

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

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

DATE: February 19, 2018
TO: Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk
FROM: Emily Knoblauch, Engineering Specialist, Division of Engineering *ek RJ*
RE: Docket No. 20170215-EU- Review of electric utility hurricane preparedness and restoration actions.

Please file the attached GPC's response to OPC's 1st set of interrogatories (Nos. 1-43) in the above mentioned docket file.

Thank you



Rhonda J. Alexander
Manager
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January 16, 2018

Erik L. Sayler
Associate Public Counsel
Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street, Room 812
Tallahassee, FL 32399-1400

Re: Docket No. 20170215-EU

Dear Mr. Sayler:

Attached is Gulf Power Company's response to Citizens' First Set of Interrogatories (Nos. 1-43) in the above-referenced docket.

Sincerely,

A handwritten signature in blue ink that reads "Rhonda J. Alexander".

Rhonda J. Alexander
Regulatory, Forecasting and Pricing Manager

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Attachments

cc: Gulf Power Company
Jeffrey A. Stone, Esq., General Counsel
Beggs & Lane
Russell Badders, Esq

Storm hardening and vegetation management activities

1. Please describe the Company's storm hardening activities on an annual basis for 2006 through 2017 to date excluding vegetation management and tree trimming activities.

ANSWER:

Since 2006, Gulf Power has balanced its storm hardening activities across its three districts while at the same time investing in programs that would benefit customers not just during severe weather events, but also on a daily basis.

Gulf's plan has followed the programs outlined by the Florida Public Service Commission's (FPSC) Ten Part Initiative as outlined in 2006 and filed in 2007. Initially, Gulf completed several construction projects that used the NESC extreme wind loading standards. These were pilot programs intended to become familiar with the construction standard and allow for forensic data to be collected following a major event. The projects were mainly critical interstate crossings throughout the system. As part of the program, Gulf moved to the NESC Grade B construction standard for all new construction and replacement, which has a higher wind and ice rating than the previously used Grade C standard. Over the past 10 years, Gulf has spent approximately \$1 million annually to target the upgrade of feeders associated with critical infrastructure on the distribution system. In the early phases, these projects focused on the installation of concrete poles where two or three circuits were on a single pole. This effort has been associated with feeders that serve hospitals, Emergency Operation Centers, sewer and water treatment facilities, and the strengthening of other infrastructure that is critical to recovery and restoration following a major event. The programs outlined as part of Gulf's filed storm hardening plan also include the strengthening of transmission structures and the replacement of wooden cross-arms with steel cross-arms.

Additionally, as part of the program Gulf continued:

1. The wooden pole inspection on the distribution system, and the transmission structure inspection cycle,
2. Audits of joint use attachments on distribution poles,
3. Increased collaborative research with other utilities through the Public Utility Research Center (PURC), and
4. Work with local and state governments to coordinate and train for future events.

Gulf Power has a proven and well-tested Storm Recovery Plan. As part of the storm hardening activities, this plan is reviewed annually, tested, and refined to ensure that our employees are prepared and trained to respond when called upon.

In 2010, the plan included the installation of distribution automation and a Distribution Supervisory Control and Data Acquisition (DSCADA) system that placed programmable devices on the distribution system with communication capabilities. This system and these devices provided Gulf with the ability to limit the number of customers affected and shorten the length of outages across the system which have contributed to overall reliability improvements since 2010.

Gulf also conducts annual distribution mainline feeder inspections to determine potential failures of poles and wire. There is also an infrared inspection of critical equipment on the distribution mainline feeders annually to look for and eliminate possible failure points. Both programs, and the associated repairs, are scheduled for completion prior to storm season every year.

Over the past 10 years, Gulf Power has focused on a balanced approach that would allow for the collection of forensic data in the event of a major weather disaster, but this approach has also brought benefits to our customers through improved reliability when we are fortunate enough to not be affected by destructive events.

2. How much did the Company spend (capital and O&M expenditures) on storm hardening activities on an annual basis from 2006 through 2017 to date excluding vegetation management and tree trimming activities?

ANSWER:

Year	Expenditures (\$000)	
	Capital	O&M
2006	3,993	504
2007	9,498	950
2008	9,380	897
2009	10,553	1,681
2010	10,282	1,712
2011	16,952	1,945
2012	15,919	504
2013	12,299	722
2014	12,757	1,437
2015	13,101	731
2016	16,849	1,312
2017	Unavailable at this time*	

*Gulf expects to have complete 2017 data available by January 19, 2018 at which time we will supplement this response.

3. For storm hardening activities 2006 through 2017 to date,
 - a. How much did the Company budget annually for storm hardening activities? Please provide a break-out for transmission, distribution, pole replacement, line replacement, and other storm hardening activities.
 - b. How much did the Company spend annually on storm hardening activities? Please provide a break-out for transmission, distribution, pole replacement, line replacement, and other storm hardening activities.
 - c. Please explain the year-by-year variances between the budgeted amount and actual amount, and why the variances occurred.
 - d. How much of the hardening costs were capitalized to rate base and how much was expensed?
 - e. Were those cost recovered through base rates or some other mechanism?

ANSWER:

Please see pages 2 through 5.

