

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of 2019-2021 storm hardening  
plan, Gulf Power Company.

DOCKET NO. 20180147-EI  
ORDER NO. PSC-2019-0311-PAA-EI  
ISSUED: July 29, 2019

The following Commissioners participated in the disposition of this matter:

ART GRAHAM, Chairman  
JULIE I. BROWN  
DONALD J. POLMANN  
GARY F. CLARK  
ANDREW GILES FAY

NOTICE OF PROPOSED AGENCY ACTION  
ORDER APPROVING GULF POWER COMPANY'S  
UPDATED STORM HARDENING PLAN FOR 2019-2021

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, 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 damage 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, in Docket No. 20060078-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:

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<sup>1</sup>Docket No. 20060078-EI, In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.

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 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, we issued Order No. PSC-06-0351-PAA-EI, in Docket No. 20060198-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
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 a starting point of an ongoing process.<sup>3</sup> By Order Nos. PSC-06-0781-PAA-EI addressing Tampa Electric Company (TECO) and Florida Public Utilities Company (FPUC), PSC-06-0947-PAA-EI addressing Progress Energy Florida, Inc. [now Duke Energy Florida, LLC (DEF)] and Gulf Power Company (Gulf or Utility), and PSC-07-0468-FOF-EI addressing Florida Power & Light Company (FPL), we addressed the adequacy of the IOU's plans for implementing the Ten Initiatives.

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<sup>2</sup>Docket No. 20060198-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-06-0351-PAA-EI, p. 2, issued April 25, 2006, in Docket No. 20060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation costs estimates.

We also pursued rulemaking to address the adoption of distribution construction standards more stringent than the minimum safety requirements of the National Electrical Safety Code (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, Florida Administrative Code (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

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<sup>4</sup>Order No. PSC-06-0556-NOR-EU, issued June 28, 2006, in Docket No. 20060172-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. 20060173-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-07-0043-FOF-EU, issued January 16, 2007, as amended by Order No. PSC-07-0043AFOF-EU, issued January 17, 2007, in Docket No. 20060172-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. 20060173-EU, In re: Proposed amendments to rules regarding overhead electric facilities to allow more stringent construction standards than required by National Electric Safety Code.

- 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

FPL filed its 2016-2018 storm hardening plan updates on March 15, 2016, which was consolidated with its petition for rate increase. FPL's plan was approved at the November 29, 2016 Commission Conference through a settlement.<sup>6</sup> On May 2-3, 2016, the other four IOU's filed their 2016-2018 storm hardening plan updates. We approved the storm hardening plans for DEF, FPUC, TECO, and Gulf, at the December 6, 2016 Commission Conference.<sup>7</sup>

After four hurricanes impacted Florida in 2016-2017, we opened Docket No. 20170215-EU to review electric utility storm preparedness and restoration actions (Hurricane Review Docket), and to identify areas where infrastructure damage, outages, and recovery time for customers could be minimized in the future. On May 2-3, 2018, we held a workshop during which information was presented by utilities, customers and their representatives, and local governments. Topics discussed at the workshop included preparation and restoration processes, hardened versus non-hardened facility performance, underground versus overhead performance, impediments to restoration, customer and stakeholder communication, and suggested improvements based on lessons learned.

On July 24, 2018, we issued our "Review of Florida's Electric Utility Hurricane Preparedness and Restoration Action's 2018."<sup>8</sup> At the July 10, 2018 Internal Affairs meeting, we directed Commission staff to open the storm hardening plan review dockets earlier than previously scheduled and to begin collecting additional details related to:

- Meetings with local governments regarding vegetation management and the identification of critical facilities.
- Utility staffing practices at local emergency operations centers (EOC).
- Planned responses to roadway congestion, motor fuel availability, and lodging accommodation issues.
- Alternatives considered before electing a particular storm hardening project.

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<sup>6</sup>Order No. PSC-16-0560-AS-EI, issued December 15, 2016, in Docket No. 20160021-EI, In re: Petition for rate increase by Florida Power & Light Company.

<sup>7</sup>Order No. PSC-16-0569-PAA-EI, issued December 19, 2016, in Docket No. 20160105-EI, In re: Petition for approval of 2016-2018 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Tampa Electric Company; Order No. PSC-16-0570-PAA-EI, issued December 19, 2016, in Docket No. 20160106-EI, In re: Petition for approval of 2016-2018 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Florida Public Utilities Company; Order No. PSC-16-0571-PAA-EI, issued December 19, 2016, in Docket No. 20160107-EI, In re: Petition for approval of 2016-2018 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Duke Energy Florida, LLC.; Order No. PSC-16-0572-PAA-EI, issued December 19, 2016, in Docket No. 20160108-EI, In re: Petition for approval of 2016-2018 storm hardening plan, pursuant to Rule 25-6.0342, F.A.C., by Gulf Power Company.

