

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of 2019-2021 storm hardening
plan, Florida Public Utilities Company.

DOCKET NO. 20180148-EI
ORDER NO. PSC-2019-0313-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 FLORIDA PUBLIC UTILITIES 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.¹ In that Order, we noted:

¹Docket 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, 2006.² The Ten Initiatives are:

1. A Three-Year Vegetation Management Cycle for Distribution Circuits
2. An Audit of Joint-Use Attachment Agreements
3. A Six-Year Transmission Structure Inspection Program
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.³ By Order Nos. PSC-06-0781-PAA-EI addressing Tampa Electric Company (TECO) and Florida Public Utilities Company (FPUC or Utility), PSC-06-0947-PAA-EI addressing Progress Energy Florida, Inc. [now Duke Energy Florida, LLC (DEF)] and Gulf Power Company (Gulf), 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.

²Docket No. 20060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

³Order 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.⁴ Rule 25-6.0342, F.A.C., was ultimately adopted.⁵

Rule 25-6.0342, F.A.C., requires each IOU to file an Electric Infrastructure Storm Hardening Plan for review and approval by 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

⁴Order 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.

⁵Order 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.⁶ 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.⁷

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."⁸ 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.

⁶Order 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.

⁷Order 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.

⁸ 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 FPUC'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 FPUC'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

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

Wooden Pole Inspection Program

FPUC is continuing its eight-year Wooden Pole Inspection Program.^{9,10} The program identifies poles that require repair, reinforcement or replacement. An outside contractor, Osmose Utilities Services, Inc., performs all wooden pole inspections, including strength and loading tests. Currently, FPUC completed its third year of its second eight-year cycle. FPUC 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 \$1,305,000 as compared to \$2,032,000 spent for 2016-2018.

Ten Initiatives

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

FPUC proposes no changes to its previously approved trim cycle. Currently, its feeder and lateral circuits are trimmed, on average, every three years and six years, respectively.¹¹ FPUC reported that it has 139.63 miles of feeders and 570.87 miles of laterals. FPUC will continue to communicate with customers and local governments to address vegetation management. The estimated cost for 2019-2021 for Initiative One is \$3,285,000 as compared to \$2,933,000 spent for 2016-2018.

Initiative Two – Audits of Joint-Use Attachment Agreements

There are no proposed changes to the plan for this initiative. FPUC has joint-use agreements with multiple third-party attachers. In 2016, GIS mapping information was used in conducting an audit on all joint-use attachers in order to determine the number of attachments and identify any existing violations. A total of 7,101 telecommunication and 12,568 cable television attachments within the distribution system were identified. Additionally, FPUC was attached to 513 other company poles. FPUC does not perform strength and loading assessments during the joint-use audits as these tests are performed during the wooden pole inspections. The audits include:

- Pole Locations
- Owner of the pole
- City and county location
- Pole type, height, class and treatment

⁹Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 20060078-EI, *In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.*

¹⁰Order 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.*

¹¹Order No. PSC-10-0687-PAA-EI, issued November 15, 2010, in Docket No. 20100264-EI, *In re: Review of 2010 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C., submitted by Florida Public Utilities Company.*

- Pole date manufactured, inspected, and retreated
- Joint-use attacher name and type (telecommunication, cable)
- Violations
- Miscellaneous comments

Data collected from the audit will be analyzed to determine the number of poles found to be overloaded, number of unauthorized attachers and customer outages related to these situations. Instances where a pole failure could occur will be addressed immediately. The estimated cost for 2019-2021 is \$0 as compared to \$83,000 spent for 2016-2018.

Initiative Three – Six-Year Transmission Structure Inspection Program

There are no proposed changes to the plan for this initiative. FPUC's transmission structure inspection program includes a detailed inspection of its 138 kV and 69 kV transmission lines on a six-year cycle and transmission substations on an annual cycle. The program includes inspecting transmission towers and transmission-supporting equipment such as insulators, guying, grounding, conductor splicing, cross-braces, cross-arms, and bolts. The program also includes inspecting all structures, buss work, insulators, grounding, bracing and bolts at the transmission substations. The estimated cost for this initiative for 2019-2021 is \$51,000 as compared to \$55,250 spent for 2016-2018.

