks to continue inspecting all transmission facilities owned by FPUC. The inspections will include climbing patrols of the 69 and 138 KV transmission structures at a minimum of every six years. FPUC also proposes to continue inspecting all of its substations once a year.

Initiative Four – Hardening of Existing Transmission Structures

FPUC's current plan requires that when it becomes necessary to replace a wooden pole due to construction requirements or concerns with the integrity of the pole, a concrete pole that meets current NESC codes and storm hardening requirements will be used. FPUC proposes to continue this plan. FPUC plans to replace 35 69KV wood poles with concrete poles in 2013.

Initiative Five – Transmission and Distribution Geographic Information System

Since January 2008, both divisions of FPUC have GIS capabilities. FPUC's GIS currently is being updated and will be able to keep track of maintenance and inspections that are performed. The Company's GIS also interfaces with its Customer Information System to function as a Customer Outage Management System (OMS). FPUC's OMS allows for data collection and retrieval capabilities for analyzing and reporting reliability indices. The GIS will also collect data concerning joint-use attachments.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

In its updated plan, FPUC proposes to continue employing contractors for post-storm data collection and forensic analysis, should a significant storm occur in either division. FPUC has established a forensic oversight team to coordinate with contractors. FPUC states that if damage caused by a storm is significant, forensic analysis will be performed after post-data collection is completed. The costs associated with this initiative will vary depending upon the degree of damage associated with the storm.

Initiative Seven – Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

FPUC currently has the ability to report performance information differentiating between overhead and underground facilities. FPUC proposes to continue collecting outage data for overhead and underground systems in order to evaluate the reliability indices associated with the two construction types. In addition, FPUC believes this data will further improve the operation of its automated Customer Outage Management system.

Initiative Eight – Increased Coordination with Local Governments

FPUC proposes to continue coordinating with local city and county emergency service agencies within its service areas. FPUC also proposes to continue its participation in regularly scheduled communication events with county emergency response organizations. The plan includes having FPUC personnel located at the County's EOC on a 24-hour basis, during emergencies, to ensure good communications. FPUC continues to cooperate with local government in actively discussing both undergrounding and tree trimming issues as they arise.

Initiative Nine – Collaborative Research on Effects of Hurricane Winds and Storm Surge

The electric utilities previously established a non-profit, member-financed organization to coordinate all research efforts through the PURC, located in the Warrington College of Business at the University of Florida. PURC's work is focused on three main areas of concern: hurricane wind effects, vegetation management, and undergrounding of electric infrastructure. FPUC entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2013. FPUC will continue to support PURC's efforts and research.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

FPUC has a proposed Disaster Preparedness and Recovery plan, which identifies how FPUC will operate in emergency conditions and efficiently restore service. The plan also covers the roles and responsibilities of FPUC's employees. FPUC's plan is contained within its Emergency Procedures and updated on an annual basis, if required. FPUC also proposes to have liaisons to communicate with local governments, county EOCs, and the media regarding the status of restoration activities.

III. National Electric Safety Code (NESC) Compliance

FPUC's updated plan addresses the extent to which, at a minimum, FPUC complies with the NESC pursuant to Rule 25-6.0345(2), F.A.C. FPUC's distribution facilities comply with, and in most cases exceed, the minimum requirements of the NESC. FPUC's transmission structures also comply with the NESC. FPUC's substation facilities are also in accordance with NESC requirements.

IV. Extreme Wind Loading (EWL) Standards

New Construction – In its updated plan, FPUC states its existing distribution, transmission, and substation facilities continue to be in compliance with the NESC. FPUC notes that it will continue to use new specifications for distribution facilities that have been developed to allow certain future installations to exceed the NESC by utilizing the EWL standards. FPUC states that all of its remaining wooden transmission poles will be replaced with concrete poles that meet or exceed the NESC EWL standards. Although FPUC does not state how long this process will take, the Company asserts that when it becomes necessary to replace a wooden pole due to construction requirements or concerns with the integrity of the pole, a concrete pole

meeting the current NESC requirements will be utilized. Work has been completed around certain substations that will reduce the possibility of wind blown debris damaging substation facilities.

Major Planned Work – FPUC's updated plan proposes to continue incorporating EWL standards described by the NESC code. These standards will continue to be evaluated along with a cost/benefit analysis when new construction and major planned projects are being designed to determine the overall value and contribution to the reliability of the system.

Critical Infrastructure – FPUC states it will focus on using EWL standards for distribution facilities along major highways and where service is provided to critical infrastructure, such as hospitals, water plants, and sewage treatment plants. FPUC provides in the updated plan a list of CIF projects for the 2013-2015 timeframe.

V. Mitigation of Flooding and Storm Surge Damage

FPUC seeks to continue to develop an expanded specifications book. This book includes details on how to mitigate damage of underground and overhead distribution and overhead transmission facilities. In the Northeast Florida Division, transmission lines are currently located near and across coastal waterways. To mitigate damage, FPUC proposes to use foundations and casings to stabilize the structures due to soil conditions. FPUC does not currently have transmission facilities in its Northwest division.

In both divisions, FPUC states overhead distribution lines are subject to flooding and storm surge because lines are located near the coast or inland rivers. FPUC proposes to continue evaluating these areas and add supporting mechanisms, if needed. As for underground distribution lines, storm surges and flooding are most likely in the Northeast Florida Division. FPUC does not propose any changes to its underground distribution lines at this time. The Company states a significant amount of underground infrastructure is in place and it is impractical to make any significant changes to what is currently installed. If it is determined in the future that storm surges may impact these facilities, FPUC proposes that its installation practices will be reevaluated, and may encase the conduits, where the underground distribution lines are placed, in concrete ducts if necessary.

VI. Facility Placement

Pursuant to Rule 25-6.0341, F.A.C., FPUC's updated plan proposes safe and efficient access for installation and maintenance placement of new and replacement distribution facilities. FPUC will continue to promote placement of facilities adjacent to public roads; to utilize easements, public streets, roads, and highways; to obtain easements for underground facilities; and to use right-of-ways for conversions of overhead to underground. Placement of facilities along rear lot lines will not occur except in certain commercial applications when open access concrete/asphalt driveways are located at the rear of the development.

VII. Deployment Strategies

Facilities Affected, Including Specifications and Standards – FPUC states in its updated plan that all areas of FPUC's service territory are affected and benefit by infrastructure improvements. Transmission line inspections and transmission pole replacements will only affect the Northeast Florida Division, since there are no transmission facilities in the Northwest Florida Division. However, FPUC's distribution line rebuilding will equally benefit both divisions and comply with the NESC EWL standards.

Areas of Infrastructure Improvements – FPUC's updated plan provides a detailed description of areas where electric infrastructure improvements will be made, including facilities identified by the utility as CIF.

Joint-Use Facilities – FPUC proposes several projects intended to upgrade existing facilities to CIF. Significant numbers of poles to be upgraded will have one or more joint-use attachments. FPUC provided a list of projects for the 2013-2015 timeframe in its updated plan. The design phase of these projects will include application of NESC EWL standards to all poles being installed and all joint-use attachments.

Utility Cost/Benefit Estimates – FPUC states it does not have the supporting data to develop the cost/benefit analysis for these programs. FPUC provided estimates of costs to be incurred in connection to its updated plan. These costs seem to be reasonable as compared to the last approved storm hardening plan. However, as these programs are implemented, data will be collected that can be used in the future to develop the associated benefits. Please refer to Attachment C for a comparison of the costs associated with implementing FPUC's current and updated storm hardening plans.

Attachers Cost/Benefit Estimates – FPUC sent notification to third-party attachers of its updated and amended plan. At this time, no third-party attachers submitted information regarding FPUC's plan. However, FPUC states that it will forward estimates of costs and benefits from third-party attachers when they are received.