<sup>8</sup> Document No. 04847-2018, issued July 24, 2018, in Docket No. 20170215-EU, In re: Review of electric utility hurricane preparedness and restoration actions.

- The collection of more uniform performance data for hardened versus non-hardened and underground facilities, including sampling data where appropriate.

On March 1, 2019, the five IOUs filed their 2019-2021 storm hardening plan updates as requested. Docket Nos. 20180144-EI (FPL), 20180145-EI (TECO), 20180146-EI (DEF), 20180147-EI (Gulf) and 20180148-EI (FPUC) were opened. 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. Our 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 2016-2018 approved and updated 2019-2021 Wooden Pole Inspection Programs and Ten Initiatives, and the cost of implementing the approved and updated programs and initiatives.

We have jurisdiction over this matter pursuant to Sections 366.04 and 366.05, Florida Statutes (F.S.).

#### Decision

On Attachment B, we provide a summary of Gulf's current Wooden Pole Inspection Program and Ten Initiatives and the proposed changes. In addition, where available, we have provided the costs associated with the Wooden Pole Inspection Program and Ten Initiatives for 2016-2018 and 2019-2021. Components of Gulf's updated plan are summarized below.

### Wooden Pole Inspection Program

Gulf proposes to continue its eight-year Wooden Pole Inspection Program.<sup>9</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 has completed its fifth 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 2019-2021 related to the eight-year Wooden Pole Inspection Program is \$8,379,000 as compared to \$6,841,000 spent in 2016-2018.

### Ten Initiatives

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

Gulf proposes no changes to its previously approved trim cycle.<sup>10</sup> Currently, the feeders are trimmed on a three-year cycle and lateral circuits are trimmed on a four-year cycle. Gulf's vegetation management plan includes an annual inspection and corrective action plan on the remaining two-thirds of the main feeders that are 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. Gulf began a pilot program in 2016 to procure easements from private property owners for select feeders. This allows Gulf to address vegetation management concerns for feeders that serve key customers, experience reliability issues, and have heavy exposure to off right-of-way vegetation. The estimated cost for 2019-2021 for Initiative One is expected to be between \$15,000,000 to \$18,000,000 as compared to \$19,631,000 spent in 2016-2018.

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

There are no proposed changes to the plan for this initiative. Gulf performs field audits of joint-use poles every five years as 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. Gulf's last audit of attachments on its distribution system was conducted in 2016. 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 2021. The estimated cost for 2019-2021 is \$500,000 compared to \$496,000 for 2016-2018.

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<sup>9</sup>Order No. PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 20060531-EU, *In re: Review of all electric utility Wooden Pole Inspection Programs*.

<sup>10</sup>Order No. PSC-10-0688-PAA-EI, issued November 15, 2010, in Docket No. 20100265-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*.

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

There are no proposed changes to the plan for 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 6 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 2019-2021 is \$900,000 as compared to \$769,000 spent in 2016-2018.

*Initiative Four – Hardening of Existing Transmission Structures*

There are no proposed changes to 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's previous plan was to continue the replacement of wooden H-frame cross-arms with steel cross-arms on transmission facilities. However, based on data and the performance of wooden structures on the transmission system during Hurricane Michael, Gulf plans to begin replacing all wooden structures with concrete or steel in a systematic approach moving forward. Currently, Gulf has 4,817 wooden structures on its transmission system, with 75-250 structures planned to be replaced with concrete or steel in 2019, and 100-400 wood structures replaced in years 2020 and 2021. The cost for 2019-2021 is estimated between \$22,000,000 to \$55,000,000 as compared to \$6,862,000 spent in 2016-2018.

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

There are no proposed changes to the plan for 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. During the period 2019-2021, Gulf will be transitioning its GIS data to systems utilized by NextEra Energy as part of the Utility's acquisition; however, the GIS data will be maintained and updated as needed. There are no incremental costs associated with this initiative.

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

There are no proposed changes to the plan for 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 contractors 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 are no proposed changes to the plan 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

In response to information requested in the Hurricane Review Docket, Gulf outlined the type of comparable data that the Utility plans to provide for overhead and underground facilities. Gulf will continue to collect forensic data on damaged facilities following a major event. The goal of the data collection would be to capture damage based on map tiles that were affected by the storm path. Gulf explained the pre-determined map tiles have been identified that would possibly allow for the collection of valid forensic data on hardened overhead, non-hardened overhead, and underground facilities that experienced similar weather conditions. The data for overhead facilities would include location, circuit information, damage description, break location, and cause of damage. The data collected for underground facilities would include location, identifier, damage description and cause of damage.