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TRANSMISSION (\$000)								
Year	(a) Budget	(b) Actual	(c) Variance*	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism	
2006	\$2,487	\$2,074	(413)	cost included storm hardening and capital maintenance	\$1,829	\$245	Base	
2007	\$4,376	\$4,060	(316)	cost included storm hardening and capital maintenance	\$3,800	\$260	Base	
2008	\$3,481	\$2,707	(774)	cost included storm hardening and capital maintenance	\$2,536	\$171	Base	
2009	\$3,485	\$5,292	1,807	cost included storm hardening and capital maintenance	\$4,961	\$331	Base	
2010	\$3,350	\$1,994	(1,356)	budget reflected total as above and the actual reflected only storm hardening	\$1,326	\$668	Base	
2011	\$3,350	\$3,246	(104)		\$2,940	\$306	Base	
2012	\$3,350	\$3,610	260	completion of wooden H-frame project	\$3,411	\$199	Base	
2013	\$1,285	\$1,153	(132)	wooden cross arm expenses exceeded estimates	\$1,040	\$113	Base	
2014	\$1,283	\$3,206	1,923	wooden cross arm expenses exceeded estimates	\$2,850	\$356	Base	
2015	\$1,303	\$4,987	3,684	wooden cross arm expenses exceeded estimates	\$4,792	\$195	Base	
2016	\$5,238	\$4,979	(259)	wooden cross arm expenses exceeded estimates	\$4,773	\$206	Base	
2017	\$6,602	Data is unavailable at this time**						Base

*An explanation has been provided for significant variances

**Gulf expects to have complete 2017 data available by January 19, 2018 at which time we will supplement this response.

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DISTRIBUTION (\$000)								
Year	(a) Budget	(b) Actual	(c) Variance*	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism	
2006	\$241	\$1,826	1,585	Budget was not setup to delineate at hardening levels that were established in 2007.	\$1,826		Base	
2007	\$1,973	\$4,929	2,956	This is the year that the hardening initiatives were formalized and submitted post budget.	\$4,929		Base	
2008	\$2,029	\$6,027	3,998	Pilot projects, network upgrades, and preventative hardening programs exceeded forecast.	\$5,948	\$79	Base	
2009	\$2,077	\$4,214	2,137	Pilot projects, network upgrades, and preventative hardening programs exceeded forecast.	\$3,997	\$217	Base	
2010	\$6,420	\$3,625	(2,795)	Pilot projects cost was less than anticipated.	\$3,271	\$354	Base	
2011	\$3,229	\$5,403	2,174	Distribution Hardening projects exceeded forecast.	\$5,212	\$191	Base	
2012	\$3,672	\$5,891	2,219	Distribution Hardening projects exceeded forecast.	\$5,778	\$113	Base	
2013	\$4,247	\$3,611	(636)	Network upgrades completed early and distribution hardening slightly less than anticipated.	\$3,416	\$195	Base	
2014	\$4,244	\$4,094	(150)		\$3,785	\$309	Base	
2015	\$4,291	\$3,377	(914)	Pilot projects and distribution hardening projects less than anticipated.	\$3,199	\$178	Base	
2016	\$3,927	\$4,474	547		\$4,345	\$129	Base	
2017	\$4,043	Data is unavailable at this time						Base

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POLE REPLACEMENT (\$000)								
Year	(a) Budget	(b) Actual	(c) Variance*	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism	
2006	\$77	\$595	518	Budget was not setup to delineate at pole replacements levels that were established in 2007.	\$336	\$259	Base	
2007	\$830	\$998	168		\$587	\$411	Base	
2008	\$850	\$1,397	547		\$864	\$533	Base	
2009	\$850	\$2,612	1,762	Pole replacements projects exceeded forecast.	\$1,580	\$1,032	Base	
2010	\$2,500	\$2,174	(326)		\$1,484	\$690	Base	
2011	\$2,500	\$2,702	202		\$1,623	\$1,079	Base	
2012	\$2,500	\$1,416	(1,084)	Cycle was completed a year early	\$1,256	\$160	Base	
2013	\$2,061	\$2,048	(13)		\$1,666	\$382	Base	
2014	\$2,061	\$2,363	302		\$1,621	\$742	Base	
2015	\$2,061	\$1,826	(235)		\$1,498	\$328	Base	
2016	\$2,282	\$2,189	(93)		\$1,728	\$461	Base	
2017	\$2,349	Data is unavailable at this time						Base

*An explanation has been provided for significant variances

**Gulf expects to have complete 2017 data available by January 19, 2018 at which time we will supplement this response.

LINE REPLACEMENT							
Year	(a) Budget	(b) Actual	(c) Variance*	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism
2006			-	The dollars for Line Replacement are included in projects associated with Distribution Hardening.			
2007			-				
2008			-				
2009			-				
2010			-				
2011			-				
2012			-				
2013			-				
2014			-				
2015			-				
2016			-				
2017			-				

OTHER (\$000)							
Year	(a) Budget	(b) Actual	(c) Variance*	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism
2006	\$0	\$0	-		\$0		Base
2007	\$679	\$460	(219)		\$180	\$280	Base
2008	\$612	\$146	(466)		\$31	\$115	Base
2009	\$652	\$116	(536)		\$15	\$101	Base
2010	\$2,237	\$4,200	1,963	Start of the DOE Smart Grid Initiative Grant	\$4,200		Base
2011	\$2,637	\$7,547	4,910	Acceleration of distribution automation projects to complete the smart grid investment grant early.	\$7,177	\$370	Base
2012	\$2,237	\$5,506	3,269	Accelerated replacement of vintage equipment with smart distribution automation equipment.	\$5,474	\$32	Base
2013	\$2,530	\$6,208	3,678	Accelerated replacement of vintage equipment with smart distribution automation equipment.	\$6,177	\$31	Base
2014	\$2,330	\$4,532	2,202	Accelerated replacement of vintage equipment with smart distribution automation equipment.	\$4,502	\$30	Base
2015	\$2,080	\$3,644	1,564	Accelerated replacement of vintage equipment with smart distribution automation equipment.	\$3,613	\$31	Base
2016	\$4,277	\$6,520	2,243	Accelerated replacement of vintage equipment with smart distribution automation equipment.	\$6,004	\$516	Base
2017	\$4,142			Data is unavailable at this time			Base