VIII. Attachment Standards and Procedures

FPUC's updated plan includes Attachment Standards and Procedures addressing safety, reliability, and pole loading capacity. The updated plan also addresses engineering standards and procedures for attachments by others to the utility's transmission and distribution poles that meet or exceed the NESC pursuant to Rule 25-6.034, F.A.C.

IX. Conclusion

FPUC's updated plan is largely a continuation of its current Commission-approved plan. Staff believes FPUC is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Therefore, staff recommends the Commission approve FPUC's updated 2013-2015 storm hardening plan.

Issue 3: Should the Commission approve Florida Power & Light Company's 2013–2015 storm hardening plan filed in Docket No. 130132-EI?

Recommendation: Yes. FPL's updated plan is largely a continuation of its current Commission-approved plan. Since, Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on FPL's infrastructure. However, staff believes FPL is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. (L'Amoreaux)

Staff Analysis: On Attachment D, staff provided a summary of FPL's currently approved storm hardening plan and the proposed changes contained in its updated plan. In addition, where available, staff has shown the costs associated with the 2010-2012 and 2013-2015 plans. Components of FPL's updated plan are summarized below.

I. Wooden Pole Inspection Program

FPL proposes to continue its eight-year wooden pole inspection as required by Commission Order No. PSC-07-0078-PAA-EU. FPL will continue to file the results of these inspections in FPL's Annual Electric Utility Distribution Reliability Report.

II. Ten Initiatives

Initiative One – Three-Year Vegetation Management cycle for Distribution Circuits

FPL seeks to continue its previously approved plan for Initiative One. Currently, FPL has a three-year average trim cycle for feeders and a six-year average cycle for distribution laterals. FPL also proposes to continue targeted trimming and maintenance of tree species that often grow faster than others; tress that are leaning, damaged, or dead; tree removal; and trees reported by customers as needing attention. FPL maintains that it is on schedule with this initiative.

Initiative Two – Audits of Joint-Use Attachment Agreements

FPL wishes to continue collaborating with cable television (CATV) companies, telecommunication companies, and governmental entities to complete system-wide pole attachment surveys on a five-year cycle. The pole attachment survey focuses on compliance with existing pole attachment agreements for all FPL-owned and joint-use poles. FPL proposes to continue conducting pole strength assessments in conjunction with its eight-year wooden pole inspection program.

Initiative Three – Six-Year Transmission Structure Inspection Program

FPL proposes to continue inspection of all transmission lines and structures on a six-year cycle and continue conducting inspections of substations each year.

Initiative Four – Hardening of Existing Transmission Structures

FPL plans to replace all wooden transmission structures with round spun concrete poles and replacing ceramic post insulators on concrete poles with polymer post insulators. In addition, FPL has plans to increase the replacement rate for wood transmission structures, and ceramic post insulators on square concrete poles. FPL will prioritize these two existing transmission storm hardening initiatives based on factors including proximity to high wind areas, system importance, customer count, and coordination with the distribution CIF storm initiative.

Initiative Five – Transmission and Distribution Geographic Information System

FPL has established GIS databases for data on its distribution and transmission systems, such as pole inspection records (e.g., pole locations and attributes), joint-use audit data, levels of hardening, and information on streetlights. FPL will continue to update its GIS as needed and maintain updated information on both the Company's distribution and transmission systems.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

To conduct forensic data collection and analysis, FPL will continue to select a random sample of locations from the total GIS pole set (all distribution poles in the wind band area) without any consideration of pole attributes or specific pole location data. Forensic teams will then observe all damaged locations, including damage to poles, wires, and distribution equipment. While storm damage data is collected in certain areas, restoration crews will begin their work in other locations. This will allow the collection of sample observations for forensic analysis without impeding early restoration work. FPL has not experienced a hurricane event during 2010-2012; therefore, no significant forensic data is available at this time.

Initiative Seven – Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

FPL's updated plan proposes to continue managing its assets and performing forensic analyses to differentiate between overhead and underground performance, depending on the severity of a given storm. However, distinguishing between overhead and underground performance has been very difficult since no significant hurricanes were experienced between 2010 through 2012.

Initiative Eight – Increased Coordination with Local Governments

FPL proposes to continue meeting with county emergency operations managers and municipalities to discuss critical infrastructure, line clearing, storm readiness, and underground conversions. The Company has developed an enhanced e-mail distribution process and network to target key messages to all governmental audiences. In addition, meetings and workshops will be held with local governments to explain FPL's efforts to enhance service reliability and to provide information on hardening projects within the locale.

Initiative Nine – Collaborative Research on Effects of Hurricane Winds and Storm Surge

The electric utilities previously established a non-profit, member-financed organization to coordinate all research efforts through the PURC, located in the Warrington College of Business at the University of Florida. PURC's work is focused on three main areas of concern: hurricane wind effects, vegetation management, and undergrounding of electric infrastructure. FPL entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2013.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

FPL wishes to continue refining its Storm Emergency Management plan, which identifies emergency conditions and the responsibilities and duties of the FPL emergency response organization for severe storms. This plan covers the roles and responsibilities of key positions and includes FPL's overall severe storm emergency processes. These processes describe the planning activities, restoration work, public communications, coordination with government, training, practice exercises, and lessons learned evaluation systems. This plan is reviewed and revised annually.

III. National Electric Safety Code (NESC) Compliance

FPL's updated plan proposes the extent to which, at a minimum, FPL complies with the NESC pursuant to Rule 25-6.0345(2), F.A.C. FPL's distribution facilities comply with, and in most cases exceed, the minimum requirements of the NESC. FPL's transmission structures also comply with the NESC.

IV. Extreme Wind Loading (EWL) Standards

New Construction – FPL's updated plan continues a three-prong approach to hardening distribution infrastructure: proactive implementation of EWL for critical facilities; incremental hardening for commercial facilities that serve important roles following a storm; and revision of design guidelines intended to gradually move FPL's total system to EWL hardening over time.

Major Planned Work – In addition to the facilities serving CIF customers, FPL proposes to complete incremental hardening on feeders associated with five community projects. Community projects serve local needs such as grocery stores, gas stations, and pharmacies. The objective of incremental hardening is to optimize the existing distribution infrastructure and increase the overall wind profile of a feeder to a higher wind rating, up to and including EWL. Incremental hardening will apply appropriate combinations of cost-effective engineering options to eliminate weaker links and take advantage of the existing storm resilience of a feeder.

Critical Infrastructure – FPL defines CIF as facilities serving critical customers, such as hospitals, 911 centers, special needs shelters, water treatment plants, and police and fire stations. In 2013, FPL proposes to utilize EWL standards to harden 80 CIF feeders serving 156 CIF customer accounts. FPL will focus on hardening to EWL three overhead highway crossings on I-95, I-75, and Sawgrass Expressway as well as 12 additional critical poles, each being the first

distribution feeder pole outside of a substation. These projects have been targeted because of their criticality in expediting restoration efforts. Additionally, FPL proposes to complete incremental hardening on 11 community project feeders.

V. Mitigation of Flooding and Storm Surge Damage

FPL proposes to continue adherence to guidelines in place for the prompt post-storm inspection and mitigation of damage to equipment exposed to flooding or storm surge. These guidelines outline the necessary steps to purge any sand and water that has invaded equipment and to restore it to service.

VI. Facility Placement

Pursuant to Rule 25-6.0341, F.A.C., FPL's updated plan proposes safe and efficient access for installation and maintenance placement of new and replacement distribution facilities. FPL proposes to continue its Distribution Guidelines, which address the location of new and replacement poles in private easements, and location of overhead lines.

