



April 18, 2019

Mr. Adam Teitzman
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee FL 32399-0868

Re: Docket No. 20180147-EI – Review of 2019-2021 storm hardening plan, Gulf Power Company

Dear Mr. Teitzman:

Attached is Gulf Power Company's response to Staff's Third Data Request in the above-referenced docket.

Sincerely,

A handwritten signature in blue ink that reads 'C. Shane Boyett'.

C. Shane Boyett
Regulatory, Forecasting and Pricing Manager

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Attachments

cc w/att.: Florida Public Service Commission
Jennifer Crawford, Office of General Counsel
Gulf Power Company
Russell Badders, Esq., VP & Associate General Counsel
Beggs & Lane

National Electrical Safety Code (NESC) Compliance

1. Please refer to page 18.
 - a. What NESC construction grade does Gulf use for its distribution and transmission facilities?
 - b. Does Gulf use the same NESC construction grade for new construction as it does for replacement?
 - c. Why does Gulf use the American Society of Civil Engineers 7 extreme wind loading criteria instead of the 2017 National Electrical Safety Code as required by Rule 25-6.0345, F.A.C.?
 - d. Does Gulf use any software to design its distribution and transmission supporting structures? If yes.
 - i. Does the software comply with the 2017 NESC?
 - ii. Does the software's operator need to know the 2017 NESC code to enter the correct information into the software? Example: Enter the Basic Wind Speed as specified by Figure 250-2 of the 2017 NESC into the software.
 - iii. What is the name and version of the software?

RESPONSE:

- a. Gulf Power uses the NESC 250C Extreme Wind Loading (EWL) standard for all new and replacement structures on the transmission system. On the distribution system, Gulf Power endeavors to construct all new and replacement facilities at the NESC 250C EWL standard. However, there are occasionally engineering constraints that limit the ability to construct facilities at this standard. In such cases, Gulf constructs the pole at the highest standard possible with the NESC Grade B standard being the minimal construction standard for all new and replacement facilities.
- b. Yes.
- c. The wind load maps referenced within the NESC document are there by permission of the American Society of Civil Engineers (ASCE). Gulf uses the NESC EWL standard that is based on the ASCE standard and is therefore compliant with Rule 25-6.0345, F.A.C.

- d. Yes. Moreover, the software is compliant with 2017 NESC construction standards. The software's operator does not need to know the 2017 NESC code to enter the correct information into the software; the user only has to enter the desired wind speed for the construction area based on the 2017 NESC wind profile maps. Gulf currently uses the PoleForeman software application, version 7.0.8, for all distribution construction projects. Transmission design engineers use a similar application and process for inputting wind speeds and NESC requirements. The application is PLSCADD, and the company is currently running version 15.5.

2. Is Gulf applying any safety (load or strength) factor to exceed the NESC minimum requirements?

RESPONSE:

No. Gulf Power does not use any additional loading factors in excess of the NESC requirements.

Extreme Wind Loading (EWL) Standards

3. Please refer to page 18.
 - a. Does Gulf design and construct its facilities in compliance with Rule 250C of the 2017 NESC?
 - b. For the projects associated with strengthening existing critical infrastructure facilities to extreme wind loading standards per NESC guidelines, has Gulf selected which NESC construction grade will be used for these projects?

RESPONSE:

- a. Gulf uses the NESC 250C design standard for all transmission construction. Gulf uses the NESC 250C design standard for distribution construction where feasible.
- b. Gulf will use the NESC 250C Extreme Wind Loading design standard for all construction associated with critical infrastructure facilities.

Mitigation to Flooding and Storm Surge Damage

4. Please refer to page 19.
 - a. Has Gulf adopted and/or implemented any new procedure to build underground distribution to mitigate damage due to flooding and Storm Surges, like the installation of submersible equipment?
 - b. Has Gulf conducted any testing to check the reliability of the underground system in the event of flooding in the area where the underground system has been installed? If yes, please explain the results and findings.
 - c. Has Gulf learned any lessons from previous underground projects? If yes, please explain the lessons learned.
 - d. Does Gulf consider the terrain's characteristics, soil consistency, historical data and FEMA flooding maps when selecting the Storm hardening underground project selection? Please explain.

RESPONSE:

- a. No.
- b. No. While the Company has not performed any type of formal reliability testing, Gulf Power has performed troubleshooting on underground equipment following major events. For example, after the 2014 flood event, equipment was opened, cleaned, and checked before re-energizing the system. The findings following that event were minimal. To date, there have been limited opportunities to capture forensic data pertaining to flooding or other water intrusion events.
- c. Yes. Gulf Power installed submersible switchgear in coastal areas in the 2005-2007 timeframes. While this equipment may have performed better in non-coastal areas, Gulf encountered multiple challenges in coastal areas, with the submersible switchgear in underground vaults. These challenges included inaccessibility, water table issues, and debris/sand filling up the vault. Based on this experience, Gulf will limit the use of submersible equipment in coastal areas and continue to research new products and technologies.
- d. No. To date, Gulf Power has not used undergrounding as a storm hardening mechanism. As Gulf moves forward with possible undergrounding for storm hardening purposes, these types of characteristics will be considered, along with other best practices from across the State.