*An explanation has been provided for significant variances

**Gulf expects to have complete 2017 data available by January 19, 2018 at which time we will supplement this response.

4. Please describe the Company's vegetation management and tree trimming activities (tree trimming) on an annual basis from 2006 through 2017 to date. Please include if there is a long-range plan, how the process is staffed (whether through employees or outside contractors, or a mix of both), the cyclical time frames, any geographical considerations, and other priorities.

ANSWER:

From 2006 through 2009, Gulf's vegetation management program consisted of the following items:

- A three-year trim cycle on all distribution main line feeders
- An annual inspection and corrective action program for distribution main line feeders not scheduled by the cyclical trim or other work types
- A six-year reliability based cycle on lateral distribution lines
- A program for removing hazard trees located outside the normally maintained pruning zone with heavy emphasis placed on distribution main line feeders
- Increased storm hardening of new distribution lines by modifying initial vegetation clearing practices during construction
- Local coordination with code enforcement officials where customer-owned trees threaten the Company's facilities and where the customer refuses to assist in remediation of the problem
- Forensic data collection of forestry performance following storms
- Public education

In 2010, Gulf modified its program and received Commission approval for the modified program. Since 2010, Gulf's vegetation management program has consisted of the following elements:

- A three-year trim cycle on all distribution main line feeders
- An annual inspection and corrective action program for distribution main line feeders not scheduled by the cyclical trim or other work types
- A four-year reliability based cycle on lateral distribution lines
- A program for removing hazard trees located outside the normally maintained pruning zone with emphasis placed on main line feeders
- Increased storm hardening of new distribution lines by modifying initial vegetation clearing practices during construction
- Local coordination with code enforcement officials where customer owned trees threaten the Company's facilities, but the customer refuses to assist in remediation of the problem
- Public education through involvement in homeowners' associations, city/county governments, etc.

The program is managed by a staff of seven utility arborists, all of whom have formal education in vegetation management. The actual field work and trimming is performed by contractors.

Gulf's long-range plan is to continue its present program and monitor its performance to ensure the program continues to meet the needs of the Company and its customers.

5. How much did the Company spend (capital and O&M expenditures) on vegetation management and tree trimming activities on an annual basis from 2006 through 2017 to date?

ANSWER:

Gulf does not separate capital costs associated with vegetation management. Capital cost associated with vegetation management is imbedded in the work order process that is performed by contractors and is not tracked separately.

Year	Expenditures (\$000)
2006	3,331
2007	5,691
2008	4,569
2009	5,131
2010	6,358
2011	7,910
2012	6,399
2013	8,619
2014	8,980
2015	8,130
2016	7,200
2017	Unavailable at this time*

*Gulf expects to have complete 2017 data available by January 19, 2018 at which time we will supplement this response.

6. For vegetation management and tree trimming activities 2006 through 2017 to date,
- a. How much did the Company budget annually for tree trimming activities?
 - b. How much did the Company spend annually on tree trimming activities?
 - c. Please explain the year-by-year variances between the budgeted amount and actual amount, and why the variances occurred.
 - d. How much, if any, of the tree trimming costs were capitalized to rate base and how much was expensed?
 - e. Were those cost recovered through base rates or some other mechanism?
 - f. How did the Company decide which areas were to be trimmed each year?
 - g. Were some areas trimmed more frequently than others, if so, how often, and how did the Company make those decisions?

ANSWER:

- a-e: Please see page 2.
- f. Mainline feeders are trimmed on a predefined schedule. Lateral lines are selected based on a combination of factors which includes reliability of the circuit, date of last trimming, feedback from engineers or customers, and forestry field observations.
- g. Yes. As an example, areas with rapidly growing tree species and/or right-of-way constraints may be trimmed on a shortened schedule. Trim schedules may be extended in areas dominated by slow growing tree species. The decision to extend or shorten trim schedules is based on a combination of reliability data and field observations, such as those described in Item No. 6.f. above.

TREE TRIMMING (\$000)							
Year	(a) Budget	(b) Actual	(c) Variance	(c) Explanation	(d) Capitalized Costs	(d) Expensed Costs	(e) Recovery Mechanism
2006	\$4,673	\$3,331	(\$1,342)	program transition year		\$3,331	Base
2007	\$5,640	\$5,619	(\$21)			\$5,619	Base
2008	\$5,185	\$4,569	(\$616)			\$4,569	Base
2009	\$5,411	\$5,131	(\$280)		\$1,375	\$5,131	Base
2010	\$6,316	\$6,358	\$42			\$6,358	Base
2011	\$6,861	\$7,910	\$1,049			\$7,910	Base
2012	\$6,994	\$6,399	(\$595)			\$6,399	Base
2013	\$7,536	\$8,619	\$1,083			\$8,619	Base
2014	\$8,971	\$8,980	\$9			\$8,980	Base
2015	\$8,973	\$8,130	(\$843)			\$8,130	Base
2016	\$8,973	\$7,200	(\$1,773)			\$7,200	Base
2017	\$8,993	\$9,770	\$777		\$1,283		Base