*Initiative Eight – Increased Coordination with Local Governments*

There are no proposed changes to the plan for this initiative. 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 EOCs throughout Northwest Florida to assist during emergencies. Gulf also conducts a storm drill each year. There is no estimated cost for this initiative.

In response to information requested in the Hurricane Review Docket, Gulf discussed its coordination with local governments regarding vegetation management and identification of critical facilities. Gulf works with city and county representatives to ensure that they are aware of upcoming trimming activities, as some areas require noticing prior to the initiation of trimming.



Gulf meets regularly with officials to discuss topics such as storm restoration plans, procedures, and priorities. A sample of Gulf's meetings with several cities and counties was provided, and Gulf will have this information available going forward.

Gulf has 12 employees that are currently available to support county EOCs, depending on the event and needs of the county. Gulf also has personnel that staff the State EOC during activations. Their responsibilities are to obtain, prioritize, and process information from the State EOC, then provide progress reports and restoration status to EOC personnel and management.

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

There are no proposed changes to the plan for 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 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 signed an extension of the memorandum of understanding with PURC in December 2018 for two years, with a provision that the memorandum of understanding will be automatically extended for successive two-year terms. Gulf estimated the cost for 2019-2021 for this initiative would be \$60,000 comparably, the same amount was spent in 2016-2018.

*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. There is no estimated cost for this initiative.

In response to information requested in the Hurricane Review Docket, Gulf provided its contingency plans for roadway congestion, fuel availability, and lodging accommodation issues. In the event of roadway congestion, Gulf communicates with local, state, and federal authorities for assistance, as well as coordinating with law enforcement to route crews, resources, and equipment to affected areas. For fuel availability, Gulf has a primary fuel supplier for "blue sky" days, along with two backup suppliers who can also provide fueling equipment and support personnel when needed. For large storm events, contracts are in place with vendor lodging and can be utilized, while for smaller events, Gulf assesses the availability of local hotel accommodations.

National Electrical Safety Code Compliance

Gulf's distribution system complies with all applicable sections of the NESC. Gulf's transmission system complies with all applicable sections of the NESC in effect at the time of initial construction. For its substations, Gulf uses the American Society of Civil Engineers 7

EWL criteria for structural design and selection. Gulf uses construction Grade B on all new transmission lines. The Grades of construction are specified in the NESC on the basis of the required strengths for safety. The relative order of Grades is B, C, and N, with Grade B being the highest.

### Extreme Wind Loading Standards

As a result of Gulf's system performance during Hurricane Michael and the associated data obtained from forensic analysis, combined with the sharing of FPL's experience with its own storm hardening initiatives, Gulf is proposing to increase its future storm hardening efforts. Initially, in addition to continuing other aspects of its previously approved plans that have proven to be beneficial, Gulf is proposing to invest approximately \$5 to \$12 million in 2019 and an estimated \$14 to \$40 million over the remainder of this plan in projects associated with strengthening existing critical infrastructure facilities to current EWL standards per the NESC. Gulf uses pole loading software, PoleForeman and PLS-CADD, to assure compliance with all NESC loading requirements. PoleForeman is used to design distribution facilities. To design transmission facilities Gulf uses PLS-CADD.

#### *New Construction*

Gulf will continue the design and construction of new facilities based on the NESC. In addition, when practical and feasible, consideration will be given to upgrade existing transmission facilities when capital maintenance is performed.

#### *Major Planned Work*

Gulf utilizes NESC Rule 250C EWL to design all new and replacement structures on the transmission system, as well as on the distribution system.

#### *Critical Infrastructure (CIF)*

Initially, Gulf's process for identifying storm hardening projects was focused on interstate crossings, double circuit pole lines, key infrastructure, and areas that were difficult to repair or would affect a large number of customers. Storm hardening projects then migrated toward focusing on critical infrastructures such as hospitals, storm shelters, emergency operations centers, and others. More recent projects continue to be directed at critical infrastructures and may include more commercial corridors that would provide needed community support. Gulf learned during Hurricane Michael that mitigating damage to critical facilities and minimizing restoration time are crucial to the communities Gulf serves. Gulf proposes all new construction and work performed on critical infrastructure facilities meet the EWL standards.

### Mitigation of Flooding and Storm Surge Damage

Gulf has developed overhead and underground storm hardening specifications to minimize damage in areas subject to flooding and storm surges. These specifications will continue to evolve as Gulf continues to seek out best practices and learns from the review of gathered forensic data with respect to storm hardening and storm surge mitigation. All future underground transmission projects located within the possible storm surge area will be engineered to consider the impact of flooding or storm surge from weather events.

