

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of 2010 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Tampa Electric Company.

DOCKET NO. 100263-EI  
ORDER NO. PSC-10-0686-PAA-EI  
ISSUED: November 15, 2010

The following Commissioners participated in the disposition of this matter:

ART GRAHAM, Chairman  
LISA POLAK EDGAR  
NATHAN A. SKOP  
RONALD A. BRISÉ

NOTICE OF PROPOSED AGENCY ACTION  
ORDER APPROVING TAMPA ELECTRIC COMPANY'S  
STORM HARDENING PLAN

BY THE COMMISSION:

NOTICE is hereby given by the Florida Public Service Commission that the action discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding, pursuant to Rule 25-22.029, Florida Administrative Code (F.A.C.).

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, we 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, we issued Order No. PSC-06-0144-PAA-EI, requiring the IOUs to begin implementing an eight-year inspection cycle of their respective wooden poles.<sup>1</sup> In that Order, we noted:

The severe hurricane seasons 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

<sup>1</sup> Docket No. 060078-EI, In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.

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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 are acceptable, which poles must be treated or braced, and which poles must be replaced is through periodic inspections.

At the February 27, 2006 internal affairs meeting, we took comments from our staff, interested persons, and Florida's electric utilities regarding the need to address the effects of extreme weather events on electric infrastructure. Ultimately, we decided:

1. All Florida electric utilities, including municipal utilities and rural electric cooperative utilities, would provide an annual Hurricane Preparedness Briefing.
2. A proposed agency action recommendation would be filed by our staff for the April 4, 2006 Agenda Conference requiring each IOU to file plans and estimated implementation costs for ongoing storm preparedness initiatives.
3. A docket would be opened to initiate rulemaking to adopt distribution construction standards that are more stringent than the minimum safety requirements of the National Electrical Safety Code (NESC).
4. A docket would be opened to initiate rulemaking to identify areas and circumstances where distribution facilities should be required to be constructed underground.

On April 25, 2006, we issued Order No. PSC-06-0351-PAA-EI, requiring all IOUs to file plans and estimated implementation costs for 10 ongoing storm preparedness initiatives (Ten Initiatives) on or before June 1, 2006.<sup>2</sup> 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
4. Hardening of Existing Transmission Structures
5. A Transmission and Distribution Geographic Information System
6. Post-Storm Data Collection and Forensic Analysis

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<sup>2</sup> Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

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, we viewed these initiatives as the starting point of an ongoing process.<sup>3</sup> 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), we addressed the adequacy of the IOUs' plans for implementing the Ten Initiatives.

We 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.<sup>4</sup> Rule 25-6.0342, F.A.C., was ultimately adopted.<sup>5</sup>

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 the NESC.
- (b) Extreme wind loading (EWL) standards for: (i) new construction; (ii) major planned work, including expansion, rebuild, or relocation of existing facilities; and (iii) critical infrastructure facilities and along major thoroughfares.
- (c) Mitigation of damage due to flooding and storm surges.

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<sup>3</sup> Order No. PSC-06-0947-PAA-EI, page 2, issued November 13, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

<sup>4</sup> 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.

<sup>5</sup> 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.

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

(e) A deployment strategy including: (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. (PEF), 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, we voted to set the dockets directly for a formal administrative hearing, with the additional mandate to our 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. FPUC requested to file its storm hardening plan as part of its petition for a general rate increase and have it addressed in its rate case.<sup>6</sup> FPUC's storm hardening plan was approved May 19, 2008.<sup>7</sup>

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 parties also presented us with a stipulated agreement entitled "Process to Engage Third-Party Attachers." This process, as designed, would allow for the exchange of information between the parties. Per the stipulation, information would be shared among the parties and annual status reports would be filed with us.<sup>8</sup> In addition, the stipulation stated that we would resolve any disputes or challenges to issues related to a utility's plan in accord 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, TECO filed ITS 2010-2012 storm hardening plan updates as required by Rule 25-6.0342(2), F.A.C.. Docket No. 100263-EI was opened to address the updates. On

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<sup>6</sup> Order No. PSC-08-0019-PCO-EI, issued January 4, 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.