* An explanation has been provided for significant variances

Gulf provides ongoing vegetation management on Gulf's distribution and transmission rights of way to ensure high reliability of service to our customers and to comply with NERC reliability standards. With the exception of 2006 as a program transition year, the remaining 11 year period from 2007 through 2017, Gulf's vegetation management budgeted O&M expenses were \$79,853,000, while actual expenses were \$78,685,000 resulting in a spend variance of \$1,168,000, or 1.46%, under budget for the period. Additionally, Gulf's vegetation management budgeted capital expenditures were \$1,282,920, while actual capital expenditures were \$2,657,867 resulting in a spend variance of \$1,374,947, or 51.7% over budget for the period. The actual Operations and Maintenance expense and Capital expenditures were \$81,342,867 compared with a budget of \$81,135,920, resulting in a \$206,947 variance, or 0.2%, for vegetation management expenditures for the 11 year period. The year to year variances result from business decisions arising from crew availability and storm activity within the Southeast.

7. For wooden poles inspected from 2006 through 2017 to date:
- a. Please describe the Company's wooden pole inspection cycle.
 - b. How many wooden poles were planned to be inspected each year
 - c. How many wooden poles were inspected each year,
 - d. Please explain the variance between the planned number and actual number inspected each year.

ANSWER:

- a. Gulf Power has an inspection cycle of eight years. Poles are inspected using an approved inspection matrix that is based on the pole age, treatment type and condition. Under this matrix, all Gulf Power poles (Creosote, Penta, and CCA) receive a visual inspection with sounding, boring and excavation as appropriate.
- b-d: Please see page 2.

WOODEN POLES INSPECTION				
Year	(b) Planned Inspection	(c) Actual Inspection	(c) Variance	(d) Explanation
2006		12,745	12,745	
2007	32,000	33,026	1,026	
2008	32,000	35,482	3,482	
2009	27,500	27,577	77	
2010	32,000	32,016	16	
2011	32,000	53,963	21,963	
2012	32,000	1,709	(30,291)	Gulf was ahead of schedule at the end of 2011 and only 1709 poles required inspection in 2012 to remain on schedule to achieve an eight year cycle.
2013	21,000	21,884	884	
2014	26,000	27,204	1,204	
2015	26,000	25,563	(437)	
2016	26,000	25,580	(420)	
2017	26,000	25,889	(111)	

* An explanation has been provided for significant variances

Gulf Power has been flexible with the number of poles that are inspected yearly but has not veered from completing on an eight year cycle.

8. For wooden poles replaced from 2006 through 2017 to date:
- a. Please describe the Company's wooden pole replacement plan.
 - b. How many wooden poles were planned to be replaced annually?
 - c. How many wooden poles were replaced annually?
 - d. Please explain the variance between the planned and replaced number of poles.
 - e. In each named storm since 2006, how many wooden poles were affected (damaged requiring repair or replacement) during the named storm.

ANSWER:

- a. Gulf Power's wooden pole replacement plan includes poles that are identified as needing replacement or reinforcement from the pole inspection program. After inspection, replacement poles are engineered with NESC Grade B construction standards and are replaced or reinforced before the end of the subsequent year.

b-d: Please see page 2.

e.

Year	Named Storm	Poles Affected
2017	Irma	1
2017	Nate	5*

*Includes poles owned by other pole owners.

WOODEN POLES REPLACEMENT				
Year	(b) Planned Replacement	(c) Actual Replacement	(c) Variance	(c) Explanation
2006	185		185	Inspection completed in 4th quarter repairs scheduled for 2007
2007	736	185	551	
2008	969	736	233	
2009	418	969	(551)	
2010	1,060	418	642	
2011	1,364	1,060	304	
2012	48	1,032	(984)	332 replaced in 2013
2013	790	380	410	
2014	676	790	(114)	
2015	693	676	17	
2016	746	693	53	
2017	910	746	164	

* Numbers include replacement and reinforceable poles. Poles identified as needing repair were scheduled to be completed before the end of the next year after inspection.

9. For poles upgraded to concrete from 2006 through 2017 to date:
- a. Please describe the Company's plan to replace poles with concrete poles.
 - b. How many poles were planned to be replaced with concrete annually?
 - c. How many wooden poles were replaced with concrete annually?
 - d. What other types of poles were replaced with concrete and of those how many were replaced annually?
 - e. Please explain the variance between the planned and replaced number of poles.
 - f. In each named storm since 2006, how many concrete poles were affected (damaged requiring repair or replacement) during the named storm?

ANSWER:

- a. Gulf Power does not have a pre-determined or defined pole replacement program to convert distribution wood poles to concrete. Concrete poles are used in specific circumstances where wood poles and added guying will not meet Grade B construction standards.
- b. See response to Item No. 9.a. above.
- c. See response to Item No. 9.a. above.
- d. N/A
- e. N/A
- f. Gulf Power has not been affected by a direct hit from a named storm since 2006, and it does not have any concrete pole damage information to present that is associated with named storm events. However, during the tornado event that affected the Pensacola area in February of 2016, two concrete poles were snapped at the ground and had to be replaced as part of the restoration efforts.

10. Were any wooden poles replaced with steel for fiberglass reinforced poles from 2006 through 2017 to date? Please give the number of poles replaced by different type each year.

