

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of 2016-2018 storm  
hardening plan, pursuant to Rule 25-6.0342,  
F.A.C., by Gulf Power Company.

DOCKET NO. 160108-EI  
ORDER NO. PSC-16-0572-PAA-EI  
ISSUED: December 19, 2016

The following Commissioners participated in the disposition of this matter:

JULIE I. BROWN, Chairman  
LISA POLAK EDGAR  
ART GRAHAM  
RONALD A. BRISÉ  
JIMMY PATRONIS

NOTICE OF PROPOSED AGENCY ACTION  
ORDER APPROVING GULF POWER COMPANY'S  
UPDATED STORM HARDENING PLAN FOR 2016-2018

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 and 28-106.201, 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, 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, this Commission issued Order No. PSC-06-0144-PAA-EI, in Docket No. 060078-EI, requiring that the IOUs 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.

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)

On April 25, 2006, this 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.<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
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, this Commission viewed these initiatives as a 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), this Commission addressed the adequacy of the IOU's plans for implementing the Ten Initiatives.

This Commission also pursued rulemaking to address the adoption of distribution construction standards more stringent than the minimum safety requirements of the National Electric Safety Code (NESC) and the identification of areas and circumstances where

---

<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.

<sup>3</sup>Order No. PSC-06-09351-PAA-EI, p.2, issued April 25, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation costs estimates.

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 this Commission which includes a description of construction standards, policies, practices, and procedures to enhance the reliability of overhead and underground electrical transmission and distribution facilities. The Rule calls for, at a minimum, each IOU's plan to 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
  - 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
  - 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 3, 2013, the five IOUs filed 2013-2015 storm hardening plan updates. This Commission approved the storm hardening plans for Duke Energy Florida, LLC (DEF), Florida

---

<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.

Public Utilities Company (FPUC), Florida Power and Light Company (FPL), Tampa Electric Company (TECO), and Gulf Power Company (Gulf), at the November 14, 2013 Commission Conference.<sup>6</sup> On May 2 and 3, 2016, four IOUs filed 2016-2018 storm hardening plan updates as required. Docket Nos. 160105-EI (TECO), 160106-EI (FPUC), 160107-EI (DEF) and 160108-EI (Gulf) were opened. FPL filed its 2016-2018 storm hardening plan updates on March 15, 2016, and Docket No. 160061-EI was opened. That docket was consolidated with Docket No. 160021-EI, Petition for rate increase by Florida Power & Light Company. Commission staff did not conduct a workshop for these updated storm hardening plans as data request responses were sufficient in understanding the updated plans.

This order addresses Gulf's plan updates as required by Rule 25-6.0342, F.A.C. Specifically, this order addresses:

- 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
- VIII. Attachment Standards and Procedures for Third Party Attachments

Attachment A describes the storm hardening requirements of the wooden pole inspection program and the Ten Initiatives for each IOU. Attachment B contains a comparison of Gulf's provisions of the 2013-2015 approved and updated 2016-2018 wooden pole inspection programs and Ten Initiatives, and the cost of implementing the approved and updated programs and initiatives.

This Commission has jurisdiction over this matter pursuant to Sections 366.04 and 366.05, Florida Statutes (F.S.).

---

<sup>6</sup>Order No. PSC-13-0637-PAA-EI, issued December 3, 2013, in Docket No: 130129-EI, In re: Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Duke Energy Florida, Inc.; Order No. PSC-13-0638-PAA-EI, issued December 3, 2013, in Docket No: 130131-EI, In re: Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Florida Public Utilities Company; Order No. PSC-13-0639-PAA-EI, issued December 3, 2013, in Docket No: 130132-EI, In re: Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Florida Power and Light Company; Order No. PSC-13-0640-PAA-EI, issued December 3, 2013, in Docket No: 130138-EI, In re: Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Tampa Electric Company; Order No. PSC-13-0641-PAA-EI, issued December 3, 2013, in Docket No: 130139-EI, In re: Petition for approval of 2013-2015 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Gulf Power Company.