<sup>7</sup> 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.

<sup>8</sup> 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, 070298-EI, 070299-EI, and 070301-EI, and Order No. PSC-08-0327-FOF-EI, issued May 19, 2008, in Docket No. 070300-EI.

June 10, 2010, we conducted a workshop to better understand TECO's plan. In addition to the workshop, we sent data requests to TECO to obtain clarification and additional information. We considered TECO's plan updates at our October 26, 2010 Commission Conference. This Order addresses TECO's plan updates as required by Rule 25-6.0342. Attachment A to this Order describes the storm hardening requirements. Attachment B contains a comparison of the provisions of TECO's previously approved and updated storm hardening plans, and the costs of implementing the approved and updated plans. Attachment C is a glossary of terms used in this Order. We have jurisdiction over this matter pursuant to Sections 360.04 and 366.05, Florida Statutes (F.S.).

### Review of TECO's Plan Updates

#### Wooden Pole Inspection Program

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

#### Ten Initiatives

##### **Initiative One** – Three-Year Vegetation Management Cycle for Distribution Circuits

TECO has no changes to its previously approved trim cycle. Currently, both feeder and lateral circuits are trimmed, on average, every three years.

##### **Initiative Two** – Audit of Joint-Use Attachment Agreements

In 2008, two initiatives associated with TECO's pole inspection program were implemented: comprehensive loading analysis and pole attachment audits. A comprehensive loading analysis was performed on all joint-use poles that were screened as being potentially overloaded during the pole inspection program. A pole attachment audit was completed in the last quarter of 2008. The audit is scheduled to be conducted on a three-year cycle going forward, with the next audit beginning in 2011. In 2009, TECO integrated receiving, review, and authorization of pole attachment applications into its GIS. TECO is not making any changes to this initiative at this time.

##### **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, aerial infrared patrol, and substation inspections. TECO will continue these practices in its updated plan. The six-year cycle will include above ground inspections, while groundline inspections will be performed on an eight-year cycle. TECO will continue its review of sites located in Flood Zone 1 (as defined in Hillsborough County's hazard flood maps). The major focus will be on the elevation and water resistance of control cabinets and related equipment. However, practical modifications will be made if necessary. TECO will also convert from fuses

or ground switch protection to circuit switchers at two locations per year over the next three years based on current expansion plans.

**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 provides for replacement of wooden transmission structures with non-wooden structures based primarily on pole inspection results. Additionally, the company will utilize non-wood structures for all new transmission line construction projects, as well as system rebuilds and line relocations. TECO anticipates 10 transmission line relocation projects within the next three years. These projects are a combination of road construction and new development. It is estimated that at least 75 wood poles will be replaced with non-wood poles during the next three years due to these projects.

**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 a hurricane event during 2007-2009; 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 Utility Coordination with Local Governments**

TECO will continue conducting workshops with local governments and county EOCs 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 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. TECO entered into a Memorandum of Understanding with PURC that extends PURC's research efforts for the IOUs through December 31, 2011.

**Initiative Ten** – Natural Disaster Preparedness and Recovery Program

TECO will 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 conduct mock drills that address hurricane issues.

National Electric Safety Code Compliance

TECO's updated plan addresses the extent to which, at a minimum, TECO complies with the NESC pursuant to Rule 25-6.0345(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.

Extreme Wind Loading Standards

New Construction – TECO has historically designed its distribution facilities based on NESC Grade B construction, and its updated plan indicates that it will continue this practice. TECO states in its updated plan that the safety factors considered in the NESC construction Grade B criteria provides for a system that is 87 percent stronger than the NESC construction Grade C criteria for TECO's service area.