VII. Deployment Strategies

Facilities Affected, Including Specifications and Standards – FPL's updated plan contains technical design specification, construction standards and methodologies. FPL seeks to continue to utilize its design toolkit that focuses on evaluating and using cost-effective hardening options for each location. For example, FPL's toolkit includes information on equipment relocation, upgrading pole classes, and undergrounding facilities.

Areas of Infrastructure Improvements – FPL's updated plan describes how the Company expects a reduction in storm restoration costs as well as non-storm restoration costs as a result of its planned hardening activities. FPL does not feel that it has sufficient information at this time to distinguish between the benefits attributable to one type of hardening activity versus another due to lack of storm events.

Joint-Use Facilities – As discussed above, FPL partners with CATV and telecommunication companies to complete system-wide pole attachment surveys on a five-year cycle. In addition, FPL continues to include pole strength assessments addressing the impacts of existing pole attachments in conjunction with its eight-year wooden pole inspection program.

Utility Cost/Benefit Estimates – FPL provided estimates of costs to be incurred in connection to its updated plan. These costs seem to be reasonable as compared to the last approved storm hardening plan. FPL states analyses and forensic observations performed after Hurricanes Katrina and Wilma serve as the foundation for FPL's hardening efforts, but there is presently limited or no historical data available for purposes of conducting overall cost and benefit analyses on many of its actions. As additional storm experience is encountered, better detailed cost and benefit analyses will be performed and more cost-effective hardening solutions implemented. Attachment D shows the costs associated with implementing FPL's current and updated storm hardening plan.

Attachers Cost/Benefit Estimates – On April 15, 2013, FPL mailed an informational package regarding its 2013-2015 updated plan, as well as the current draft of its Attachment Standards and Procedures, to all attaching entities. FPL was contacted by 11 attaching entities; however, there were no suggested changes or issues. In addition, attachers did not provide any benefit information.

VIII. Attachment Standards and Procedures

FPL's updated plan includes Attachment Standards and Procedures. These standards and procedures reflect the attachments and standards previously in place, which incorporate FPL's proposed hardening construction standards and design guidelines.

IX. Conclusion

FPL's updated plan is largely a continuation of its current Commission-approved plan. Since Florida has not been affected by any named storms in the past few years, no data are available to evaluate the effects of hardening efforts on FPL's infrastructure. However, staff believes FPL is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Therefore, staff recommends the Commission approve FPL's updated 2013-2015 storm hardening plan.

Issue 4: Should the Commission approve Tampa Electric Company's 2013–2015 storm hardening plan filed in Docket No. 130138-EI?

Recommendation: Yes. TECO's updated plan is largely a continuation of its current Commission-approved plan. Since, Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on TECO's infrastructure. However, staff believes TECO is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. (L'Amoreaux)

Staff Analysis: On Attachment E, staff provided a summary of TECO's currently approved storm hardening plan and the proposed changes in its updated plan. In addition, where available, staff has shown the costs associated with the 2010-2012 and 2013-2015 plans. Components of TECO's updated plan are summarized below.

I. Wooden Pole Inspection Program

TECO is continuing its eight-year wooden pole inspection as required by the Commission Order No. PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 060531-EU.[12] TECO will continue to file the results of these inspections in TECO's Annual Electric Utility Distribution Reliability Report.

II. Ten Initiatives

Initiative One – Three-Year Vegetation Management cycle for Distribution Circuits

TECO proposes no changes to its previously approved trim cycle in Order No. PSC-12-0303-PAA-EI, issued June 12, 2012, in Docket No. 120038-EI. Currently, both feeder and lateral circuits are trimmed, on average, every four years.[13]

Initiative Two – Audits of Joint-Use Attachment Agreements

Pursuant to Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 060198-EI,[14] TECO will conduct an audit of all pole attachments on an eight-year cycle at a minimum. However, for some licensees, TECO reserves the right to complete this audit annually based on need and cost-effectiveness.

Initiative Three – Six-Year Transmission Structure Inspection Program

TECO performs multi-pronged inspections on a one-, six-, or eight-year cycle, depending on the individual transmission inspection activity. TECO also conducts annual ground patrol,

[12] Docket No. 060531-EU, In re: Review of all electric utility wooden pole inspection programs.
[13] Docket No. 120038-EI, In re: Petition to modify vegetation management plan by Tampa Electric Company.
[14] Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

aerial infrared patrol, and substation inspections. TECO proposes to continue these practices in its updated plan. The six-year cycle will continue to include above ground inspections, while groundline inspections will be performed on an eight-year cycle. In 2012, the number of groundline inspections performed on TECO's transmission poles enabled the Company to complete the eight-year cycle in seven years. The next eight-year inspection cycle will begin in 2014. In addition, TECO proposes to continue its review of sites located in Flood Zone 1 (as defined in Hillsborough County's hazard flood maps). The major focus will continue to be on the elevation and water resistance of control cabinets and related equipment. However, practical modifications will be made if necessary.

Initiative Four – Hardening of Existing Transmission Structures

TECO currently upgrades its existing transmission structures during roadway relocation projects and as other maintenance activities provide cost-effective opportunities. TECO's updated plan continues replacement of wooden transmission structures with non-wooden structures based primarily on pole inspection results. Additionally, the Company will continue to utilize non-wood structures for all new transmission line construction projects, as well as system rebuilds and line relocation.

Initiative Five – Transmission and Distribution Geographic Information System

TECO established and accepted its GIS in September 2009. TECO's GIS databases contain all facility data for transmission, substation, distribution, and lighting facilities. This system will enhance post-storm damage assessment, forensic analysis, joint-use administration, and the evaluation of construction standards and potential hardening projects.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

TECO has hired a consultant to perform forensic analysis and data collection, such as identifying the type of damage to poles, structures, conductors, equipment, and hardware. This consultant is to provide a report containing data collected, results of its findings and recommendations on improving system performance. However, TECO did not experience any weather events significant enough to require forensic data. Therefore, no significant forensic data is available at this time.

Initiative Seven – Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

TECO has had no storm activity requiring an overhead and underground performance review or report. However, TECO asserts it has measures in place to track initiatives related to GIS, post-storm data collection, and outage data should it experience any major storm events in the future.

Initiative Eight – Increased Coordination with Local Governments

TECO proposes to continue conducting workshops with local governments and county EOC's to discuss pre-storm preparedness and hazard mitigation, and to set common priorities to be applied during emergency events. In addition, the Company will continue to conduct damaged facility reporting training, and to share information on the costs and benefits of undergrounding electric facilities.

Initiative Nine – Collaborative Research on Effects of Hurricane Winds and Storm Surge

The electric utilities previously established a non-profit, member-financed organization to coordinate all research efforts through PURC, located in the Warrington College of Business at the University of Florida. PURC's work is focused on three main areas of concern: hurricane wind effects, vegetation management, and undergrounding of electric infrastructure. TECO entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2013.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

TECO proposes to continue working with county EOCs to review restoration priorities in the Company's service areas. TECO's Energy Delivery department will continue many activities throughout the storm season. These activities include facilitating training sessions, staging sites to ensure primary and backup locations for distribution and transmission facilities, holding conference calls, and reviewing all employees' storm assignments and communication roles. In addition, TECO will continue to conduct mock drills that address hurricane issues.

III. National Electric Safety Code (NESC) Compliance

TECO's updated plan addresses the extent to which, at a minimum, TECO complies with the NESC pursuant to Rule 25-6.0342(2), F.A.C. TECO's distribution facilities comply with, and in most cases exceed, the minimum requirements of the NESC. TECO's transmission structures also comply with the NESC.