### Facility Placement

Gulf proposes 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 specifications, 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 to use the EWL standards for all new construction, major projects and maintenance work. Gulf also 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 the National Oceanic and Atmospheric Administration's (NOAA) Sea, Lake and Overland Surges from Hurricanes (SLOSH) model. Gulf will implement flood monitoring on vulnerable substations and review switch house construction standards for possible replacement and strengthening. 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 some projects:

- Feeder Patrols: Gulf reports 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.
- Distribution Automation: Gulf proposes 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 affect 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 (FCI): Gulf explained that FCIs are devices designed to indicate the passage of fault current. An 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.

Gulf's proposed storm hardening projects for 2019 are listed below. Gulf indicated that each of the projects will be implemented using EWL construction standards as part of the upgrade.

- Valparaiso: one CIF
- Panama City: two CIF
- Panama City Beach: one coastal feeder
- Escambia County: five community feeders

#### *Joint-Use Facilities*

Third-party attachment notification protocols are contained within contracts held by Gulf. Before third-parties attach, upgrade, or overlash cables to any Gulf structure, they must comply with a pre-notification process designed to inform Gulf of any proposed actions. The pre-notification involves a field pre-inspection with pole measurements, strength and loading calculations, work order preparation (if necessary), and a post-inspection of all work that is paid for by the requesting third-party attacher. As of year-end 2017, Gulf had a total of 202,706 utility distribution poles and was attached to 62,826 non-electric utility distribution poles. Gulf conducts field audits of its joint-use pole attachments on a five-year cycle, with its last audit completed in 2016. Gulf's next field audit is scheduled for 2021.

*Utility Cost/Benefit Estimates*

Gulf's updated plan includes estimates of costs to be incurred in connection with its updated plan for 2019 through 2021. These costs include continuation of its transition and implementation of Grade B construction, CIF improvements, feeder patrols, and other projects. For 2016 through 2018, Gulf spent a total of \$78,808,293 on its storm hardening plan. Gulf estimates it will spend approximately \$184,000,000 to \$265,000,000 for 2019 through 2021. Gulf attributes the increase in costs to an increase in storm hardening projects throughout its service territory and the replacement of wooden structures on the transmission system as opposed to just replacing the wooden cross-arms on the transmission system. In addition, as a result of Gulf's acquisition by NextEra Energy, Gulf will begin using FPL's construction standards and best practices for its storm hardening projects, which will increase the costs of the projects. Attachment B shows a comparison of costs associated with implementation of Gulf's current and updated wooden pole inspections and Ten Initiatives.

As a benefit to the Utility and its customers, Gulf's process for identifying storm hardening projects has evolved from focusing on feeders that were hard to repair and had a large number of customers affected to critical infrastructures to feeders that provide commercial community support. Gulf evaluates possible projects based on input and collaboration from employees in each district as well as determining feeders that contain critical customers, large number of customers, and/or feeders that may have experienced below normal reliability performance.

*Attachers Cost/Benefit Estimates*

Gulf requested input from third-party attachers in the development of its storm hardening plan. Gulf provided third-party attachers information about its updated 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 with interested third-party attachers to discuss major company and customer construction projects, construction standards, inspection 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 our rule and orders, and we therefore find it shall be approved. We note that approval of Gulf's plan does not mean

approval for cost recovery. Gulf should 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 2019-2021 storm hardening plan is 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 in the event this Order becomes final, this docket shall be closed.

By ORDER of the Florida Public Service Commission this 29th day of July, 2019.



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

WLT

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 August 19, 2019.

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>
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<b>Eight-Year Wooden Pole Inspection Program</b>
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| 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>
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| 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>
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| 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>
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| 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>
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| 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>
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<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 2016-2018 were \$6,841,000.	3. Costs for 2019-2021 are estimated to be \$8,379,000.

<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 2016-2018 were \$19,631,000.	3. Costs for 2019-2021 are estimated to be between \$15,000,000 - \$18,000,000.

<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 2016-2018 were \$496,000.	5. Costs for 2019-2021 are estimated to be \$500,000.

<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 2016-2018 were \$769,000.	3. Costs for 2019-2021 are estimated to be \$900,000.

<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. Replace all wooden structures, not just wooden cross-arms.
2. Adhere to current design and construction standards using generally accepted engineering practices, in conjunction with the recommended six-year structure inspection program.	2. Adhere to FPL's construction standards and best practices.
3. Costs for 2016-2018 were \$6,862,000.	3. Costs for 2019-2021 are estimated to be between \$22,000,000 - \$55,000,000.

<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 2016-2018 were \$0.	2. Costs for 2019-2021 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 2016-2018 were \$0.	2. Costs for 2019-2021 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 2016-2018 were \$60,000.	5. Costs for 2019-2021 are estimated to be \$60,000.

<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.