### Decision

On Attachment B, we provided a summary of Gulf's current wooden pole inspection program and Ten Initiatives and the approved changes. In addition, where available, we have shown the costs associated with the wooden pole inspection program and Ten Initiatives for 2013-2015 and 2016-2018. Components of Gulf's updated plan are summarized below.

#### **Wooden Pole Inspection Program**

Gulf is continuing its eight-year wooden pole inspection.<sup>7</sup> Gulf utilizes an inspection matrix that ensures that all poles receive a visual inspection with sounding, boring, and excavation as appropriate. The program identifies poles that require repair, reinforcement or replacement. Currently, Gulf is in its third year of its second eight-year cycle. Gulf will continue to file the results of these inspections in its Annual Electric Utility Distribution Reliability Report. The estimated cost for 2016-2018 related to the eight-year wooden pole inspection program is \$7,047,000 as compared to \$6,236,000 spent in 2013-2015. Gulf's costs for 2016-2018 reflect anticipated increases in contract labor and equipment rates.

#### **Ten Initiatives**

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

Gulf proposed no changes to its previously approved trim cycle.<sup>8</sup> Currently, the feeders are trimmed on a three-year cycle and laterals circuits are trimmed on a four-year cycle. Gulf's vegetation management plan includes annual inspection and corrective action plan on the remaining two-thirds of the main feeders, not part of the trim cycle that year. Lateral distribution lines are managed on a reliability-based program to achieve a four-year average cycle. The estimated cost for 2016-2018 for Initiative One is \$17,847,000 as compared to \$16,794,000 spent in 2013-2015. As discussed above, Gulf anticipates increases in contract labor and equipment rates.

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

There is no change to this initiative. Gulf performs field audits of joint-use poles every five years, which is outlined in contractual agreements with third party attachers. Both utility owned poles with third party attachers and non-utility poles where Gulf is the third party attacher, are included in the audit. Information collected during the last audit, which was conducted in 2011 was the following:

- GPS pole location

---

<sup>7</sup>Order No. PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 060531-EU, In re: Review of all electric utility wooden pole inspection programs.

<sup>8</sup>Order No. PSC-10-0688-PAA-EI, issued November 15, 2010, in Docket No. 100265-EI, In re: Review of 2010 Electric Infrastructure Storm hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Gulf Power Company.

- Pole owner
- Pole type
- Pole treatment
- Pole height and class
- Manufacture date
- Attachment information
- Pole identification numbers

Gulf reported that any dangerous situations identified during the audits are immediately reported to the pole owner. Dangerous conditions may include buckling, splitting or broken poles, or low hanging conductors or cables. Gulf anticipates similar data will be collected and/or verified in the next field audit scheduled for 2016. The estimated cost for 2016-2018 is \$300,000 while no cost were incurred for 2013-2015. The \$300,000 is the cost of the audit.

*Initiative Three- Six-Year Transmission Structure Inspection Program*

There are no proposed changes to this initiative. Gulf's transmission line inspections include a ground line treatment inspection, a comprehensive walking inspection, and aerial inspections. The transmission inspections are based on two alternating 12-year cycles, which results in structures being inspected at least once every six years. Gulf inspects all of its substations at least once annually. The inspections include visual inspections of all structures. The estimated cost for this initiative for 2016-2018 is \$726,000 as compared to \$663,000 spent in 2013-2015. Gulf is budgeting for increased cost in labor and equipment rates.

*Initiative Four – Hardening of Existing Transmission Structures*

There is no change in the plan for this initiative. Gulf will continue the design and construction of its new facilities based on the NESC and EWL. The standard for all new transmission lines used by Gulf is Grade B construction. Gulf's main objective is to design a structure that has a capacity greater than the maximum expected load. Gulf plans to continue the replacement of wooden H-frame cross-arms with steel cross-arms on transmission facilities. Cross-arms are mounted horizontally and distribute the load between the two poles. If the wooden cross-arms have small pockets of rot, the strength of the structure could be reduced. Gulf has 355 cross-arm replacements remaining and plans to complete this initiative by 2017. The cost for 2016-2018 is estimated to be \$29,933,000 as compared to \$26,139,000 spent in 2013-2015.