Initiative Four – Hardening of Existing Transmission Structures

There are no proposed changes to the plan for this initiative. FPUC's 138 kV transmission system is constructed using concrete and steel structures. In December 2018, the six-year transmission inspection was completed by a contractor, and any identified structure or material failures will be addressed by FPUC. The 69 kV transmission system consists of 217 poles, with 105 of them being concrete. FPUC will continue to replace the wooden poles when it is necessary due to construction requirements or concerns with the integrity of the pole. FPUC reports that by the end of 2021, there will be approximately 40 percent of its transmission structures left to be hardened. The costs for 2019-2021 are estimated to be \$1,900,000 as compared to approximately \$2,573,000 spent in 2016-2018.

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

There are no proposed changes to the plan for this initiative. FPUC implemented its GIS in 2008. The GIS identifies the distribution and transmission facilities on a land base map. This allows FPUC the ability to record data on all physical assets. The system communicates with FPUC's Customer Information System and functions as an Outage Management System (OMS) that allows collection of data used in determining reliability. FPUC's GIS also collects information regarding joint-use attachments, which provide additional information in conducting the joint-use audits. The costs for 2019-2021 are estimated to be \$120,000 as compared to \$299,000 spent in 2016-2018.

Initiative Six – Post-Storm Data Collection and Forensic Analysis

There are no proposed changes to the plan for this initiative. FPUC has a forensics team to coordinate communications, schedule data collection, and to report the findings. FPUC utilizes a contractor to collect, analyze and report on field data collected, which is entered into FPUC's OMS. The contractor will perform a forensic investigation at damage locations. The criteria for damage locations include, but are not limited to: poles, wires, cross-arms, insulators, transformers, reclosers, capacitor banks, cutouts, and any other equipment that is damaged or has caused a customer outage. Data will also be collected on damaged facilities as defined as broken poles, leaning poles, broken or downed wires, damaged line equipment, and any other incident that has caused a customer outage. The costs spent for 2016-2018 were \$1,629,000 for Initiative Six. The estimated costs for 2019-2021 have not been determined at this time.

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. FPUC will continue to collect outage data for overhead and underground systems in order to evaluate the reliability associated with the two systems. The forensic team report form allows for both overhead and underground damage to be entered. The data will be entered separately for each incident.

In response to information requested in the Hurricane Review Docket, FPUC outlined the type of comparable data that the Utility plans to provide for overhead and underground facilities. FPUC will collect data on a sample of its facilities that have had significant impact from wind and will include both storm hardened and non-hardened facilities. Included in the data collected will be where the location is, what type of facilities failed, and what caused the failure. In order to compare overhead and underground performance, FPUC plans to review physical performance, outage rates, and restoration times to make comparisons.

Initiative Eight – Increased Coordination with Local Governments

There are no proposed changes to the plan for this initiative. FPUC reports that it actively participates with local governments in pre-planning and coordinating activities for emergency situations. FPUC will have personnel located at the county EOCs on a 24-hour basis during emergencies, and as needed at the State EOC. FPUC will continue discussing undergrounding and vegetation management issues with local governments. To reduce impacts to overall reliability, FPUC reported that there is continued cooperation between all parties to address vegetation management in a cost-effective approach whenever possible. To ensure customer issues are quickly addressed, FPUC has a dedicated manager who is responsible for maintaining relationships with local and state governments, as well business and community leaders.

In response to information requested in the Hurricane Review Docket, FPUC discussed its coordination with local governments regarding vegetation management and identification of critical facilities. FPUC stated that formal meetings with local governments were not documented; however, FPUC met with two cities and three counties, and provided a list of topics

discussed. FPUC works closely with local governments on a routine basis on vegetation management activities, and to maintain a list of critical facilities. During a storm event, FPUC employees are located at a county or city EOC, if requested, and up-to-date contact information with local governments is verified on an annual basis. FPUC staffs five employees in two county and one city EOC, with staffing for several other EOCs on an as-needed basis.

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

There are no proposed changes to the plan for this initiative. FPUC will continue to participate in the collaborative research effort with the other Florida IOUs, municipalities 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. FPUC will continue to support PURC's effort but does not intend to conduct other types of research at this time. The costs for 2019-2021 are estimated to be \$3,000 as compared to \$3,000 spent in 2016-2018.

Initiative Ten – Natural Disaster Preparedness and Recovery Program

FPUC will continue to refine this initiative. FPUC's Disaster Preparedness and Recovery Plan provides guidelines under which the Utility will operate in emergency conditions. In order to ensure orderly and efficient service restoration, the guidelines address the following objectives:

- Safety of employees, contractors, and the general public
- Early damage assessment
- Request additional manpower
- Provide for orderly restoration activities
- Provide all logistical needs for employees and contractors
- Provide ongoing preparation of FPUC's employees, buildings, and equipment
- Provide support and additional resources for FPUC's employees and families

FPUC will utilize the plan to prepare for storms annually. The plan will also ensure that all employees are aware of their responsibilities during the storms.