IV. Extreme Wind Loading (EWL) Standards

New Construction – TECO proposes to continue its practice for distribution and transmission facilities based on NESC Grade B construction. In addition, the extreme wind loads are applied to all attachments on the transmission structures regardless of attachment height.

Major Planned Work – TECO proposes to continue building to Grade B construction for all major planned expansions, rebuilds, or relocations of distribution facilities. Staff notes that while Rule 25-6.0342, F.A.C., requires that a utility's plan address the extent to which EWL standards are adopted for various types of facilities, it does not require a utility to adopt a particular standard.

Critical Infrastructure – TECO's downtown network is considered CIF due to the high concentration of business and governmental buildings in the area. TECO proposes to test approximately eight network protectors per year in the 12 low-lying vaults downtown. In addition, for 2013 a restoration plan for the downtown network will be developed to ensure that an efficient network distribution system recovery takes place in the event of total power loss. The Company also provided information on other projects currently being completed for the Port of Tampa and Saint Joseph's Hospital.

V. Mitigation of Flooding and Storm Surge Damage

TECO proposes to continue its current standard for all new and maintenance replacement of underground distribution facilities located in Flood Zone 1. TECO will focus on elevation and water resistance of control cabinets and related equipment.

VI. Facility Placement

TECO proposes to continue placement of all new distribution facilities in the public right-of-way. In addition, TECO proposes to continue evaluating community and customer requests to relocate overhead facilities from rear lot locations to the front of a customer's property on a case-by-case basis.

VII. Deployment Strategies

Facilities Affected, Including Specifications and Standards – TECO's updated plan contains a detailed three-year deployment strategy, which includes a description of facilities affected by inspection programs, technical design specification, construction standards and methodologies.

Areas of Infrastructure Improvements – TECO's updated plan provides a detailed description of the communities and areas where electric infrastructure improvements will be made, including facilities identified by the utility as critical infrastructure and along major thoroughfares.

Joint-Use Facilities – TECO continues to conduct an inspection of all poles on its system on an eight-year cycle. TECO proposes to continue to meet with all joint-use attachers and provide attachers with information preformed from pole testing and any cost or impact to those joint-use attachers.

Utility Cost/Benefit Estimates – TECO's updated plan includes estimates of costs to be incurred in connection with its updated plan for 2013 through 2015. This includes pole replacement, inspections of distribution and transmission facilities, vegetation management, and other projects. These costs seem to be reasonable as compared to the last approved storm hardening plan. Since TECO has not experienced any major storms since implementation of its plan the Company has minimal evidence of benefits from storm hardening projects. Attachment E shows a comparison of the costs associated with implementation of TECO's current and updated storm hardening plans.

Attachers Cost/Benefit Estimates – TECO's updated plan provided attachment standards procedures that will benefit at minimal cost to all third-party attachers. However, TECO did not state in its updated plan whether the Company had sought input or received estimate benefit information from attachers.

VIII. Attachment Standards and Procedures

TECO's updated plan includes Attachment Standards and Procedures addressing safety, reliability, and pole loading capacity. The updated plan also addresses engineering standards and procedures for attachments by others to the utility's transmission and distribution poles that meet or exceed the NESC (ANSI C-2) pursuant to Rule 25-6.034, F.A.C.

IX. Conclusion

TECO's updated plan is largely a continuation of its current Commission-approved plan. Since Florida has not been affected by any named storms in the past few years, no data are available to evaluate the effects of hardening efforts on TECO's infrastructure. However, staff believes TECO is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Therefore, staff recommends the Commission approve TECO's updated 2013-2015 storm hardening plan.

Issue 5: Should the Commission approve Gulf Power Company's 2013-2015 storm hardening plan filed in Docket No. 130139-EI?

Recommendation: Yes. Gulf's updated plan is largely a continuation of its current Commission-approved plan. Since, Florida has not been affected by any named storms in the past few years, data are not available to evaluate the effects of hardening efforts on Gulf's infrastructure. However, staff believes Gulf is taking proactive steps to improve its system to withstand severe weather events and thus presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. (Buys, L'Amoreaux)

Staff Analysis: On Attachment F, staff has provided a summary of Gulf's currently approved storm hardening plan and the proposed changes contained in its updated plan. In addition, where available, staff has shown the costs associated with the 2010-2012 and 2013-2015 plans. Components of Gulf's updated plan are summarized below.

I. Wooden Pole Inspection Program

Gulf proposes to continue its wooden pole inspection program on an eight-year cycle utilizing the same inspection matrix approved by the Commission in 2010. This inspection matrix includes all poles based on age, treatment type (Creosole, Penta, and CCA), and condition. By using the matrix, all poles that Gulf inspects receive a visual inspection with sounding, boring, and excavation as appropriate. As of the end of the sixth year of the eight-year cycle, Gulf has inspected 88 percent of its poles and is on target to complete the eight-year cycle. Gulf will continue to file the results of these inspections in Gulf's Annual Electric Utility Distribution Reliability Report.

II. Ten Initiatives

Initiative One – Three-Year Vegetation Management cycle for Distribution Circuits

Gulf proposes to continue its three-year trim cycle for feeders and four-year cycle for laterals. When Gulf evaluated the reliability data associated with the trim cycles, there was an improvement or reduction in Customer Interruptions (CI) and Customer Minutes of Interruptions (CMI) related to outages caused by trees. With the reduction in CI and CMI related to outages caused by tress, Gulf does not propose any modification of the trim cycles for its feeders and laterals. Gulf plans to evaluate reliability data at the end of each year to determine if the trim cycles continue to improve system performance.

Initiative Two – Audits of Joint-Use Attachment Agreements

Gulf proposes to continue field audits of joint-use poles which are conducted every five years. The field audits are outlined in the contractual agreements with third-party attachers. The audits include poles owned by the Company and poles that are not owned by Gulf where the Company has attached its equipment. The last joint-use field audit was conducted in 2011, and the data collected during that audit was GPS pole location, pole owner, pole type, pole treatment,

pole height and class, manufacture date, attachment information, and pole identification numbers. The next joint-use field audit is scheduled for 2016.

Initiative Three – Six-Year Transmission Structure Inspection Program

Gulf proposes to continue its approved plan for Initiative Three. Under the previously approved plan, Gulf inspects all of its substations annually and schedules inspections of its transmission structures based on achieving a six-year inspection cycle of these facilities.

Initiative Four – Hardening of Existing Transmission Structures

Gulf proposes to continue its existing plan for hardening transmission facilities. It is Gulf's position that adherence to the current design and construction standards, along with the recommended six-year structure inspection program, will provide for sufficient hardening of the system throughout its service territory. During 2010 through 2012, Gulf completed the installation of storm guys on all wooden H-frame structures and replaced over 750 wood cross-arms. Gulf proposes to continue replacing wooden H-frame cross-arms with steel cross-arms in 2013 through 2015. Gulf plans to replace 600 wood cross-arms during the next three years.

Initiative Five – Transmission and Distribution Geographic Information System

Gulf has established GIS databases for distribution, transmission, and land records. The GIS has the capabilities to provide electronic models of Gulf's electrical system that is overlaid on a representation of the land base. The system also provides data to other Gulf systems such as the Trouble Call Management System. Gulf proposes to maintain and update data for its asset management programs and forensic data analysis in its GIS.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

Gulf has a process for the collection, evaluation and reporting of storm damage data for post-storm forensic analysis. Contractors will be retained by Gulf to gather and evaluate storm forensic data to determine the benefits of particular approaches to hardening as they might be applied to new construction and major planned work, including expansion, rebuilding, and relocation of existing facilities. Gulf proposes to continue to use the forensic program that is in place. Gulf also proposes to conduct refresher training courses for proper forensic collection procedures. These courses will continue as needed over the next three years.