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

There is no change to this initiative. Gulf reported that its GIS uses database information that is continuously maintained and updated with transmission, distribution and land information across its service area. Gulf completed its distribution facilities mapping transition to its Distribution GIS in 2009. The transmission system has been completely captured in the

Transmission GIS database. The Distribution GIS and Transmission GIS are continually updated with any additions and changes as the associated work orders for maintenance, system improvements, and new business are completed. This ongoing process provides Gulf sufficient information to use with collected forensic data to assess performance of its overhead and underground systems in the event of a major storm. There are no incremental costs associated with this initiative.

*Initiative Six – Post-Storm Data Collection and Forensic Analysis*

Gulf did not propose a change to this initiative. Contractors will aid Gulf in the collection of field data after a major storm. In addition, data will be collected on pre-determined projects constructed to EWL criteria and in other designated overhead and underground areas. The information collected by Gulf's contractor will be utilized to perform a forensic analysis. Gulf reported that this "fact finding" assessment of existing facilities would help in the evaluation of its construction standards going forward.

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

There is no change for this initiative. Gulf will continue its record keeping and analysis of data associated with overhead and underground outages. Gulf collects data on outages as they occur, for the following situations:

- If underground cables are:
  - Direct buried
  - Direct buried with injection treatment
  - In a conduit
- Whether the pole type is:
  - Concrete
  - Wood
  - Steel

*Initiative Eight – Increased Coordination with Local Governments*

No change to this initiative was proposed. Gulf meets with governmental entities for all major projects, as appropriate, to discuss the scope of the project and coordinate activities involved with project implementation. Gulf maintains year-round contact with city and county officials to ensure cooperation in planning, good communication, and coordination of activities. Gulf assigns employees to county Emergency Operation Centers (EOCs) throughout Northwest Florida to assist during emergencies. Gulf also conducts a storm drill each year. There is no estimated cost for this initiative.

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

There is no change to this initiative. Gulf will continue to participate in the collaborative research effort with other Florida IOUs, municipals, and cooperatives. The collaborative research is facilitated by the Public Utility Research Center (PURC) at the University of Florida and focuses on 1) undergrounding of electric utility infrastructure, 2) hurricane wind effects, and 3) public outreach. Gulf has signed an extension of the memorandum of understanding with PURC, which extends the research through December 31, 2018. Gulf estimated the cost for 2016-2018 for this initiative would be \$96,000 as compared to \$92,177 spent in 2013-2015.

*Initiative Ten – Natural Disaster Preparedness and Recovery Program*

Gulf will continue to refine this initiative. Gulf uses the strategy described in its Storm Restoration Procedures Manual to respond to any natural disaster that may occur. Annually, Gulf develops and refines its planning and preparations for the possibility of a natural disaster. Gulf's restoration procedures establish a plan of action to be utilized for the operation and restoration of generation, transmission, and distribution facilities during disasters. Gulf continues to provide annual refresher training in the area of storm preparedness for various storm roles at minimal cost. Mock hurricane drills are held annually.

**National Electric Safety Code (NESC) Compliance**

Gulf's distribution system complies with all applicable sections of the NESC and exceeds the NESC with the transition to Grade B construction on all new construction, major projects and maintenance work. In addition, Gulf's transmission system complies with all applicable sections of the NESC in effect at the time of initial construction. For Gulf's substations, the Utility uses ASCE 7 EWL criteria for structure design and selection.

**Extreme Wind Loading (EWL) Standards**

Gulf's plan exceeds the NESC standards by using Grade B construction on all new distribution construction, major projects and maintenance work. Gulf's EWL pilot projects included:

- Interstate Crossings – Installed extra down guys to existing wooden poles to bring them to EWL standards.
- Feeders service Critical Loads – Depending on the feeder locations, Gulf piloted E-truss installations to existing poles, replaced wood poles with concrete poles and added extra down guys. These installations brought the CIF up to EWL standards.
- Multi-feeder Pole Lines – In coastal areas serving critical loads, existing wooden poles were replaced with Grade B concrete poles.

Gulf reported that it lacks the data, at the time of this filing, to support the benefits associated with the upgrades due to a lack of major storms.