Deployment Strategies

5. Please refer to page 20. Is Gulf discontinuing its "Wind Monitors" as that were discussed in Gulf's 2016-2018 storm hardening plan but not in the 2019-2021 plan?

RESPONSE:

Gulf Power currently has wind monitoring stations in place across the system. This system of wind monitors was installed as part of the 2007 Storm Hardening Plan. Since that time, the technology and cost of maintaining and upgrading these systems has exceeded their benefit to the Company. Newer technology and third-party services now exist that provide better data, better system coverage, and better tools at a lower cost. Gulf does not have plans to maintain the existing wind monitoring stations on a long term basis.

6. Please refer to pages 20 through 21. Please provide a list of proposed storm hardening projects that Gulf is planning for 2019. Include the type of project and city/county where the project will be located.

RESPONSE:

The following projects are currently in the engineering and planning strategies for 2019. Each of these projects will be implemented using extreme wind loading construction standards as part of the upgrade.

2019 Storm Hardening Projects	City/County
Critical Infrastructure Feeder	Valparaiso
Critical Infrastructure Feeder (2)	Panama City
Coastal Feeder	Panama City Beach
Community Feeder (5)	Escambia County

7. Please refer to page 22. Please clarify the statement about replacing wooden transmission structure with concrete and steel. Is the initiative in the 2016-2018 plan, concerning replacing wooden cross arms with steel cross arms complete or it is part of the new initiative of replacing the whole transmission structure?

RESPONSE:

Gulf Power completed its original program of replacing wooden cross arms and adding additional guying to wooden transmission structures. The transmission project presented in the 2019 – 2021 Storm Hardening Plan is a new initiative to begin the replacement of existing wooden structures on the system with concrete or steel structures. This initiative will be a multi-year project going forward.

8. Please refer to Appendix 4. The actual amount for 2016, 2017, and 2018, average \$26,269,431 per year while the range of the estimate costs for 2019, 2020, 2021 are \$56M to \$95M. Please explain the increase in costs for Gulf's 2019-2021 storm hardening plan compared to its 2016-2018 plan.

RESPONSE:

As a result of Gulf's acquisition by NextEra Energy, Gulf's storm hardening plans and initiatives will more closely align with those of its sister company, Florida Power & Light. Gulf has begun to draw upon the experiences of Florida Power & Light with storm hardening, and the proposed increase in costs reflects Gulf's intent to move toward the construction standards and best practices that have been in place at Florida Power & Light for storm hardening of the distribution and transmission system. The increased costs include changes in distribution construction, which will include implementing the extreme winding loading standard for all new and replacement construction, where feasible. Gulf also plans to increase the number of storm hardening projects across the system on the distribution grid going forward. This increase in the number of projects will improve the storm hardening capabilities of the system and will reduce restoration time following a major event. Another component of the increase in spending is associated with the replacement of wooden structures on the transmission system. This effort is a multi-year, long-term project that will improve the performance of the transmission system and shorten restoration times following major events as experienced during Hurricane Michael in 2018.

Ten Initiatives

9. Please refer to page 9: Vegetation Management. Gulf stated that the pilot program of purchasing vegetation management easements has “met expectations to this point.”
- a. What are Gulf's expectations for the pilot program?
 - b. How has Gulf determined that the expectations for the pilot program have been met so far?
 - c. How many additional miles, if any, of easements is Gulf considering purchasing?

RESPONSE:

- a. Gulf Power's primary expectations for the program are to increase vegetation clearances, improve reliability, and reduce future tree trimming cost. Gulf is also interested in gauging customers' willingness to allow the Company to acquire tree trimming easements on their private property.
- b. Gulf Power has determined that expectations have been met so far by a high percentage of customers that are willing to accept a tree trimming easement and additional vegetation clearing on their property. To date, Gulf has seen approximately a 50% acceptance rate from property owners, and the Company continues to pursue and work with customers in targeted areas. Gulf has experienced only a 20% rejection of initial offers. The level of acceptance by customers constitutes an additional 15 feet of vegetation clearance on mainline distribution feeders affecting 12% of the mainline system, to date. With this high acceptance rate by customers, Gulf now expects to see the long-term benefits of improved reliability and reduced future tree trimming cost for those feeders that have been part of the pilot program.
- c. Gulf Power's long-term plan is to purchase vegetation management easements on all mainline feeders across the system. This would be approximately 650 miles of additional easements combined with the 89 miles that have been purchased and cleared to date. The program could also be extended to lateral lines where there is limited vegetation clearance.

