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January 18, 2018

Ms. Carlotta Stauffer, Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee FL 32399-0850

Re: Docket No. 20170215-EU – Review of electric utility hurricane preparedness and restoration actions

Dear Ms. Stauffer:

Attached for electronic filing is Gulf Power Company's response to Staff's Second Data Request in Docket 20170215-EU.

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.  
Florida Public Service Commission  
Wesley Taylor, Office of the General Counsel  
Emily Knoblauch, Division of Engineering

## Underground Facilities

1. For each year, please complete the following tables summarizing the number of miles of transmission and distribution underground facilities by county from 2006 through 2017.

### RESPONSE:

Gulf Power has not converted any overhead transmission line or performed any new underground construction of transmission lines since 2006. At this time, the only non-overhead transmission lines on Gulf's system are two underwater submarine crossings.

The following charts outline the underground construction and conversions on the distribution system. Gulf's system and the data below accurately reflect the total miles of underground primary on the distribution system. However, the systems do not track the overhead to underground conversion data as requested, and that data is an estimate based on available information.

<b>Distribution</b>			
<b>2006</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
<b>Bay</b>	0.0	60.1	327.9
<b>Escambia</b>	0.0	44.1	502.1
<b>Holmes</b>	0.0	0.2	1.6
<b>Jackson</b>	0.0	0.2	2.6
<b>Okaloosa</b>	0.0	52.0	393.4
<b>Santa Rosa</b>	0.0	56.0	372.3
<b>Walton</b>	0.0	0.7	5.4
<b>Washington</b>	0.0	2.1	23.2

<b>Distribution</b>			
<b>2007</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.0	14.7	342.6
Escambia	0.1	8.3	510.5
Holmes	0.0	0.1	1.7
Jackson	0.0	0.0	2.6
Okaloosa	0.0	1.9	395.3
Santa Rosa	0.0	0.0	350.7
Walton	0.0	0.6	6.0
Washington	0.0	0.1	23.3

<b>Distribution</b>			
<b>2008</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	6.1	20.0	368.7
Escambia	0.1	14.2	524.8
Holmes	0.0	0.0	1.7
Jackson	0.0	0.4	3.0
Okaloosa	1.7	6.3	403.2
Santa Rosa	0.9	14.1	365.7
Walton	0.0	0.5	6.5
Washington	0.0	0.9	24.2

<b>Distribution</b>			
<b>2009</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.0	27.7	396.5
Escambia	0.1	6.4	531.3
Holmes	0.0	0.1	1.8
Jackson	0.0	0.2	3.2
Okaloosa	0.1	4.7	408.1
Santa Rosa	0.1	13.9	379.7
Walton	0.0	0.2	6.7
Washington	0.0	0.2	24.3

<b>Distribution</b>			
<b>2010</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.4	13.2	410.1
Escambia	0.0	4.6	535.9
Holmes	0.0	0.0	1.8
Jackson	0.0	0.0	3.3
Okaloosa	0.8	4.7	413.5
Santa Rosa	0.0	10.0	389.6
Walton	0.0	0.2	7.0
Washington	0.0	0.5	24.8

<b>Distribution</b>			
<b>2011</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.0	7.6	417.6
Escambia	0.0	4.6	540.5
Holmes	0.0	0.0	1.8
Jackson	0.0	0.2	3.5
Okaloosa	2.2	5.4	421.1
Santa Rosa	0.0	4.9	394.5
Walton	0.0	0.1	7.1
Washington	0.0	0.1	24.9

<b>Distribution</b>			
<b>2012</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	11.8	0.0	422.0
Escambia	0.4	2.9	543.8
Holmes	0.0	0.0	1.8
Jackson	0.0	0.0	3.5
Okaloosa	0.1	3.2	424.4
Santa Rosa	0.0	4.5	399.1
Walton	0.0	0.1	7.2
Washington	0.0	0.4	25.3

<b>Distribution</b>			
<b>2013</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.3	4.3	426.6
Escambia	0.1	1.3	545.2
Holmes	0.0	0.0	1.8
Jackson	0.0	0.0	3.4
Okaloosa	1.3	1.7	427.3
Santa Rosa	0.1	5.3	404.4
Walton	0.0	0.2	7.4
Washington	0.0	0.5	25.8

<b>Distribution</b>			
<b>2014</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	1.2	3.4	431.2
Escambia	0.1	3.0	548.2
Holmes	0.0	0.0	1.8
Jackson	0.0	0.0	3.4
Okaloosa	0.4	3.1	430.8
Santa Rosa	0.1	2.1	406.6
Walton	0.0	0	7.1
Washington	0.0	0	25.1