Initiative Seven – Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems

Gulf proposes to continue recording the number of overhead and underground customers in order to calculate reliability indices. In addition, data obtained on outages will be collected and stored for future analysis. The data collected on outages will include how the underground cable is buried and what type of pole is used for overhead systems.

Initiative Eight – Increased Coordination with Local Governments

Gulf proposes to continue working with the county EOCs in its service area through numerous programs in order to keep the community and local governments informed of storm occurrences and restoration activities. In addition, Gulf proposes to maintain year-round contact with city and county officials to ensure cooperation in planning, communicating, and coordinating for storm-related activities. Gulf will communicate with local governments, community groups, and homeowners associations regarding vegetation management projects.

Initiative Nine – Collaborative Research on Effects of Hurricane Winds and Storm Surge

The electric utilities previously established a non-profit, member-financed organization to coordinate all research efforts through PURC, located in the Warrington College of Business at the University of Florida. PURC's work is focused on three main areas of concern: hurricane wind effects, vegetation management, and undergrounding of electric infrastructure. Gulf entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2013. Gulf proposes to continue to participate in the research and development activities that PURC initiates.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

Gulf proposes to continue refining its Storm Recovery Plan, which identifies planning procedures and preparations for natural disasters within Gulf's service area. This plan builds on lessons learned and encompasses recovery effort experiences within its service area as well as knowledge gained from assisting other utilities that have suffered weather-related natural disasters. This plan is reviewed and revised annually. No major revisions were submitted in the Company's March 1, 2013, annual filing.

Additional Projects

In addition to the Ten Initiatives required by Commission order, Gulf proposes three additional projects to its updated plan that concentrate on reliability. First, Gulf proposes to continue to install additional distribution automation devices on distribution feeders for outage restoration. These devices would be controlled by company personnel remotely or placed on automated restoration schemes and would protect feeders from temporary faults. Second, Gulf proposes to continue the installation of automatic overhead faulted circuit indicators. Doing this would reduce customer outage time because these devices indicate the passage of fault current that is greater than a predetermined current magnitude. Gulf will install faulted circuit indicators at 14 locations per year. Last, Gulf proposes to continue to implement systems and applications that would permit the remote control of distribution line devices such as reclosers and switches and the acquisition of operational data, in order to reduce customer outage times.

III. National Electric Safety Code (NESC) Compliance

Gulf's updated plan addresses the extent to which, at a minimum, Gulf complies with the NESC pursuant to Rule 25-6.0345(2), F.A.C. Gulf's distribution facilities comply with, and in

most cases exceed, the minimum requirements of NESC. Gulf's transmission structures and substations also comply with NESC.

IV. Extreme Wind Loading (EWL) Standards

New Construction – Gulf's updated plan proposes to continue to adopt Grade B construction standards on all new distribution construction, maintenance work, and major projects. All of Gulf's new transmission construction is designed using EWL criteria. Although Gulf has completed the implementation of Grade B construction into its construction practices, and completed the extreme wind loading pilot projects and replacement of wooden poles with concrete poles on critical multiple feeder poles outlined in its 2007-2009 and 2010-2012 Storm Hardening Plan; Gulf still lacks the data to support the benefits associated with the upgrades due to a lack of major storms during this time period to test the construction practices. Gulf believes it is prudent to move cautiously into further application of the extreme wind loading standards and wood to concrete pole replacements until it is able to determine the cost and outage benefits.

Major Planned Work – In order to obtain the most potential cost/benefit, Gulf proposes to target critical pole lines with multiple feeders on them and convert them to Grade B construction. In addition, its existing wooden poles will be replaced with concrete poles from the substations to strategic operational points on the feeders. Gulf believes using concrete poles will extend the life of the pole and provide uniform pole strength for the entire pole height. Gulf will continue to maintain meteorological wind stations located at strategic locations that collect granular wind data to help determine the effectiveness of these facility upgrades in future storm events.

Critical Infrastructure – In the current plan, Gulf performed EWL pilot projects for distribution facilities serving critical infrastructures such as hospitals, fuel depots, sewage treatment plants, and major roadway crossings across the its service area. Gulf proposes to continue applying EWL standards to critical infrastructure facilities and major thoroughfares as pilot projects, and will use Grade B for all new distribution facility construction.

V. Mitigation of Flooding and Storm Surge Damage

Gulf proposes to continue adherence to its current overhead and underground storm hardening specifications in order to minimize damage in areas subject to flooding and storm surges. These specifications will evolve as Gulf continues to seek out best practices and learn from the review of gathered forensic data. Gulf's updated plan shows projects completed during the 2007-2009 plan and 2010-2012 plans and projects schedule for 2013 through 2015. Gulf stated new underground installation and conversions of overhead facilities to underground facilities are customer driven. Future underground transmission projects will be engineered to consider the impact of flooding or storm surges from weather events; however, Gulf does not currently have any such new projects planned.

VI. Facility Placement

Gulf proposes to continue promoting proper placement of facilities adjacent to public roads, to use easements, public streets, roads and highways, to obtain easements for underground facilities and to use road right-of-ways for conversions of overhead systems to underground

systems. Pursuant to Rule 25-6.0341, F.A.C., Gulf's updated plan proposes safe and efficient access for installation and maintenance placement of new and replacement distribution facilities.

VII. Deployment Strategies

Facilities Affected, Including Specifications and Standards – Gulf's updated plan provides a detailed description of its deployment strategy, including a description of the facilities affected, technical design specifications, construction standards, and construction methodologies to be employed. Gulf states that it will continue the replacement of wooden cross-arms with steel cross-arms on H-frame structures on the transmission system. In addition, Gulf's proposes to continue to upgrade construction standards to Grade B which has the potential to minimize possible outages and improve restoration efforts to its ratepayers.

Areas of Infrastructure Improvements – Gulf's updated plan provides a detailed description of the communities and areas where electric infrastructure improvements will be made, including facilities identified by the utility as critical infrastructure and along major thoroughfares.

Joint-Use Facilities – Gulf has worked with all third-party attachers to provide sufficient details of proposed electric infrastructure improvements and to determine potential impacts to joint-use facilities. For joint-use notifications and coordination of construction activities, Gulf uses the national Joint-Use Notification System. In third-party attachers' contracts, Gulf provides details on notification protocol for new attachment permits and over lashing projects and the associated construction coordination.

Utility Cost/Benefit Estimates – In Gulf's updated plan, a spreadsheet was provided of all costs relating to implementation of the proposed updated plan. These costs seem to reasonable as compared to the last approved storm hardening plan. Attachment F shows costs associated with implementing Gulf's updated plan. Gulf cannot estimate the reductions in storm restoration cost and outages that results from storm hardening initiatives because of the lack of data at this time. When a major storm event happens in the future, Gulf will be able to evaluate the effectiveness of Grade B construction and critical infrastructure storm hardening projects.

Attachers Cost/Benefit Estimates – Gulf's attachers have not provided their cost and benefit data at this time. Gulf sought input regarding its 2013-2015 updated plan by supplying drafts and conducting face-to-face semi-annual meetings with attaching entities. However, Gulf was not contacted by any attaching entities.

VIII. Attachment Standards and Procedures

Gulf's updated plan includes Attachment Standards and Procedures. These standards and procedures encompass information governing safety, reliability, pole loading capacity, and engineering standards and procedures for third-party attachments.

IX. Conclusion

Gulf's updated plan is largely a continuation of much of its current Commission approved plan. Gulf's updated plan also includes improvements to many ongoing storm hardening activities, additions to the Ten Initiatives, as well as continued practices that have enhanced reliability. Staff believes Gulf is taking proactive steps to improve its system to withstand severe weather events and presents a reasonable approach to storm hardening that has the potential to enhance reliability and reduce restoration costs and outage times. Therefore, staff recommends the Commission approve Gulf's updated 2013-2015 storm hardening plan.