### *New Construction/Major Planned Work*

Gulf proposed to continue focusing on upgrading all new construction and major planned work to Grade B construction standards. Gulf reported that if a district service area encompasses two different wind zones as defined by the NESC, then that district would have multiple construction standards. Each specific pole would be constructed to the wind zone rating for that location.

### *Critical Infrastructure*

Critical infrastructure (CIF) are circuits feeding loads to critical community facilities such as hospitals, emergency shelters, master pumping stations, wastewater plants, major communications facilities, electric and gas utilities, EOCs, and police and fire stations. Gulf proposed to continue to use Grade B construction of all maintenance work, including any work performed on CIF.

### **Mitigation of Flooding and Storm Surge Damage**

Gulf has developed distribution overhead and underground storm hardening specifications to minimize damage in areas subject to flooding and storm surges. The specifications will continue to evolve as Gulf seeks out the best practices and learns from the review of its forensic data. Gulf reported that new underground installations and conversion of overhead facilities to underground facilities is customer driven. Gulf utilizes overload and strength factors greater than or equal to those required in Section 25 and 26 of the NESC for its transmission facilities. Gulf's loading criteria for new line design is derived from Section 25 of the NESC and at this time, Gulf is not designing transmission for any type of storm surge or flooding damage. Gulf's future underground transmission projects, located within a possible storm surge area, will be engineered to consider the impact of flooding or storm surge.

### **Facility Placement**

Gulf proposed to continue placement of all new distribution facilities in the public right-of-way. Gulf reported that it would continue to promote replacement 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 to underground facilities.

### **Deployment Strategies**

Gulf's updated plan contains a detailed three-year deployment strategy, which is a continuation of inspection programs, technical design specification, construction standards and methodologies.

*Facilities Affected, Including Specifications and Standards*

Gulf will continue to develop overhead and underground storm hardening specifications for its distribution system. Gulf reported that these specifications would continue to evolve as the Utility seeks out best practices and learns from the review of gathered forensic data. As discussed, Gulf will continue transitioning to Grade B construction on all new construction, major projects and maintenance work. Gulf proposed to target CIF by focusing on sections of feeder pole lines that due to their geographic locations, have a higher exposure to possible storm damage and convert them to Grade B construction. Gulf will continue to utilize overload and strength factors greater than or equal to those required in the NESC for its transmission system. These design criteria are used on all new installation and completed rebuild projects throughout Gulf's service area. Gulf performed a risk assessment on all its substations. The risk assessment was completed based on information provided by a National Oceanic and Atmospheric Administration's (NOAA) Sea, Lake and Overland Surges from Hurricanes (SLOSH) model. The results from the risk assessment indicated that hardening measures are not required for Gulf's substations. Gulf's Emergency Response Plan has been established for all substations.

*Areas of Infrastructure Improvements*

Gulf's updated plan provides a detailed description of the electric infrastructure improvements that will be made. All three regions (Central, Eastern, and Western) of Gulf's service territory will be impacted. Below is a brief description of its important projects.

- Feeder Patrols: Gulf reported annually, by June 1, all of its critical lines would be inspected up to the first protective device for loose down guys, slack primary and leaning poles. Gulf will correct all problems found during the inspection.
- Infrared Patrols: Also, annually, by June 1, Gulf will perform infrared inspections of critical equipment on main line three phase feeders. The devices with problems, such as feeder switches, capacitors, regulators and automatic over-current protective devices will be repaired.
- Wind Monitors: Gulf believes a key part of forensic data gathering is obtaining "granular" storm wind speeds at strategic locations. The data will be systematically obtained through meteorological data resources such as existing wind stations and commercial weather reporting sources.
- Distribution Automation: Gulf proposed to continue the installation of additional distribution automation devices to further segment the feeders for outage restoration. The devices will protect its customers by limiting the affected of temporary faults and sustained outages. The devices will be either controlled by Gulf's Distribution Supervisory Control and Data Acquisition (DSCADA) system and/or function as part of automated restoration schemes.
- Strategic Installation of Automated overhead Faulted Circuit Indicators: Gulf explained that Faulted Circuit Indicators (FCI) are devices designed to indicate the passage of fault current. The FCI will reduce customer outage time by expediting the

location of outage causes, thereby aiding in the isolation of the problem. This will help to restore service to some customers while Gulf is correcting the problem.