<b>Distribution</b>			
<b>2015</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	1.0	4.3	436.6
Escambia	0.1	5.0	553.3
Holmes	0.0	0.0	1.7
Jackson	0.0	0.1	3.5
Okaloosa	0.2	4.0	435.0
Santa Rosa	0.1	7.7	414.3
Walton	0.1	0.1	7.4
Washington	0.0	0.1	25.2

<b>Distribution</b>			
<b>2016</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.0	11.6	448.2
Escambia	0.0	9.1	562.4
Holmes	0.0	0.5	2.2
Jackson	0.0	0.0	3.5
Okaloosa	0.1	4.4	439.5
Santa Rosa	0.5	2.7	417.5
Walton	0.0	0.4	7.7
Washington	0.0	0.2	25.4

<b>Distribution</b>			
<b>2017</b>			
<b>County</b>	<b>Overhead to Underground</b>	<b>New Construction</b>	<b>Total Miles</b>
Bay	0.0	6.5	454.7
Escambia	0.0	17.8	580.2
Holmes	0.0	0.0	2.2
Jackson	0.0	0.5	4.0
Okaloosa	2.1	4.1	445.8
Santa Rosa	0.0	1.4	418.9
Walton	0.0	0.0	7.7
Washington	0.0	0.2	25.5

## **Forensic Data**

2. For Hurricanes Hermine, Matthew, Irma, Maria and Nate, please provide a complete copy of the utility's post-storm forensic review of damaged infrastructure. If a forensic review was not performed or not documented, please explain why.

## **RESPONSE:**

Due to the lack of major storm damage and direct impact from these storms, Gulf Power does not have post-storm forensic data to submit. Gulf was prepared and had partners on the system to collect forensic data following Hermine; however, when the system was not impacted those resources were released to other utilities. Following Hurricane Nate, data was collected on broken poles. This information and pictures were included in Gulf Power's response to Staff's First Data Request, Docket No. 20170215-EU, Item No. 4.

### **Coordination**

3. For Hurricanes Hermine, Matthew, Irma, Maria, and Nate, please provide the name, frequency, and description of non-Emergency Operations Centers related coordination efforts with local governments before, during, and after restoration, including the following:
  - a. Storm preparation
  - b. Critical Infrastructure
  - c. Tree trimming, planting or relocation of trees
  - d. Hardening and underground projects
  - e. Shared facilities
  - f. Other

### **RESPONSE:**

Gulf Power, as part of normal business, meets and works with local government officials on a range of topics including those listed in this question. As part of this being normal business and handled in numerous ways, Gulf Power doesn't memorialize the meetings in a specific location or database to track. District General Managers and/or Local Managers are the primary lead and contact for relationships with governmental agencies (for Non-Emergencies on normal days). These leaders meet with the various groups/agencies in the communities they serve and depending upon the topic and the need, they would request involvement from the different groups within the company to support the need. District General Managers and/or Local Managers are the primary contact for local governmental officials before, during, and after a major weather event.



4. Please complete the following tables on county and state Emergency Operations Centers staffing for Hurricanes Hermine, Matthew, Irma, Maria and Nate.

RESPONSE:

<b>*Staffing for State Emergency Operations Centers</b>		
<b>Number of Utility Personnel</b>	<b>Function</b>	<b>Total Man-Hours</b>
Hermine	ESF-12	87
Irma	ESF-12	161
Nate	ESF-12	62.5

<b>**Staffing for County Operations Center</b>		
<b>Number of Utility Personnel</b>	<b>Function</b>	<b>Total Man-Hours</b>
Irma	ESF-12	38.5
Nate	ESF-12	69.5

\* State: Gulf Power's Service area was minimally impacted by the storms in question, personnel assigned to the State EOC were there in support of the State and other utility restoration efforts. Scheduled staffing for the State EOC is 4 employees.

\*\*County: Gulf Power's Service area was minimally impacted by the storms in question; therefore, not all employees were activated and assigned to county operations. Scheduled staffing for the County EOC's across the company is 16 employees.

## Solar

5. Please provide the following information for utility interconnections with customer-owned solar generation that did not operate as designed and consistent with the tariff during the extreme weather events that occurred in 2015 through 2017.
  - a. The number of failures.
  - b. A description of the cause or causes of such failures.
  - c. Possible failure remediation and associated cost.
  - d. Discuss whether the failures contributed to an increase or decrease in the utility's service restoration time and, if possible, provide an estimate of the duration impact.
  - e. Discuss whether the failures contributed to an increase or decrease in the utility's service restoration costs and, if possible, provide an estimate of the restoration cost impact.

## RESPONSE:

- a. Gulf Power is not aware of any customer-owned solar generation that did not operate as designed and consistent with the tariff during any weather events. By this, the assumption is that "did not operate as designed" means that the units somehow failed in a way that allowed them to back feed and energize the electric distribution grid, create a power quality issue, or cause an unsafe condition.
- b. N/A
- c. N/A
- d. Gulf Power did not see an increase or decrease in restoration time due to customer-owned solar generation.
- e. Gulf Power did not see an increase or decrease in restoration cost due to customer-owned solar generation.