Issue 6: Should these dockets be closed?

Recommendation: Yes. If no person whose substantial interests are affected by the proposed agency action files a protest within 21 days of the issuance of the orders, these dockets should be closed upon the issuance of the consummating orders. (Gilcher)

Staff Analysis: At the conclusion of the protest period, if no protest is filed these dockets should be closed upon the issuance of a consummating orders. Separate orders will be issued for each docket to reflect the Commission's vote. For each such order, if no person whose substantial interests are affected by the proposed agency action files a protest within 21 days of the issuance of the respective docket's order, each docket should be closed upon issuance of a separate consummating order. A protest by an affected person in a docket will not preclude the non-protested dockets from closing.

Storm Hardening Requirements: Wooden Pole Inspection Program & 10 Initiatives

Eight-Year Wooden Pole Inspection Program
1. Implement an eight-year wooden pole inspection cycle by Order Nos. PSC-06-0144-PAA-EI and PSC-07-0078-PAA-EU.
2. File an annual report with the Commission.
3. Provide cost estimates.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits
1. Three-year tree trim cycle for primary feeders (minimum).
2. Three-year cycle for laterals as well, if not cost-prohibitive.
3. Provide cost estimate.

Initiative 2 – Audit of Joint-Use Attachment Agreements
1. (a) Each investor-owned electric utility shall develop a plan for auditing joint-use agreements that includes pole strength assessments.
(b) These audits shall include both poles owned by the electric utility poles owned by other utilities to which the electric utility has attached its electrical equipment.
2. The location of each pole, the type and ownership of the facilities attached, and the age of the pole and the attachments to it should be identified.
3. Each investor-owned utility shall verify that such attachments have been made pursuant to a current joint-use agreement.
4. Stress calculations shall be made to ensure that each joint-use pole is not overloaded or approaching overloading for instances not already addressed by Order No. PSC-06-0144-PAA-EI.
5. Provide compliance cost estimate and cost estimate for alternative action, if any.

Initiative 3 – Six-Year Transmission Inspection Program
1. Develop a plan to fully inspect all transmission towers and other transmission supporting equipment (such as insulators, guying, grounding, splices, cross-braces, bolts, etc.).
2. Develop a plan to fully inspect all substations (including relay, capacitor, and switching stations).
3. Provide compliance cost estimate and cost estimate for alternative actions, if any.

Initiative 4 – Hardening of Existing Transmission Structures
1. Develop a plan to upgrade and replace existing transmission structures. Provide a scope of activity, limiting factors, and criteria for selecting structure to upgrade and replace.
2. Provide a timeline for implementation.
3. Provide compliance cost estimate and cost estimate for alternative actions, if any.

Initiative 5 – Transmission and Distribution Geographic Information System
1. To conduct forensic review.
2. To assess the performance of underground systems relative to overhead systems.
3. To determine whether appropriate maintenance has been performed.

4. To evaluate storm hardening options.
5. Provide a timeline for implementation.
The utilities have the flexibility to propose a methodology that is efficient and cost-effective.

Initiative 6 – Post-Storm Data Collection and Forensic Analysis
1. Develop a program that collects post-storm information for performing forensic analyses.
2. Provide a timeline for implementation.
The utilities have the flexibility to propose a methodology that is efficient and cost-effective.

Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems
1. Collect specific storm performance data that differentiates between overhead and underground systems, to determine the percentage of storm-caused outages that occur on overhead and underground systems, and to assess the performance and failure mode of competing technologies, such as direct bury cable versus cable-in-conduit, concrete poles versus wooden poles, location factors such as front-lot versus back-lot, and pad-mounted versus vault.
2. Provide a timeline for implementation.
The Utilities have the flexibility to propose a methodology that is efficient and cost-effective.

Initiative 8 – Increased Coordination with Local Governments
1. Each utility should actively work with local communities year-round to identify and address issues of common concern, including the period following a severe storm like a hurricane and also ongoing, multi-hazard infrastructure issues such as flood zones, area prone to wind damage, development trends in land use and coastal development, joint-use of public right-of-way, undergrounding facilities, tree trimming, and long-range planning and coordination.
2. Incremental plan costs.

Initiative 9 – Collaborative Research
1. Must establish a plan that increases collaborative research.
2. Must identify collaborative research objective.
3. Must solicit municipals, cooperatives, educational and research institutions.
4. Must establish a timeline for implementation.
5. Must identify the incremental costs necessary to fund the organization and perform the research.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program
1. Develop a formal Natural Disaster Preparedness and Recovery Plan that outlines the utility's disaster recovery procedures if the utility does not already have one.

Duke Energy Florida, Inc.

Eight-Year Wooden Pole Inspection Program	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2010-2012 were $7,537,995.	3. Costs for 2013 are estimated to be $2,399,772.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. Implement a three-year average trim cycle for feeders with targeted feeder trims based on prioritization.	1. No change
2. Implement an average five-year trim cycle for laterals.	2. No change
3. Costs for 2010-2012 were $73,992,778.	3. Costs for 2013 are estimated to be $25,193,043.

Initiative 2 – Audit of Joint-Use Attachment Agreements	
Current Plan	Updated Plan
1. (a) Perform a Comprehensive Loading Analysis and annual partial system audits.	1. (a) No change
(b) Audit all DEF-owned and joint-use poles during eight-year wooden pole inspection cycle.	(b) No change
2. All required data collected on select poles and stored in electronic format.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements.	3. No change
4. Stress calculations performed on select poles during eight-year wooden pole inspection cycle.	4. No change
5. Cost for 2010-2012 were $1,511,045	5. Costs for 2013 are estimated to be $553,564.

Initiative 3 – Six-Year transmission Inspection Program	
Current Plan	Updated Plan
1. Inspection program is multi-pronged approach with inspection cycles of one,	1. No change

six, or eight years depending on the goals or requirements of the individual inspection activity.	
2. Annual substation inspections.	2. No change
3. Costs for 2010-2012 were $52,330,307.	3. Costs for 2013 are estimated to be $20,240,334.

Initiative 4 – Hardening of Existing Transmission Structures	
Current Plan	Updated Plan
1. Incremental upgrades during relocations, replacement of existing wooden transmission pole, and other maintenance.	1. No change
2. Plan completed in 10 or more years starting in 2007.	2. No change
3. Costs for 2010-2012 were $279,637,118.	3. Costs for 2013 are estimated to be $93,495,002.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. Plan includes forensic review.	1. No change
2. Plan includes underground system relative to overhead.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Plan includes evaluation of storm hardening options.	4. No change
5. Continue use of G-electric system	5. No change

Initiative 6 – Post-Storm Data Collection and Forensic Analysis	
Current Plan	Updated Plan
1. DEF has forensic teams in place and will collect and analyze samples.	1. No change
2. Plan continues to be implemented as severe weather events occur.	2. No change

Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems	
Current Plan	Updated Plan
1. DEF's Storm Preparedness Plan has been initiated.	1. No change
2. Implement in 2007. Storm performance results are obtained from PEF's GIS.	2. No change

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. DEF focuses on year-round communication with local governments. In addition, DEF implements meetings to discuss city and county projects.	1. No change
2. Costs for 2010-2012 are unknown at this time.	2. Costs for 2013 were estimated to be $114,295*.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
1. Collaborative research efforts, led by PURC, which began in 2007.	1. No change
2. Research vegetation management during storm and non-storm times, wind during storm and non-storm events, hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	2. No change
3. DEF will solicit participation from other utilities and organizations.	3. No change
4. Implementation is ongoing	4. DEF has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2013.
5. Costs for 2010-2012 were $0	5. Costs for 2013-2015 are unknown at this time.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program	
Current Plan	Updated Plan
Disaster Preparedness/Recovery Plan has been developed and filed.	Continue to refine.