Major Planned Work – TECO will continue building to Grade B construction for all major planned expansions, rebuilds, or relocations of distribution facilities. We note 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 has identified CIF as those circuits feeding loads that are critical to the maintenance of basic services that include public health, distilled fuels, and transport hubs. TECO's current projects are part of a pilot program set up to evaluate the benefits of utilizing the NESC EWL requirements on the distribution system. The Company's pilot program focuses on distribution facilities serving two critical customers: a local hospital designated as a Level 2 Trauma Center and the Port of Tampa gasoline tank storage area. TECO states in its updated plan that since the Company's 2007-2009 plan did not receive final

Commission approval until the end of 2007, implementation of these projects was delayed; therefore, these projects are included in the updated plan. When completed, the circuits feeding the hospital and the Port of Tampa will be rebuilt to meet EWL standards.

TECO is not proposing any further pilot hardening projects until the performance of these existing projects has been evaluated under storm conditions. The pilot projects will be monitored and analyzed to determine cost-effectiveness prior to consideration of wide spread application.

#### Mitigation of Flooding and Storm Surge Damage

TECO will continue its current standard for all new and maintenance replacement of underground distribution facilities located in Flood Zone 1. TECO also will convert from fuses or ground switch protection to circuit switchers at two locations per year over the next three years, based on its current expansion plans. The updated plan also includes additional inspections in the downtown area in order to mitigate damage to underground distribution circuits due to flooding and storm surges.

#### Facility Placement

TECO will continue placement of all new distribution facilities in the public right-of-way. In addition, TECO will 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.

#### Deployment Strategies

Facilities Affected, Including Specifications and Standards – TECO's updated plan contains a detailed three-year deployment strategy, which includes a description of the facilities affected by inspection programs, technical design specifications, 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 has taken steps to reduce the use of overlashed attachments (i.e., attaching to an existing attachment without prior engineering and authorization) by increasing its pole inspections. In a 2007 Stipulation between TECO and its attaching entities, the attaching entities agreed to submit to TECO prior notification of all proposed overlashed attachments.

Utility Cost/Benefit Estimates – TECO's updated plan includes estimates of costs to be incurred in connection with its updated plan for 2010 through 2012. TECO estimates deployment costs will be \$113,429,000. This includes pole replacements, inspections of



distribution and transmission facilities, vegetation management, and other projects. While TECO discussed benefits associated with overhead and underground electric service, the associated costs were not quantified. Please refer to Attachment B for a comparison of the costs associated with implementation of TECO's current and updated storm hardening plans.

Attachers Cost/Benefit Estimates – TECO believes its updated plan will provide benefits at minimal cost to all third party attachers. TECO did not state in its updated plan whether the Company had sought input or received estimate benefit information from attachers. TECO later clarified that the Company continues to communicate with its attachers regularly, but no cost or benefit data has been provided from the attachers at this time.

#### 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.

#### 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, 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, we approve TECO's updated storm hardening plan.

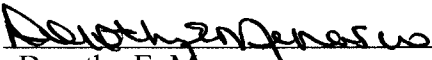
Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Tampa Electric Company's Storm Hardening Plan is hereby approved as set forth in this Order. It is further

ORDERED that if no person whose substantial interests are affected by the proposed agency action files a protest within 21 days of the issuance of the order, this docket should be closed upon the issuance of a consummating order.

By ORDER of the Florida Public Service Commission this 15th day of November, 2010.

ANN COLE  
Commission Clerk

By:   
Dorothy E. Menasco  
Chief Deputy Commission Clerk

( S E A L )

LCB

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing that is available under Section 120.57, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by Rule 28-106.201, Florida Administrative Code. This petition must be received by the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on December 6, 2010.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

Any objection or protest filed in this/these docket(s) before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

**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, 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 and 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, multihazard infrastructure issues such as flood zones, areas 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.

**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 2007-2009 were \$5,887,600, which include groundline inspections for distribution and transmission, distribution pole reinforcements, and inspections related to distribution maintenance.	3. Costs for 2010 are estimated to be \$1.7 million, which include groundline inspections for distribution and transmission, distribution pole reinforcements, and inspections related to distribution maintenance.