#### *Joint-Use Facilities*

Gulf evaluated third party attachments through the following means:

- **Pole Strength and Loading Engineering:** Calculations are performed before attachment to any pole, tower or structure and before any existing cables are upgraded or over lashed. This is to determine if the increase in pole loading would necessitate pole modifications.
- **Pre-notification Process:** Gulf ensures that attachers comply with its pre-notification process, which is designed to inform Gulf of plans to attach, upgrade, or over lash cables to any of its poles, towers, or structures. The process includes a field pre-inspection with pole measurements, strength and loading calculations, work order preparation, if necessary, and a post inspection of all the work. The requesting attacher is responsible for post inspections costs and any corrective actions if needed.
- **Specification Plates:** Gulf reported that specification plates reflect storm hardening initiatives such as additional guying standards and the use of pole foam in potential flood prone or storm surge areas.
- **Agreement with Florida Cable Telecommunication Association (FCTA):** Gulf has provisions in its agreement with FTCA to place identification tags on their facilities for ease of contacting the third party attachers. The tags will help with contacting the proper attacher when supporting poles or facilities are damaged and the attacher is needed to help remove, clear the right-of-way, or transfer their cables to a new pole in emergencies.
- **Not to Box or Bracket Poles, Towers, or Structures:** Gulf ensures that every effort is made by all pole attachers not to box or bracket a pole, tower, or structure on both sides. Gulf explained that this practice ensures that the attachment will not encumber the climbing space or impede the ability to straighten a leaning pole in timely manner.

Gulf's third party attacher contracts have details on notification protocol for new attachment permits and over lashing projects and any associated construction coordination. Gulf uses the national Joint Use Notification System for joint-use notifications and coordination of construction activities with affected parties.

#### *Utility Cost/Benefit Estimates*

Gulf's updated plan includes estimates of costs to be incurred in connection with its updated plan for 2016 through 2018. These cost include, continuation of its transition and implementation of Grade B construction, CIF improvements, feeder patrols, and other projects. For 2013 through 2015, Gulf spent a total of \$49,602,000 on its storm hardening plan. Gulf estimated it will spend approximately \$51,643,000 for 2016 through 2018. Gulf proposed an increase in its transmission wooden crossarm replacement project, which is scheduled to be

completed in 2017. Gulf also estimated costs for anticipated increases in contract labor and equipment rates. Gulf has not quantified the benefits of storm hardening due to a lack of forensic data. As more projects are completed, the incremental benefits will likely be reduced. Therefore, Gulf shall consider the rate impact before taking proactive steps to improve its system to withstand severe weather events. Attachment B shows a comparison of cost associated with implementation of Gulf's current and updated wooden pole inspections and Ten Initiatives.

#### *Attachers Cost/Benefit Estimates*

Gulf continues to seek input from third party attachers in the development of its Storm Hardening Plan. Gulf provided 20 attachers a draft copy of its plan. No cost and benefit data was received from third party attachers prior to the published date of Gulf's plan. Gulf reported that it would continue to coordinate face-to-face semi-annual meetings with interested third party attachers to discuss major company and customer construction projects, construction standards, inspect programs, and operational issues.

#### **Attachment Standards and Procedures**

Gulf's updated plan includes EWL standards as specified by Figure 250-2(d) of the NESC. Also included in its plan are engineering standards for overhead and underground storm hardening that meet or exceed the NESC pursuant to Rule 25-6.034, F.A.C., and procedures for attachments by others to the Utility's systems.

#### **Conclusion**

Gulf's updated plan is largely a continuation of its current Commission-approved plan. Based on the review above, Gulf's plan has the information required by this Commission's Rule and Orders and it shall, therefore, be approved. This Commission notes that approval of Gulf's plan does not mean approval for cost recovery. Gulf shall consider the rate impact before taking proactive steps to improve its system to withstand severe weather events.