*DEF has estimated the amount of time that each member of the governmental coordination team allocated to that function and multiplied each member's base salary by the estimated percentage, resulting in an estimated allocation for each member's base salary to their role on the governmental coordination team.

Florida Public Utilities Company

Eight-Year Wooden Pole Inspection Program	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2010-2012 were $364,520.	3. Costs for 2013 are estimated to be $116,738.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. All feeders are on a three-year trim cycle.	1. No change
2. Laterals are on a six-year trim cycle.	2. No change
3. Costs for 2010-2012 were $2,190,758.	3. Costs for 2013 are estimated to be $821,682.

Initiative 2 – Audit of Joint-Use Attachment Agreements	
Current Plan	Updated Plan
1. (a) Perform pole strength assessment during the eight-year wooden pole inspection cycle	1. (a) No change
(b) FPUC conducts a thorough joint-use audit once every five years in addition to the eight-year pole inspection.	(b) No change
2. All required data collected during inspections and stored in a database.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements during the eight-year wooden pole inspection cycle.	3. No change
4. Stress calculations performed on select poles during eight-year wooden pole inspection cycle.	4. No change
5. Costs for 2010-2012 were $0.	5. Costs for 2013 are estimated to be $0.

Initiative 3 – Six-Year transmission Inspection Program	
Current Plan	Updated Plan
1. Develop procedures for climbing inspections of Company-owned 69 and 138 kV structures. Coordination/process for customer-	1. No change

owned 69 KV lines to be developed.	
2. Substations are fully inspected at least once a year.	2. No change
3. Costs for 2010-2012 were $151,800.	3. Costs for 2012 are estimated to be $0.

Initiative 4 – Hardening of Existing Transmission Structures*	
Current Plan	Updated Plan
1. Continue to replace wooden poles on 69 KV lines.	1. No change
2. Plan is ongoing with no completion date.	2. No change
3. Costs for 2010-2012 were $0.	3. Costs for 2013 are estimated to be $0.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. FPUC's plan includes forensic reviews.	1. No change
2. FPUC's plan includes underground versus overhead.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Plan includes evaluation of storm hardening options.	4. No change
5. Currently being implemented.	5. No change

Initiative 6 – Post-Storm Data Collection and Forensic Analysis	
Current Plan	Updated Plan
1. FPUC has procedures developed to track all specific hurricane outages, post-storm data collection, and forensic analysis.	1. No change
2. Data is dependent upon storm events in FPUC's service area.	2. No change

Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems	
Current Plan	Updated Plan
1. Collect outage data of overhead and underground facilities to evaluate reliability indices.	1. No change
2. Implementation is ongoing.	2. No change

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. Coordinate with local and county emergency service agencies within its	1. No change

service area. In addition, to provide personnel at county EOC's, during emergencies.	
2. Costs for 2010-2012 were $0.	2. Costs for 2013 were estimated to be $0.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
1. Collaborative research efforts, led by PURC, which began in 2007.	1. No change
2. Research vegetation management during storm and non-storm times, wind during storm and non-storm events, hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	2. No change
3. FPUC will solicit participation from other utilities and organizations.	3. No change
4. Implementation is ongoing	4. FPUC has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2013.
5. Costs for 2010-2012 were $0	5. Costs for 2013-2015 are unknown at this time.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program	
Current Plan	Updated Plan
Disaster Preparedness/Recovery Plan has been developed and filed.	Continue to refine.

*Hardening cost for existing transmission structures are not included since these are capital expenditures.

Florida Power & Light Company

Eight-Year Wooden Pole Inspection Program (1)	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2010-2012 were $184.5 million.	3. Costs for 2013 are estimated to be $65 to $75 million.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. Average three-year trim cycle for feeders.	1. No change
2. Average six-year trim cycle for laterals. Targeted trimming is also achieved through its "mid-cycle" program that addresses critical circuits.	2. No change
3. Costs for 2010-2012 were $179.9 million.	3. Costs for 2013 are estimated to be $65.7 million.

Initiative 2 – Audit of Joint-Use Attachment Agreements (2)	
Current Plan	Updated Plan
1. (a) Includes auditing 20% of its joint-use facilities annually.	1. (a) No change
(b) Includes auditing all FPL-owned and third-party poles during the eight-year wooden pole inspection cycle.	(b) No change
2. All required data will be collected during inspections and stored in the attachment information database.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements through a five-year system wide pole attachment survey.	3. No change
4. Stress calculations will be performed during eight-year wooden pole inspection cycle.	4. No change
5. Cost for 2010-2012 are not specifically tracked or budgeted.	5. Costs for 2013 are not available.

Initiative 3 – Six-Year transmission Inspection Program (1)	
Current Plan	Updated Plan
1. Wooden pole inspection activities (PSC-06-0144-PAA-EI, Docket No. 060078-EI). Circuits with structures containing wooden cross-arm structures inspected at least every four years.	1. No change
2. Substations are fully inspected quarterly.	2. No change
3. Costs for 2010-2012 were $73.4 million.	3. Costs for 2013 are estimated to be $27.8 million.

Initiative 4 – Hardening of Existing Transmission Structures (3)	
Current Plan	Updated Plan
1. Incremental upgrades during relocations and other maintenance. Upgrade un-guyed single wooden pole structures. Ceramic post line insulator replacements.	1. No change
2. In 2008, FPL enhanced its hardening initiative to include replacement of all wooden transmission structures over the next 25 to 30 years.	2. No change
3. Costs for 2010-2012 were $88 million.	3. Costs for 2013 are estimated to be $52 to $80 million.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. FPL's plan includes forensic reviews.	1. No change
2. FPL's plan includes underground versus overhead.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Plan includes evaluation of storm hardening options.	4. No change
5. Currently being implemented.	5. No change

Initiative 6 – Post-Storm Data Collection and Forensic Analysis (4)	
Current Plan	Updated Plan
1. Divide a sample of damaged poles among forensics teams; observations will be made on all damaged samples. Capture information such as location, attachments, and area wind speed.	1. No change
2. Data is dependent upon storm events in FPL's service area.	2. No change

Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems (4)	
Current Plan	Updated Plan
1. FPL's distribution feeders are hybrids, i.e., they contain both overhead and underground facilities. FPL will utilize laterals as a proxy for assessing overhead versus underground system performance.	1. No change
2. Implementation is ongoing and storm performance results are obtained from forensics and available storm work tickets.	2. No change

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. FPL focuses on storm preparation coordination and communication with External Affairs representatives working with county planners and post-storm communications. In addition, FPL implements ongoing planning with External Affairs representative, special e-mail program, government websites, and Community Outreach Teams.	1. No change
2. Costs for 2010-2012 are not specifically tracked or budgeted.	2. Costs for 2013 are not available.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
1. Collaborative research efforts, led by PURC, which began in 2007.	1. No change
2. Research vegetation management	2. No change

during storm and non-storm times, wind during storm and non-storm events, hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	
3. FPL will solicit participation from other utilities and organizations.	3. No change
4. Implementation is ongoing	4. FPL has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2013.
5. Costs for 2010-2012 were $0	5. Costs for 2013 are $0.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program	
Current Plan	Updated Plan
Disaster Preparedness/Recovery Plan has been developed and filed.	Continue to refine.