In response to information requested in the Hurricane Review Docket, FPUC discussed contingency planning for roadway congestion, fuel availability, and lodging accommodation. For roadway congestion, FPUC coordinates with EOCs in impacted areas for assistance from state and local law enforcement. For fuel availability, FPUC has an emergency fueling contract with a supplier that provides fuel during events as needed, as well as emergency fuel tanks on Amelia Island. To ensure lodging accommodations are met, FPUC has lodging plans in place, which are made annually, and are adjusted based on the track and intensity of a storm. A variety of hotels are utilized to ensure sufficient lodging accommodations are available in the event a storm threatens or impacts FPUC's service areas.

National Electrical Safety Code Compliance

FPUC distribution and transmission facilities have been installed in accordance with NESC requirements in effect at the time of installation. Specifications have been developed that will allow for all future installations to meet NESC EWL standards. FPUC's 2019-2021 storm hardening plan includes a provision that all remaining wood transmission poles will be replaced with concrete poles that will meet or exceed the NESC EWL standards. FPUC uses construction Grade B for its distribution and transmission facilities. 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

FPUC incorporates EWL standards as specified in NESC Rule 250C EWL and in Figure 25-2(d) of the 2017 NESC. FPUC will use these standards to design new construction and major planned projects. In some cases FPUC exceeded the EWL standards. For example, FPUC's structures and facilities in Fernandina Beach were designed to withstand wind loading of 130 mph instead of the 120 mph required by the NESC Rule 250C EWL.

New Construction

FPUC designs new construction to comply with the NESC Rule 250C EWL utilizing construction Grade B. FPUC uses PoleForeman software to design its distribution poles to assure compliance with all NESC loading requirements. FPUC's transmission poles are designed by outside engineering companies that use PLS-CADD and PLS-Pole softwares.

Major Planned Work

As addressed above, FPUC designs new construction and major planned work to comply with the NESC Rule 250C EWL utilizing construction Grade B for new construction and replacements of distribution and transmission facilities.

Critical Infrastructure (CIF)

Critical infrastructures such as hospitals, storm shelters, water plants, sewer treatment plants, and distribution facilities along major highways are the primary focus in FPUC's 2019-2021 storm hardening plan. During FPUC's review of its lessons learned from the hurricane restoration activities of the last three years, additional critical loads locations were identified. The distribution lines serving those locations were added to FPUC's storm hardening project list. In addition, FPUC is replacing fused cutouts on those critical infrastructure distribution lines with new technology trip savers that reclose after faults, improving reliability.

Mitigation of Flooding and Storm Surge Damage

FPUC provides electric service to more than 28,000 customers in two non-contiguous service territories: the Northeast Division and the Northwest Division. FPUC's transmission

facilities are located only in the Northeast Division. The transmission lines are constructed near and across coastal waterways. Foundations and castings were used to stabilize the structures due to the soil conditions. Overhead distribution lines are located in both divisions and are subject to storm surges and flooding. If needed, additional supporting mechanisms, such as storm guys or pole bracing, will be installed. Reclosers, capacitors, and regulators that require electronic controls will be mounted above the maximum surge or flood levels. FPUC's underground distribution lines that are subject to storm surges and flooding are mainly located in the Northeast Division. When selecting underground projects, FPUC always considers the terrain characteristics, especially where nearby trees are located. FPUC underground projects have not experienced any flooding issues during the recent hurricanes.

Facility Placement

FPUC's facilities are located in areas that are easily accessible. The facilities will be placed along public right-of-ways or located on private easements that are readily accessible from public streets. FPUC reports that these requirements are necessary to efficiently and safely perform installation and maintenance on the facilities. FPUC notes that facilities placed along rear lot lines will only be constructed as a "last resort."

Deployment Strategies

FPUC's plan contains its deployment of its storm hardening strategy that will have an impact on future storm restoration activities.

Facilities Affected, Including Specifications and Standards

The significant areas of implementation from the deployment of FPUC's storm hardening strategy are:

- Wooden poles will be inspected at least every eight years.
- Vegetation management activities will ensure that feeders are trimmed every three years and laterals are trimmed every six years.
- Joint-use audits will be conducted every five years to identify pole loading issues.
- Detailed climbing inspections on all transmission facilities will be conducted every six years.
- FPUC will continue to replace wood transmission structures with concrete.
- FPUC will continue to rebuild its CIF to EWL.
- FPUC will use techniques to mitigate damage from storm surges and floods.
- FPUC will continue to place facilities on public right-of-ways.