Based on the foregoing, it is

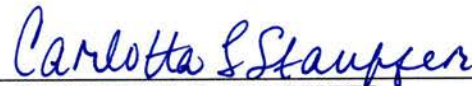
ORDERED by the Florida Public Service Commission that Gulf Power Company's updated 2016-2018 Storm Hardening Plan is hereby approved. It is further

ORDERED that the findings set forth in the body of this Order are hereby approved. It is further

ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by Rule 28-106.201, Florida Administrative Code, is received by the Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings" attached hereto. 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 this Order, this docket shall be closed upon the issuance of the consummating order.

By ORDER of the Florida Public Service Commission this 19th day of December, 2016.



CARLOTTA S. STAUFFER  
Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399  
(850) 413-6770  
www.floridapsc.com

Copies furnished: A copy of this document is provided to the parties of record at the time of issuance and, if applicable, interested persons.

MAL

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 January 9, 2017.

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.

<b>Storm Hardening Requirements: Wooden Pole Inspection Program &amp; Ten Initiatives</b>
---

<b>Eight-Year Wooden Pole Inspection Program</b>
--

- |  |
|--|
| 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.   |

<b>Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits</b>
--

- |  |
|--|
| 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.  |

<b>Initiative 2 – Audit of Joint-Use Attachment Agreements</b>
--

- |   |
|---|
| 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.   |

<b>Initiative 3 – Six-Year Transmission Inspection Program</b>
--

- |   |
|---|
| 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.  |

<b>Initiative 4 – Hardening of Existing Transmission Structures</b>
---

- |  |
|--|
| 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.   |

<b>Initiative 5 – Transmission and Distribution Geographic Information System</b>
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.
<b>Initiative 6 – Post-Storm Data Collection and Forensic Analysis</b>
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.
<b>Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems</b>
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.
<b>Initiative 8 – Increased Coordination with Local Governments</b>
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.
<b>Initiative 9 – Collaborative Research</b>
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.
<b>Initiative 10 – A Natural Disaster Preparedness and Recovery Program</b>
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.



<b>Gulf Power Company</b>
---------------------------

<b>Eight-Year Wooden Pole Inspection Program</b>	
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 2013-2015 were \$6,236,000.	3. Costs for 2016-2018 are estimated to be \$7,044,000.

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 2013-2015 were \$6,236,000.	3. Costs for 2016-2018 are estimated to be \$7,044,000.

<b>Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits</b>	
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 2013-2015 were \$16,794,000.	3. Costs for 2016-2018 are estimated to be \$17,846,000.

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 2013-2015 were \$16,794,000.	3. Costs for 2016-2018 are estimated to be \$17,846,000.

<b>Initiative 2 – Audit of Joint-Use Attachment Agreements</b>	
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 2013-2015 were \$0	5. Costs for 2016-2018 are estimated to be \$300,000.

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 2013-2015 were \$0	5. Costs for 2016-2018 are estimated to be \$300,000.

<b>Initiative 3 – Six-Year transmission Inspection Program</b>	
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 rigid number of annual inspections. Period of 12 years will show that on average a six-year cycle is achieved.	1. No change
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 2013-2015 were \$663,000.	3. Costs for 2016-2018 are estimated to be \$726,000.

<b>Initiative 4 – Hardening of Existing Transmission Structures</b>	
Current Plan	Updated Plan
1. Install storm guy H-Frames. Replace wooden cross-arms with steel cross-arms and other activities.	1. No change (installation of storm guy on H-frame structures was completed in 2012).
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 2013-2015 were \$26,139,000.	3. Costs for 2016-2018 are estimated to be \$29,933,000.

<b>Initiative 5 – Transmission and Distribution Geographic Information System</b>	
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

<b>Initiative 6 – Post-Storm Data Collection and Forensic Analysis</b>	
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 2013-2015 were \$0.	2. Costs for 2016-2018 are estimated to be \$0.
<b>Initiative 7 – Collection of Detailed Outage Data Differentiating between the Reliability Performance of Overhead and Underground Systems</b>	
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
<b>Initiative 8 – Increased Coordination with Local Governments</b>	
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 2013-2015 were \$0.	2. Costs for 2016-2018 were estimated to be \$0.

<b>Initiative 9 – Collaborative Research</b>	
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, 2018.
5. Costs for 2013-2015 were \$92,177.	5. Costs for 2016-2018 are estimated to be \$96,000.

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