(1) Includes inspection and follow-up work (repairs/replacements).
(2) While costs for pole inspections are tracked, the breakdown between joint-use poles and non-joint-use poles is not tracked.
(3) All years include replacement of wood structures and CPOC's costs. Storm surge/flood projects are included in 2013-2015.
(4) Since these costs are incurred only if a major storm impacts FPL's service territory, FPL does not budget for these costs.

Tampa Electric Company

Eight-Year Wooden Pole Inspection Program	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2010-2012 were $91,600,000.	3. Costs for 2013 are estimated to be $41,800,000.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. Average three-year trim cycle for feeders.	1. Average four-year trim cycle for feeders.
2. Average three-year trim cycle for laterals. Targeted trimming is also achieved through its "mid-cycle" program that addresses critical circuits.	2. Average four year trim cycle for laterals.
3. Costs for 2010-2012 were $33,500,00.	3. Costs for 2013 are estimated to be $8,500,000.

Initiative 2 – Audit of Joint-Use Attachment Agreements	
Current Plan	Updated Plan
1. (a) Perform pole strength assessment during eight-year wooden pole inspection cycle.	1. (a) No change
(b) Audit all TECO-owned poles and third-party poles per Joint-Use contract agreements on an eight-year cycle.	(b) No change
2. All required data will be collected during eight-year wooden pole inspection cycle and stored in GIS database.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements during the eight-year wooden pole inspection cycle.	3. No change
4. Stress calculations will be performed during eight-year wooden pole inspection cycle.	4. No change
5. Costs for 2010-2012 were $0.	5. Costs for 2013 are estimated to be $330,000.

Initiative 3 – Six-Year transmission Inspection Program	
Current Plan	Updated Plan
1. Wooden pole inspection activities (PSC-06-0144-PAA-EI, Docket No. 060078-EI). Structures on a six-year cycle, all other portions of the system inspected annually.	1. No change
2. Substations inspected annually.	2. No change
3. Costs for 2010-2012 were $4,00,000.	3. Costs for 2013 are estimated to be $1,100,000.

Initiative 4 – Hardening of Existing Transmission Structures	
Current Plan	Updated Plan
1. Incremental phase out of wooden transmission structures during all new construction, relocations, and other maintenance.	1. No change
2. Plan is ongoing with no completion date.	2. No change
3. Costs for 2010-2012 were $1,500,000.	3. Costs for 2013 are estimated to be $600,000.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. Forensic reviews on statistical sampled basis.	1. No change
2. Forensic review with respect to types of materials and construction, and location.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Access future preventive measures where possible.	4. No change
5. Implementation began in 2010.	5. No change

Initiative 6 – Post-Storm Data Collection and Forensic Analysis	
Current Plan	Updated Plan
1. Hire consultant to perform forensic analyses.	1. No change
2. Implementation is dependent on the severity of the weather event.	2. No change

Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems	
Current Plan	Updated Plan
1. Measures are in place should it experience a major storm.	1. No change
2. implementation will begin when TECO experiences major storm activity.	2. No change

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. TECO's Plan calls for building on past community involvement by including local government, fire, police and water officials in storm preparation workshops, including local government in local Emergency Operations Centers, increased vegetation management including government and consumer education, undergrounding planning and education, and damage reporting prior, during, and after storms.	1. No change
2. Costs for 2010-2012 were $66,000.	2. Costs for 2013 were estimated to be $33,000.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
2. Collaborative research efforts, led by PURC, which began in 2007.	3. No change
4. Research vegetation management during storm and non-storm times, wind during storm and non-storm events, hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	4. No change
5. TECO will solicit participation from other utilities and organizations.	5. No change
6. Implementation is ongoing	5. TECO has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2013.
6. Costs for 2010-2012 were $0.	6. Costs for 2013-2015 are $0.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program	
Current Plan	Updated Plan
Disaster Preparedness/Recovery Plan has been developed and filed.	Continue to refine.

Gulf Power Company

Eight-Year Wooden Pole Inspection Program	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2010-2012 were $6,291,726.	3. Costs for 2013 are estimated to be $2,061,333.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. Implement a three-year trim cycle on all main line feeders.	1. No change
2. Shorten the trim-cycle length on lateral lines to four years and reduce the emphasis on danger tree removal in residential areas.	2. No change
3. Costs for 2010-2012 were $15,109,557.	3. Costs for 2013 are estimated to be $5,593,128.

Initiative 2 – Audit of Joint-Use Attachment Agreements	
Current Plan	Updated Plan
1. (a) Discontinue the pole strength assessment on 5% random sample.	1. (a) No change
(b) Audit all Gulf-owned poles and third-party poles per Joint-Use contract agreements on a five-year cycle.	(b) No change
2. All required data will be collected and stored during the five-year inspection cycle.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements through a five-year cycle.	3. No change
4. Discontinue the 5% random sample due to low failure rates over the three-year pilot project.	4. No change
5. Cost for 2010-2012 were $337,722	5. Costs for 2013 are estimated to be $0.

Initiative 3 – Six-Year transmission Inspection Program	
Current Plan	Updated Plan
1. Wooden pole inspection activities (PSC-06-0144-PAA-EI, Docket No. 060078-EI). All other portions of the system: Gulf does not hold itself to a	1. No change

rigid number of annual inspections. Period of 12 years will show that on average a six-year cycle is achieved.	
2. Substations inspected at least annually. Structures inside new substations built to withstand wind speed in excess of 150 MPH.	2. No change
3. Costs for 2010-2012 were $1,173,055.	3. Costs for 2012 are estimated to be $244,526.

Initiative 4 – Hardening of Existing Transmission Structures	
Current Plan	Updated Plan
1. Install storm guy H-Frames. Replace wooden cross-arms with steel cross-arms and other activities.	1. No change
2. Adhere to current design and construction standards using generally accepted engineering practices, in conjunction with the recommended six-year structure inspection program.	2. No change
3. Costs for 2010-2012 were $7,678,000.	3. Costs for 2013 are estimated to be $1,040,000.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. Gulf's plan includes forensic reviews.	1. No change
2. Gulf's plan includes underground versus overhead.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Plan includes evaluation of storm hardening options.	4. No change
5. Data is currently being captured.	5. No change

Initiative 6 – Post-Storm Data Collection and Forensic Analysis	
Current Plan	Updated Plan
1. Distribution & Transmission: Concurrent with storm restoration, crews of contractors to survey a sample of lines affected by the storm. Inland and coastal areas to be surveyed.	1. No change
2. Costs for 2010-2012 were $0.	2. Costs for 2013 were $0.
Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems	
Current Plan	Updated Plan

1. Record number of overhead and underground customers and calculate SAIDI and SAIFI for each outage. As outages occur, collect data by type of buried cable and type of pole.	1. No change
2. Implementation is ongoing.	2. No change

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. Gulf plan builds on existing programs of years round activities like workshops with community leaders, pre-hurricane planning with participation in all local government hurricane preparedness drills, exercises, information fairs by line clearing specialists, and a standing Emergency Operations Center staffed 24 hours a day.	1. No change
2. Costs for 2010-2012 were $0.	2. Costs for 2013 were estimated to be $0.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
1. Collaborative research efforts, led by PURC, which began in 2007.	1. No change
2. Research vegetation management during storm and non-storm times, wind during storm and non-storm events hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	2. No change
3. Gulf will solicit participation from other utilities and organizations.	3. No change
4. Implementation is ongoing	4. Gulf has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2013.
5. Costs for 2010-2012 were $64,118.	5. Costs for 2013-2015 cannot be determined at this time.

Initiative 10 – A Natural Disaster Preparedness and Recovery Program	
Current Plan	Updated Plan
Disaster Preparedness/Recovery Plan has been developed and filed.	Continue to refine.