**Initiative 1- A Three-Year Vegetation Management Cycle for Distribution Circuits**

Current Plan	Updated Plan
1. Feeder trim based on prioritization (Average three-year trim cycle for all).	1. No change
2. Every circuit including open secondaries, cabled secondaries, and appropriate services is trimmed every 3 years.	2. No change
3. Costs for 2007-2009 were \$34.7 M	3. Vegetation management costs for 2010 are estimated to be \$14.7 M.

**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, with the addition of pole loading analysis and the annual pole attachment audit.
(b) Audit all TECO-owned poles and third-party poles per Joint-Use contract agreements on an eight-year cycle.	(b) No change, with the addition of pole loading analysis and the annual pole attachment audit.
2. All required data to be collected during the eight-year wooden pole inspection cycle and stored in GIS database.	2. No change
3. Verify attachments have been made pursuant to a current joint-use agreement during the eight-year wooden pole inspection cycle.	3. No change
4. Stress calculations to be performed during the eight-year wooden pole	4. No change

inspection cycle.	
5. Costs for 2007-2009 were approximately \$829,900. This includes TECO's Comprehensive Loading Analysis and Pole Attachment audits.	5. Cost for TECO's 2010 Comprehensive Loading Analysis is estimated to be \$100,000. The cost of corrective measures to bring all overloaded poles back into compliance is estimated at \$2.5 M.

**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. The inspection program is a multi-pronged approach with inspection cycles of one, six, or eight years depending on the goals or requirements of the individual inspection activity.
2. Substations inspected annually.	2. No change
3. Costs for 2007-2009 were \$1,548,500.	4. Estimated cost for 2010 is \$635,800.

**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 2007-2009 were \$29.8 M.	3. Cost for 2010 are estimated to be \$9.2M

**Initiative 5- Transmission and Distribution Geographic Information System**

Current plan	Updated Plan
TECO is in the process of implementing a new GIS system. The field assets to be incorporated in the GIS will include all distribution, transmission, substation and lighting facilities for TECO's entire system. GIS, in conjunction with current OMS, will provide information on location and system performance.	
1. Forensic reviews on statistical sampled basis.	1. No change
2. Forensic reviews with respect to types of materials and construction, and location.	2. No change
3. Determination of appropriate maintenance.	3. No change
4. Assess future preventive measures where possible.	4. No change
5. Formally implement its GIS in 2009.	5. TECO formally accepted its GIS in 2009 and implementation begins in 2010.

<b>Initiative 6- Post-Storm Data Collection and Forensic Analysis</b>	
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

<b>Initiative 7- Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems</b>	
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

<b>Initiative 8- Increased Coordination with Local Governments</b>	
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 2007-2009 are unknown.	3. Costs for 2010-2012 are unknown.



<b>Initiative 9-Collaborative Research</b>	
Current plan	Updated Plan
1. Collaborative research efforts, led by the PURC, began in 2007.	1. No change
2. Researching vegetation management during storm and non-storm times, wind during storm and non-storm events, and hurricane and damage modeling towards further understanding the cost and benefits of undergrounding.	2. No change
3. TECO solicited participation from municipal and rural electric cooperative utilities in addition to available educational and research organizations.	3. No change
4. Implementation is ongoing.	4. TECO has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2011.
5. Cost requirements for 2007-2009 were not provided.	5. Estimated cost for 2010 were not provided.

<b>Initiative 10- A Natural Disaster Preparedness and Recovery Program</b>	
Current Plan	Updated plan
Disaster Preparedness/Recovery plan has been developed and filed.	Continues to refine

### Glossary

1. Annual Electric Utility Distribution Reliability Report – A report, required by Rule 25-6.0455, Florida Administrative Code (F.A.C.), 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. This 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 Systems (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 7500 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 7,500V in rural districts where 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 known 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 National Electric Safety Code, 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.