ANSWER:

Gulf Power has not replaced any wooden poles on the distribution system with steel or fiberglass reinforced poles.

11. In each named storm since 2006, how many steel or fiberglass reinforced poles were affected (damaged requiring repair or replacement) during the named storm?

ANSWER:

Gulf Power has not been affected by a direct hit from a named storm since 2006, and does not have any distribution steel or fiberglass reinforced pole damage information to present.

12. Please describe the distribution system inspection cycle and hardening efforts.

ANSWER:

Gulf Power conducts two system inspections annually that are scheduled for completion prior to storm season (June 1st).

Feeder Patrols – mainline feeder inspection conducted annually by field engineers. Each district engineering team is responsible for the physical inspection of all feeders to include visual inspection of poles, guy wires, and lines. Maintenance work orders are submitted for all issues found during the inspection with work scheduled to be completed prior to June 1st.

Infrared Patrols – mainline infrared equipment inspections conducted annually by corporate engineering. Each piece of equipment on the mainline feeder is inspected using an infrared camera to determine if the equipment or its connection is experiencing any abnormal heating that could cause a failure. The inspection includes reclosers, capacitor banks, switches, and regulators. Maintenance work orders are submitted for all issues found during the inspection with work scheduled to be completed prior to June 1st.

As described in Gulf's response to Item No. 4, Gulf also performs an annual inspection of feeder mainline for vegetation issues, which are addressed before the start of storm season.

In addition, other activities Gulf performs as part of its Storm Hardening Plan include:

1. Completing an annual inspection of the two-thirds of feeder mainline not scheduled for trimming to find and correct vegetation issues before the start of storm season.
2. Performing joint-use audits every five years to find and correct dangerous conditions, such as buckling, splitting, broken poles, low hanging wire, etc.
3. Replacing all transmission H-frame structures' wooden cross arms with steel cross arms.
4. Maintaining an accurate representation of the electric system for outage prediction, work planning, and post-storm evaluation.
5. Preparing to collect post-storm data and forensics as part of evaluating construction standards going forward.
6. Coordinating with local governments and fostering communications to ensure preparedness for an open dialog during a major event.
7. Participating in Public Utility Research Center (PURC) research initiatives.

8. Practicing an annual storm plan, updating manuals, and reviewing storm preparations each year.
9. Adopting Grade B construction as a system wide standard for new distribution construction.
10. Monitors several Extreme Wind Loading projects to evaluate storm performance compared to Grade B and Grade C construction.
11. Adopting standards to mitigate damage on overhead and underground facilities due to storm surge.
12. Moving or installing facilities in easy-to-access areas, such as along road right-of-ways, to improve storm restoration times.
13. Investing in additional distribution automation, faulted circuit indicators, and a more robust Distribution Supervisory Control and Data Acquisition (DSCADA) system.

13. Please describe the transmission structure inspection cycle and the hardening of those structures.

ANSWER:

Gulf Power adopted the Southern Company Transmission Line Inspection Guidelines in 2004. Based on this guideline, transmission line structures are inspected every six years. The inspection consists of both walking and aerial inspections performed by both employees and contractors. Gulf Power designs and constructs new facilities based on the standards set forth by the most current version of the National Electric Safety Code (NESC). This includes the upgrade of transmission facilities when capital maintenance is performed. Gulf Power has installed storm guys on all wooden H-frame structures and is in the process of replacing all wooden cross-arms. Only three wooden cross-arms remain at the end of 2017, which are scheduled for replacement in 2018.

14. Please describe the tree trimming quality control review performed by the Company on the work of its contract tree trimming crews?

ANSWER:

Gulf Power's internal Utility Arborists routinely complete Quality Assurance reports on contractors working on the system. Contractors are also required to email their daily work schedule and any deviations from that daily work schedule to their assigned Utility Arborist.

15. Please describe the tree trimming quality control review performed by the Company on the work of its employees performing tree trimming?

ANSWER:

All tree trimming is performed by contractors.

16. Please describe whether the Company was prohibited or restricted in its tree trimming activities by local governments, ordinances, or franchise agreements, and if so, where and why.

ANSWER:

Gulf Power does not currently have any restrictions associated with tree trimming activities. However, our Utility Arborists do work with governmental agencies, Home Owner Associations (HOA), and other customers to meet the needs of the Company while maintaining the esthetics of areas and educating the public on proper tree placement and required trimming.

Communication

17. Please describe the ways the Company communicates information to its customers prior to, during, and after a named storm since 2015.

ANSWER:

As reported in Gulf's response to Staff's First Data Request, Item No. 20(b) in this docket, Gulf Power provides continuous updates to customers before, during, and after storms. Communications to the public are provided through:

Gulf Power App: Gulf Power provides and advertises a free smartphone app. The app allows customers to access our Power Outage map, report an outage, or monitor the status of an outage. The app also provides access to Gulf Power social media and website.

Gulf Power website: Gulf Power activates its online storm center with important information for customers before, during and after a storm.

Power Out Alerts: Customers can sign up to receive texts, emails or phone calls regarding outages at a home or business for no charge.

Social Media: Gulf Power's Facebook page and Twitter feed provides updates 24/7 during a major storm, including restoration information.

News Releases/News Media: After a storm has passed, Gulf has at least two news releases a day, coordinated with the State Emergency Operations Center (EOC) website updates. News releases include information on how to communicate with Gulf Power, storm safety tips, information about our crews, and outage restoration.