Areas of Infrastructure Improvements

Most of the items listed above will affect all areas of FPUC's service territory. However, the transmission inspection and replacement of transmission structures will only affect the Northeast Division. The Northwest Division does not have any transmission facilities. The rebuilding of CIF to EWL will equally benefit both divisions. Below is a list of FPUC's proposed projects for 2019 through 2021.

- NW Division, Kelson Ave, 2019: Health facilities and wastewater lift stations.
- NW Division, Wastewater Plant, 2019: Critical wastewater treatment plant in Marianna.
- NE Division, South Fletcher Phase 2, 2019: Distribution line on Amelia Island along a highly populated area immediately adjacent to the Atlantic Ocean that experiences salt spray which causes corrosion on line hardware.
- NE Division, 69 kV Replacement Poles, 2019: Wood to concrete pole replacement.
- NW Division, Industrial Park Backup Feed, 2020: Backup feed to critical loads including new school (storm shelter), airport, Health department and fire station in Marianna.
- NW Division, Cottondale, 2020: Service critical loads including police station, city offices, high school and fire station.
- NE Division, 69 kV Replacement Poles, 2020: Wood to concrete pole replacement.
- NW Division, Hospital, 2021: Backup feeder for Jackson Hospital in Marianna.
- NE Division, Baptist Hospital, 2021: Storm hardened backup feeder to Baptist hospital in Fernandina Beach.
- NE Division, 69 kV Replacement Poles, 2020: Wood to concrete pole replacement.

Joint-Use Facilities

FPUC's joint-use pole procedures follow processes found in the language of current contracts FPUC has with joint-use entities. When a non-electric utility pole is determined to be dangerous to public safety, FPUC replaces the pole. After completion of the work, FPUC informs the non-electric utility that the pole was replaced and the circumstances that necessitated the replacement. If a non-electric utility company is found to not be performing inspections of its company-owned poles, FPUC has the option to perform the inspection in addition to the eight-year pole inspection cycle. If a pole is then identified as needing replacement, FPUC notifies the non-electric utility company of the need to replace the pole or FPUC performs the replacement of the pole. As of year-end 2017, FPUC had a total of 26,548 utility distribution poles and was attached to 513 non-electric utility distribution poles. FPUC completed the joint-use pole attachment audit during the last quarter of 2016. FPUC's next joint-use audit is scheduled to take place in 2021.

Utility Cost/Benefit Estimates

FPUC's updated plan includes estimates of costs to be incurred in connection with its updated plan for 2019 through 2021. This includes pole replacements, inspections of distribution and transmission facilities, vegetation management, and other projects. For 2016 through 2018, FPUC spent a total of \$14,529,663 on its storm hardening plan. FPUC estimates it will spend \$9,328,657 for 2019 through 2021. FPUC did not estimate an amount for its forensic data collection as it is dependent on the storm damage. In addition, there are no third-party joint audits scheduled for 2019, 2020, and 2021. Attachment B shows a comparison of cost associated with implementation of FPUC's current and updated Wooden Pole Inspection Program and Ten Initiatives.

One benefit to FPUC and its customers is the critical factors that are included in the analysis to identify storm hardening projects. FPUC will consider whether the facilities provide electrical service to critical customers and to areas that historically have the highest number of customer outages. In addition, FPUC considers whether the facilities provide electrical service to areas that are physically located near the ocean or can be impacted by floodwaters. Facilities that provide service to businesses that affect the overall economy (such as grocery stores and gas stations) and are inaccessible or have heavy vegetation are also considered. FPUC weighs the options for certain storm hardening projects on a case-by-case basis. The alternatives considered include factors such as cost, storm damage that could happen, restoration efforts, and location of the projects.

Attachers Cost/Benefit Estimates

Other than ongoing dialogue and negotiation on language in the joint-use agreements, no specific costs or benefits to third-party attachers were reported by FPUC.

Attachment Standards and Procedures

FPUC's updated plan includes the current Joint-Use Attachment Specifications addressing safety, reliability, and pole loading capacity. The current contracts with third-party attachers continue to govern attachment standards and procedures. If additional specifications are developed, third-party attachers will have the ability to provide input on new specifications.

Conclusion

FPUC's updated plan is largely a continuation of its current Commission-approved plan. Based on the review above, FPUC's plan has the information required by our rule and orders and we therefore find it shall be approved. We note that approval of FPUC's plan does not mean approval for cost recovery. FPUC 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 2019-2021 Florida Public Utilities Company's 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.