10. Please refer to page 11: Storm Hardening Activities for Transmission Structures.
 - a. Please identify the total number of wooden structures that are a part of Gulf's transmission system.
 - b. Please complete the following table based on the Gulf's program to replace all wooden structures with concrete or steel.

RESPONSE:

- a. Gulf Power currently has 4,817 wooden structures on the transmission system.
- b.

Year	Estimated Number of Wooden Structures to be Replaced
2019	75 – 250
2020	100 – 400
2021	100 - 400

11. Please refer to page 12: Geographic Information System (GIS).
 - a. When will the transition of Gulf's GIS data to the systems utilized by NextEra Energy begin?
 - b. When will the full transition be completed?

RESPONSE:

- a. The transition of Gulf's GIS data to the NextEra Energy systems began in February of 2019.
- b. The transition is presently scheduled for completion at the end of 2020.

12. Please complete the table attached.

RESPONSE:

Please see Attachment A.

Activity	Any change from current plan. (Y/N)	Actual Cost						Estimated Cost								
		2016		2017		2018		2019		2020		2021				
		O&M	Capital	Total	O&M	Capital	Total	O&M	Capital	Total	O&M	Capital	Total			
8-Year Wooden Pole Inspection Program	N	\$460,609	\$1,727,918	\$2,188,527	\$499,860	\$1,959,824	\$2,459,684	\$522,300	\$1,670,778	\$2,193,078	\$792,853	\$2,000,000	\$2,792,853	\$792,853	\$2,000,000	\$2,792,853
10 Storm Hardening Initiatives																
1 A Three-Year Vegetation Management Cycle for Distribution Circuits	N	\$4,640,546	\$0	\$4,640,546	\$6,738,384	\$0	\$6,738,384	\$8,252,564	\$0	\$8,252,564	\$5M - \$6M	\$0	\$5M - \$6M	\$5M - \$6M	\$0	\$5M - \$6M
2 An Audit of Joint-Use Attachment Agreements	Y	\$495,818	\$0	\$495,818	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500,000
3 A Six-Year Transmission Structure Inspection Program	N	\$206,177	\$0	\$206,177	\$323,098	\$0	\$323,098	\$239,644	\$0	\$239,644	\$300,000	\$0	\$300,000	\$300,000	\$0	\$300,000
4 Hardening of Existing Transmission Structures	N	\$0	\$4,772,893	\$4,772,893	\$0	\$2,089,413	\$2,089,413	\$0	\$0	\$0	\$6M - \$13M	\$0	\$6M - \$13M	\$8M - \$21M	\$0	\$8M - \$21M
5 Transmission and Distribution GIS	N	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6 Post-Storm Data Collection and Forensic Analysis	N	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Collection of Denied Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems	N	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Increased Utility Coordination with Local Governments	N	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Research on Effects of Hurricane Winds and Storm Surge	N	\$20,000	\$0	\$20,000	\$20,000	\$0	\$20,000	\$20,000	\$0	\$20,000	\$20,000	\$0	\$20,000	\$20,000	\$0	\$20,000
10 A Natural Disaster Preparedness and Recovery Program	N	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Totals		\$5,362,541	\$4,772,893	\$10,135,434	\$7,081,482	\$2,089,413	\$9,170,895	\$8,512,208	\$0	\$8,512,208	\$5.3M - \$6.3M	\$6M - \$13M	\$11.3M - \$19.3M	\$5.3M - \$6.3M	\$8M - \$21M	\$5.8M - \$27.8M
Distribution Hardening		\$ 129,232	\$ 4,039,839	\$4,169,071	\$ 123,907	\$ 4,990,966	\$ 5,114,873	\$ 64,173	\$ 22,159,692	\$ 22,223,866	\$0.5-\$1.3M	\$30.2-\$36.4M	\$30.7-\$37.7M	\$0.8-\$2.2M	\$31.9-\$43.5M	\$32.7-\$45.7M
Preventative Capital Maintenance		\$0	\$200,204	\$200,204	\$0	\$318,940	\$318,940	\$0	\$379,618	\$379,618	\$0	\$299,587	\$299,587	\$0	\$299,587	
Distribution Automation		\$0	\$6,003,593	\$6,003,593	\$0	\$2,699,210	\$2,699,210	\$0	\$3,039,092	\$3,039,092	\$0	\$10.5-\$14.5M	\$10.5-\$14.5M	\$0	\$2,699,089	
Overall Total		\$5,952,382	\$16,744,447	\$32,696,829	\$7,705,249	\$12,058,353	\$19,763,602	\$9,098,682	\$27,249,181	\$36,347,862	\$6.6-8.0M	\$49.0-\$66.2M	\$5.0-7.4.0M	\$6.9-9.3M	\$56.7-\$5.3M	\$63.6-94.0M
																\$44.9-69.5M
																\$52.3-79.3M

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Review of 2019-2021 storm hardening plan,)
Gulf Power Company)
_____)

Docket No.: 20180147-EI

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing has been furnished by electronic mail this 18th day of April, 2019 to the following:

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