PSAs: Gulf also has pre-recorded public service announcements that play on local radio stations sharing safety tips and information about how to connect with Gulf Power.

18. Please describe the ways customers can communicate information to the Company prior to, during, and after a named storm since 2015.

ANSWER:

Phone: Customers can call the Company's 800 number for assistance.

Website: Customers can "chat" real time with a representative on Gulf Power's website and email the Company via the website.

Gulf Power App: Gulf Power customers can report outages on the Company's free smartphone app. The app allows customers to access the Company's Power Outage map in order to report an outage or monitor its restoration status. The app also provides access to Gulf Power social media where customers can comment to or directly message Gulf Power.

Social Media: Customers can comment or directly message Gulf Power through the Company's Facebook and Twitter accounts 24/7 during a major storm.

19. Please describe how customers can report power outages.

ANSWER:

As reported in Gulf's response to Staff's First Data Request, Item No. 16 in this docket, normal methods or channels available to customers to report outages include:

- Phone (self-serve) via the Interactive Voice Response system
- Phone (representative assisted)
- Online customer care (self-serve)
 1. www.gulfpower.com
 2. Gulf Power mobile app

In addition to the customers being able to report an outage, Gulf Power's metering system also reports customer outages directly to the outage management system without any required interaction from the customer.

20. Please describe how customers can report maintenance needs such as leaning poles or overgrown lines, both during a storm recovery and in ongoing operations.

ANSWER:

Phone: Customers can call the Company's 800 number for assistance.

Website: Customers can "chat" with a representative on Gulf Power's website. Customers can also email the Company via the website.

Gulf Power App: Gulf Power customers can report maintenance needs on the Company's free smartphone app. The app allows customers to access the Company's Power Outage map in order to report an outage or monitor its restoration status. The app also provides access to Gulf Power social media where customers can comment to or directly message Gulf Power.

Social Media: Customers can comment or directly message Gulf Power through the Company's Facebook and Twitter accounts 24/7 during a major storm.

21. Several customers filed comments stating they were unable to communicate with the Company regarding unsafe conditions such as live downed power lines or trees on wires. Does the Company have a process for these people to report such conditions? Please describe and explain how it functioned after Irma.

ANSWER:

Gulf Power customers can report emergency or unsafe conditions by calling the 800-customer service line or power restoration line, available 24 hours per day, every day. Customers can also call 911 and a 911 dispatcher will coordinate communication directly with Gulf Power's Distribution Control Center.

When a customer calls the 800-customer service line or power restoration line and selects 'dangerous condition' in the automated system's power outage menu, their call is immediately routed to a Customer Care Representative who documents the account and issues an emergency order to be acted upon.

The above process was in place during and after Hurricane Irma and functioned as described above.

22. Please describe smart phone apps, website services, social media, and other means of relaying information to customers prior to, during, and after a named storm.

ANSWER:

As reported in Gulf's response to Staff's First Data Request, Item No. 20(b) in this docket, Gulf Power provides continuous updates to customers before, during, and after storms. Communications to the public are provided through:

Gulf Power App: Gulf Power provides and advertises a free smartphone app. The app allows customers to access our Power Outage map, report an outage, or monitor the status of an outage. The app also provides access to other Gulf Power social media and websites.

Gulf Power website: Gulf Power activates its online storm center with important information for customers before, during and after a storm.

Power Out Alerts: Customers can sign up to receive texts, emails or phone calls regarding outages at a home or business for no charge.

Social Media: Gulf Power's Facebook page and Twitter feed provides updates 24/7 during a major storm, including restoration information.

News Releases/News Media: After a storm has passed, Gulf has at least two news releases a day, coordinated with the State Emergency Operations Center (EOC) website updates. News releases include information on how to communicate with Gulf Power, storm safety tips, information about our crews, and outage restoration.

PSAs: Gulf also has pre-recorded public service announcements that play on local radio stations sharing safety tips and information about how to connect with Gulf Power.

23. How many complaints did the Company receive during and after the named storm?

ANSWER:

None.

24. Please provide the number of maintenance requests (e.g., leaning poles, overgrown lines, trees on poles/lines, etc.) per year from 2006-present from customers and how each request was resolved.

ANSWER:

Year	Tree Trim Orders	Leaning Poles Orders
2006	1,554	19
2007	1,286	21
2008	1,558	12
2009	1,719	15
2010	1,432	19
2011	2,733	34
2012	3,130	42
2013	2,890	59
2014	2,653	73
2015	2,754	50
2016	2,481	56
2017	3,117	59

All customer requests related to overgrown lines and trees or reports of leaning poles or lines are entered as service orders in the Customer Service System (CSS). Each order is assigned, investigated and necessary work is performed to resolve the request.

25. Please describe how customers with medically necessary equipment are identified, how they are communicated with, and if they receive a higher priority for restoration efforts.

ANSWER:

A Medically Essential Service Customer (MESC) is a residential customer whose service is medically essential, as affirmed through the certificate provided by Gulf Power Company and completed by a State of Florida licensed medical doctor.

A MESC is identified in Gulf Power's Customer Service System (CSS).

In the event of an unplanned outage of any cause, notifications are not made to MESC customers, and they do not receive a higher priority for restoration efforts. As discussed in Gulf's response to Staff's First Data Request in this docket, Item No. 6, every weather event is different, and a flexible plan is required to restore service in an efficient and safe manner. The general plan is to restore Generation and Transmission resources first to energize local substations. Substation Team Leaders have critical customer lists that include hospitals, nursing homes, lift stations, first responders, Emergency Operations Centers (EOC) and similar facilities and when possible, they will strive to restore power to these locations. Following critical customers, the focus is turned to restoring the greatest number of customers in the shortest amount of time based on the damage assessments and available resources.