6. Please provide the following information for utility interconnections with customer-owned solar generation that operated as designed and consistent with the tariff during the extreme weather events that occurred in 2015 through 2017.
  - a. Discuss whether these interconnections contributed to an increase or decrease in the utility's service restoration time and, if possible, provide an estimate of the duration impact.
  - b. Discuss whether these interconnections increased or decreased the utility's service restoration costs and, if possible, provide an estimate of the restoration cost impact.

RESPONSE:

By "operating as designed," this means the customer-owned solar generation either shutdown properly or disconnected properly from the electric distribution grid.

- a. Gulf Power did not see an increase or decrease in restoration time due to customer-owned solar generation.
- b. Gulf Power did not see an increase or decrease in restoration cost due to customer-owned solar generation.

7. Without compromising safety, are there changes to the utility's interconnection with customer-owned solar generation that would enable the customer's facilities to be energized by its solar generation should the utility be unable to provide electric service due to a future storm damaging utility infrastructure?
  - a. If yes, please provide the following information:
    - Please describe the suggested changes to the utility's interconnection.
    - If the utility is not pursuing the interconnection changes please explain why.

RESPONSE:

Gulf Power is not aware of any changes that would be required on the utility side of the interconnection with customer-owned solar generation that would enable the customer's facilities to be energized by its solar generation during a power outage. However, there would have to be significant changes made on the customer side of the interconnection as described in the response to Item No. 8 to allow for the customer's facilities to be energized by its solar generation and provide for the safety of our employees, the customer, and the public.

8. Without compromising safety, please describe potential changes to a customer's facilities that the customer can implement to enable the customer's facilities to be energized by its solar generation should the utility be unable to provide electric service due to a future storm event that damages utility infrastructure. Include in your response whether the utility makes it a practice to inform the customer of such options.

RESPONSE:

For customer-owned solar generation to power the customer's facilities during a power outage, the customer would have to install two major pieces of equipment that are not required for a simple utility-interactive solar generator. A customer would need a grid independent source that has the ability to create a 60Hz frequency that would only operate when the utility is disconnected. The customer would also need to install a full load disconnect or automatic transfer switch between the customer premise and the utility. The automatic transfer switch would be similar to that which is required for customers that install a whole-house backup generator powered by non-solar sources. Some solar generation customers have installed this additional equipment that allows their facility or portions of their facility to be powered during an electric grid interruption.

Gulf does inform customers that without the installation of this additional equipment their solar installation will not provide backup power during an electrical outage.

9. Without compromising safety, please describe any potential changes to rules or tariffs pertaining to utility interconnections with customer-owned solar generation that would enable the customer's facilities to be energized by its solar generation should the utility be unable to provide electric service due to a future storm event that damages utility infrastructure.

RESPONSE:

Gulf Power is not aware of any required changes to rules or the tariff that would allow customer-owned solar generators to energize the customer's facilities during an interruption to the electric grid.

10. Please provide the following information for utility interconnections with utility-scale solar generation that did not operate as designed during the extreme weather events that occurred in 2015 through 2017.
  - a. The number of failures.
  - b. A description of the cause or causes of such failures.
  - c. Possible failure remediation and associated cost.
  - d. Discuss whether the failures contributed to an increase or decrease in the utility's service restoration time and, if possible, provide an estimate of the duration impact.
  - e. Discuss whether the failures contributed to an increase or decrease in the utility's service restoration costs and, if possible, provide an estimate of the restoration cost impact.

RESPONSE:

- a. Gulf Power did not experience any failures of utility-scale solar generation interconnections due to extreme weather events in 2015 through 2017.
- b. N/A
- c. N/A
- d. N/A
- e. N/A

11. Please provide the following information for utility interconnections with utility-scale solar generation that operated as designed during the extreme weather events that occurred in 2015 through 2017.
  - a. Discuss whether these interconnections contributed to an increase or decrease in the utility's service restoration time and, if possible, provide an estimate of the duration impact.
  - b. Discuss whether these interconnections increased or decreased the utility's service restoration costs and, if possible, provide an estimate of the restoration cost impact.

RESPONSE:

- a. Refer to response to Staff's Second Data Request, Item No. 10. No failures of utility-scale solar generation interconnections occurred in 2015 through 2017 due to extreme weather events. In general, utility-scale solar interconnections have no different effect on restoration times than traditional generating resources.
- b. Refer to response to Staff's Second Data Request, Item No. 10. No failures of utility-scale solar generation interconnections occurred in 2015 through 2017 due to extreme weather events. In general, utility-scale solar generation interconnections have no different restoration costs than comparable traditional generation interconnections.



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 18th day of January, 2018 to the following:

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