ADAM J. TEITZMAN
Commission Clerk
Florida Public Service Commission
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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.

Storm Hardening Requirements: Wooden Pole Inspection Program & Ten Initiatives

Eight-Year Wooden Pole Inspection Program
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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. |

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits
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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. |

Initiative 2 – Audit of Joint-Use Attachment Agreements
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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. |

Initiative 3 – Six-Year Transmission Inspection Program
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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. |

Initiative 4 – Hardening of Existing Transmission Structures

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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. |

Initiative 5 – Transmission and Distribution Geographic Information System
1. To conduct forensic review.
2. To assess the performance of underground systems relative to overhead systems.
3. To determine whether appropriate maintenance has been performed.
4. To evaluate storm hardening options.
5. Provide a timeline for implementation.
The utilities have the flexibility to propose a methodology that is efficient and cost-effective.

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

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

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

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

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

Florida Public Utilities Company

Eight-Year Wooden Pole Inspection Program	
Current Plan	Updated Plan
1. Implement an eight-year wooden pole inspection cycle for distribution poles.	1. No change
2. File the progress of this inspection in the Annual Reliability Report.	2. No change
3. Costs for 2016-2018 were \$2,032,000.	3. Costs for 2019-2021 are estimated to be \$1,305,000.

Initiative 1 – A Three-Year Vegetation Management Cycle for Distribution Circuits	
Current Plan	Updated Plan
1. All feeders are on a three-year trim cycle.	1. No change
2. Laterals are on a six-year trim cycle.	2. No change
3. Costs for 2016-2018 were \$2,933,000.	3. Costs for 2019-2021 are estimated to be \$3,285,000.

Initiative 2 – Audit of Joint-Use Attachment Agreements	
Current Plan	Updated Plan
1. (a) Perform pole strength assessment during the eight-year wooden pole inspection cycle	1. (a) No change
(b) FPUC conducts a thorough joint-use audit once every five years in addition to the eight-year pole inspection.	(b) No change
2. All required data collected during inspections and stored in a database.	2. No change
3. Verify attachments have been made pursuant to current joint-use agreements during the eight-year wooden pole inspection cycle.	3. No change
4. Stress calculations performed on select poles during eight-year wooden pole inspection cycle.	4. No change
5. Costs for 2016-2018 were \$83,000.	5. Costs for 2019-2021 are estimated to be \$0.

Initiative 3 – Six-Year transmission Inspection Program	
Current Plan	Updated Plan
1. Develop procedures for climbing inspections of Company-owned 69 and 138 kV structures.	1. No change
2. Substations are fully inspected at least once a year.	2. No change
3. Costs for 2016-2018 were \$55,000.	3. Costs for 2019-2021 are estimated to be \$51,000.

Initiative 4 – Hardening of Existing Transmission Structures	
Current Plan	Updated Plan
1. Continue to replace wooden poles on 69 kV lines.	1. No change
2. Plan is ongoing with no completion date.	2. No change
3. Costs for 2016-2018 were \$2,573,000.	3. Costs for 2019-2021 are estimated to be \$1,900,000.

Initiative 5 – Transmission and Distribution Geographic Information System	
Current Plan	Updated Plan
1. FPUC’s plan includes forensic reviews.	1. No change
2. FPUC’s plan includes underground versus overhead.	2. No change
3. Plan includes determination of appropriate maintenance.	3. No change
4. Plan includes evaluation of storm hardening options.	4. No change
5. Currently being implemented.	5. No change
6. Costs for 2016-2018 were \$299,000.	6. Costs for 2016-2018 are estimated to be \$120,000.

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

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

Initiative 8 – Increased Coordination with Local Governments	
Current Plan	Updated Plan
1. Coordinate with local and county emergency service agencies within its service area. In addition, to provide personnel at county EOC's, during emergencies.	1. No change
2. Costs for 2016-2018 were \$0.	2. Costs for 2019-2021 are estimated to be \$0.

Initiative 9 – Collaborative Research	
Current Plan	Updated Plan
1. Collaborative research efforts, led by PURC, which began in 2007.	1. No change
2. Research vegetation management during storm and non-storm times, wind during storm and non-storm events, hurricane and damage modeling towards further understanding the costs and benefits of undergrounding.	2. No change
3. FPUC will solicit participation from other utilities and organizations.	3. No change
4. Implementation is ongoing	4. FPUC has entered into a Memorandum of Understanding with the University of Florida's PURC, which extends research through December 31, 2018.
5. Costs for 2016-2018 were \$3,000.	5. Costs for 2019-2021 are estimated to be \$3,000.

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