In the event of a planned outage, Gulf Power attempts to contact, by mail or automated phone message, all customers who may be affected by the planned outage. The Company strives to send the pro-active communication within a week prior to the planned event; however, in some cases, it may be within a day prior to the event. In cases in which it is deemed there is not reasonable time for a mailed notification to reach the customer prior to the event, an automated phone message is sent.

26. Please describe how the Company communicates with customers who do not have access to the internet or phone, both during a storm recovery and in ongoing operations.

ANSWER:

As reported in Gulf's response to Staff's First Data Request, Item No. 20 in this docket, Gulf Power provides continuous updates to customers before, during, and after storms. Customers that do not have access to phone or internet are provided information though:

News Releases/News Media: After a storm has passed, Gulf has at least two news releases a day, coordinated with the State Emergency Operations Center (EOC) website updates. News releases include information on how to communicate with Gulf Power, storm safety tips, information about our crews, and outage restoration. Representatives will also be conducting multiple interviews with news agencies including radio stations.

PSAs: Gulf also has pre-recorded public service announcements that play on local radio stations sharing safety tips and information about how to connect with Gulf Power.

27. Please describe how the Company communicates using the radio or postal service.

ANSWER:

Please see Gulf's response to Item No. 26.

28. Please describe how the Company communicates with customers whose first language is neither English nor Spanish.

ANSWER:

Gulf Power subscribes to a Language Line Service for conversing with our non-English speaking customers. This service is available 24 hours per day, 7 days per week and provides translation for more than 170 languages.

During the translation, the Customer Service Representative and the Language Line Interpreter work together on the phone to ensure the customer's needs and questions are fulfilled.

Examples of languages interpreted for Gulf Power customers are Spanish, Thai, Japanese, Mandarin, Russian and Vietnamese.

29. Has the Company reviewed all comments addressing customer communication and power restoration (received by the Company, received during post recovery at the Commission, filed for purposes of this docket, as well as complaints received by governmental units and other entities)? What follow up has the Company initiated with the customer?

ANSWER:

Yes, the Company has reviewed all comments addressing customer communication and power restoration in each of the channels described in the question.

One comment was received in this docket from a Gulf Power customer. In the comment received on January 10, 2018, the customer stated that the Town of Cambellton has no requirements in this process other than reporting outages via phone.

The Company has attempted to contact the customer by phone on different days and times since the comment was received.

30. What problem areas has the Company identified with customer communication and power restoration based on experience and customer complaints during the recovery period after Hurricane Irma?

ANSWER:

As Irma was making its way through Florida, Gulf Power observed other utilities' communications with customers and identified potential problem areas before Gulf Power's service area was impacted by the storm. Those areas focused mostly in the social media arena, where the Company observed successes when utilities maintained a stream of information to their customers and were highly responsive to customer inquiries. Gulf Power also took note of the success of communicating through video.

The biggest challenge in this social media era is providing a constant communication thread to customers. With the constant flow of information customers are accustomed to, utilities must work to provide continuous updates to customers during a restoration, especially a multi-day event. Given the multiple sources of information, identifying and responding to misinformation is a potential problem area as customers turn to a variety of sources for news.

This environment of instant gratification has created an expectation of instant recovery from storms, which is unrealistic, given the often-widespread damage caused by storms such as Irma. Based on the amount of damage, a restoration may be several days or more.

Given the growth in smartphones, mobile communication will become even more important in storm situations, since once customers lose power they will turn to their phones as their primary connection to information.

31. How does the Company plan to address these problem areas?

ANSWER:

Gulf did not have any specific complaints or issues that needed to be addressed. Gulf will continue to monitor and refine communication efforts to meet the needs of our customers.

32. Please explain why some customers lost power prior to the storm making landfall (i.e., high winds experienced in the customers' vicinity).

ANSWER:

Every weather event is different, and the damage produced by the event prior to, during, and after the storm varies. Hurricane force winds often extend hundreds of miles outside the storm track. Tornados often occur in the north-east quadrant of the storm well ahead of the actual land fall. Rains produced ahead of storms saturate the ground weakening vegetation and causing flooding. Wind, rain, debris, tornados, and other variables may affect power ahead of the landfall of a major weather event.

33. Did the Company de-energize the grid in advance of the storm, if so, when, why, and what was communicated to customers prior to the Company's actions?

ANSWER:

Gulf Power does not de-energize the grid prior to a storm. Crews and other personnel continue to work as conditions allow to maintain and restore power before, during, and after a weather event.

34. How many linear feet of overhead lines does the Company have, and what percentage suffered an outage?

ANSWER:

Gulf Power has an estimated 53,348,893 linear feet of overhead primary lines.

Gulf's outage management system is not configured to measure the percentage of line feet that suffer an outage (i.e. line feet impacted by each event). However, Gulf Power's system does allow for the tracking of events on the overhead system per the distribution system as a whole. Based on 2016 average system data reported in Gulf's 2016 Reliability and Storm Hardening Initiatives Report, Gulf Power's overhead system experienced 1.85 outages per mile, 6,500 Customer Minutes of Interruption (CMI) per mile, and 83 Customers Interrupted (CI) per mile on average across the system.

35. How many linear feet of underground lines does the Company have and what percentage suffered an outage?

ANSWER:

Gulf Power has an estimated 15,612,219 linear feet of underground primary lines.

Gulf's outage management system is not configured to measure the percentage of line feet that suffer an outage (i.e. line feet impacted by each event). However, based on 2016 average system data reported in Gulf's 2016 Reliability and Storm Hardening Initiatives Report, Gulf Power's underground system experienced 0.64 outages per mile, 2,829 CMI per mile and 18.7 CI per mile. It should be noted that underground customers are affected by overhead outages, and therefore included in the metrics used to answer Item No. 34 above.

36. What analysis has the Company performed regarding the outage frequency for overhead versus underground power lines, and please describe the results.

ANSWER:

Gulf Power monitors the percentage of outages that occur on overhead versus underground systems on a routine basis. Overall, underground facilities contribute a small percentage of the total outages. On average, underground outages comprised less than 10.3 percent of all adjusted outages since 2015. Of those, associated underground outages only comprised 7.4 percent of SAIFI and 11.3 percent of the SAIDI adjusted value. However, as noted in Gulf's 2017 Storm Hardening and Reliability Initiatives report, Section 10.1, the Outage Duration (L-bar) is significantly higher for underground events than it is for overhead events.

As mentioned in Gulf's response to Staff's First Data Request, Item No. 36 in this docket, over 98 percent of all Hurricane Nate's outages and over 99 percent of Hurricane Irma's outages were on overhead lines. This is in line with the knowledge that underground facilities are less impacted by wind and wind-blown debris and less prone to damage by vegetation. However, overhead damage can and will affect underground customers. Most outages that are limited strictly to the underground system during hurricanes are caused by water saturation, storm surge, uprooted trees, and lightning.

37. Please explain what caused power outages in areas that had underground power lines.

ANSWER:

During Hurricane Irma, there were a total of five underground outages: two were categorized as Equipment Failure, two as Unknown, and one as Other Weather. Gulf Power notes the outage due to Other Weather was a result of an underground customer's facilities experiencing water intrusion from heavy rain. Outages limited to strictly underground facilities during hurricanes and other major weather events are typically caused by water saturation/intrusion, storm surge, uprooted trees, and lightning.

38. How many homes that have underground power lines experience power outages?

ANSWER:

Gulf Power does not have the ability to answer this question in the manner that it was asked with the term "homes." However, assuming all residential meters serve homes, the following data is provided:

Gulf Power estimates there were 82 residences that experienced outages due to issues on underground facilities during Hurricane Irma. Underground customers are also largely served by overhead facilities, and another 925 underground residences that are served by both overhead and underground facilities experienced outages due to overhead facilities issues during Hurricane Irma.

During Hurricane Nate, there were an estimated 221 residences affected by outages on underground facilities and another 5,586 residences affected by outages on overhead facilities. About 3,968 of these homes' outages were due to outages on overhead SCADA reclosers or feeder breakers. These outages can affect large numbers of customers who may be served by underground facilities in their neighborhoods, but are also served by many miles of overhead lines.

39. How many substations does the Company own?

ANSWER:

Gulf Power owns 135 substations.

40. How many of the Company's substations had to be de-energized due to flooding?

ANSWER:

Gulf Power has not had to de-energize any substation due to flooding during Hurricanes Hermine, Matthew, Irma, Maria, or Nate.

41. How many of the Company's substations were taken out of service due to tree or debris damage?

ANSWER:

Gulf Power has not taken any substations out of service due to tree or debris damage during Hurricanes Hermine, Matthew, Irma, Maria, or Nate.

42. What does the Company plan to do in the future to eliminate flooding and tree/debris damage at the Company's substations?

ANSWER:

Gulf continues to review and monitor substation locations for possible flooding and debris damage. Annual inspections of substations and their surrounding areas ensure a protective barrier against this type of damage and other physical security concerns.

As stated in Gulf's Storm Hardening Plan (Section 9.1.3), Coastal Substation Risk Assessments have been completed for all substations. A National Oceanic and Atmospheric (NOAA) SLOSH (Sea, Lake, and Overland Surges from Hurricanes) model was used to estimate surge heights and winds results from historical, hypothetical, or predicted hurricanes. A risk assessment at each substation was completed, based on information provided by the SLOSH model.

43. If applicable, has the securitization for the prior 2004 and 2005 storms ended? If yes, when; if not, when?

ANSWER:

N/A.

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF ESCAMBIA)

Docket No. 20170215-EU

Before me the undersigned authority, personally appeared Tracy G. Clark, Assistant Corporate Secretary of Gulf Power Company, and who on behalf of said corporation, being first duly sworn, deposes, and says that pursuant to Rule 1.340(a), Florida Rules of Civil Procedure, she verifies that the foregoing answers to the interrogatories are submitted on behalf of said corporation, and that the foregoing constitute true and correct answers to the best of her knowledge, information, and belief based on the information provided by others in the course of business. She is personally known to me.

Tracy G. Clark

Tracy G. Clark
Assistant Corporate Secretary

Sworn to and subscribed before me this 16th day of January, 2018.

Melissa Darnes
Notary Public, State of Florida at Large



MELISSA DARNES
MY COMMISSION # FF 912698
EXPIRES: December 17, 2019
Bonded Thru Budget Notary Services

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**IN RE: Review of electric utility hurricane
preparedness and restoration actions**)
)
)

Docket No.: 20170215-EU

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing was furnished by electronic mail this 16th day of January, 2018 to the following:

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