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Public Service Commission

March 28, 2019

Mr. James D. Beasley, Esq.
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STAFF'S THIRD DATA REQUEST

RE: Docket No. 20180145-EI – Review of 2019-2021 storm hardening plan, Tampa Electric Company.

Dear Mr. Beasley,

By this letter, the Commission staff requests that Tampa Electric Company (TECO or Utility) provide responses to the following data requests.

Please refer to TECO's storm hardening plan that was filed in Docket No. 20180145-EI.

National Electrical Safety Code (NESC) compliance

1) Please refer to page 18.

   a. What NESC construction grade does TECO use for its distribution and transmission facilities?

   b. Does TECO use the same NESC construction grade for new construction as it does for replacement?

   c. Does TECO design all facilities, including transmission lines, distribution lines, supply lines, conductors and supporting structures in compliance with the 2017 NESC construction grade B or C and rule 250C?

Extreme Wind Loading (EWL) Standards

2) Please refer to page 18. As indicated on page 20 TECO's service territory is divided into two wind regions, the western half is in the 120 mph zone and the eastern half is in the 110 mph zone per Figure 250-2(d) of the 2017 NESC. Table 250-1 of the 2017 NESC indicates that for extreme wind loading (for use with Rule 250C) figure 250-2 should be used to find the extreme wind loading. For 110 mph and 120 mph the corresponding wind

pressure is approximately 32 lb/ft^2 and 37 lb/ft^2 respectively. Why is TECO using 9 lb/ft^2 which is the wind pressure to use to comply with Rule 205B instead of the recommended entry per Table 250-1 (column titled: "Extreme wind loading (for use with Rule 250C))?

3) Please refer to page 19.

   a. Why does TECO consider 116 mph as the effective wind speed for construction grade B? Please explain your answer as well as any calculations.

   b. What is the size (height, diameter at ground line, length, and type of wood) of a wood pole designed to withstand the extreme wind load associated with the 110 mph and 120 mph as specified by Figure 250-2?

4) Please refer to page 20. Per Rule 241B the order of construction grades is B, C, and N, with grade B being the highest. What is NESC construction Grade B – Light?

5) Please refer to page 24.

   a. Please explain why TECO considers the NESC construction Grade B to be 87 percent stronger than the NESC construction Grade C?
   b. Is TECO installing poles designed to withstand an effective wind speed of 116 mph using construction grade B within the 120 mph zone?

6) Please provide the height of TECO's transmission and distribution wood poles?

7) What version of PoleForeman does TECO use to design its distribution and transmission facilities?

   a. Does PoleForeman comply with the 2017 NESC?

   b. Does the software's operator need to know the 2017 NESC code to enter the correct information into PoleForeman? Example: Input the correct Basic Wind Speed as specified by Figure 250-2 of the 2017 NESC into the software.

Mitigation of Flooding and Storm Surge Damage

8) Please refer to page 28.

   a. Has TECO 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 TECO 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 TECO learned any lessons from previous underground projects? If yes, please explain the lessons learned.

d. Does TECO consider the terrain's characteristics, soil consistency, historical data and FEMA flooding maps when selecting the Storm hardening underground project selection? Please explain.

Deployment Strategies

9) Please refer to pages 41 to 42.

a. Please explain why the average miles of new distribution overhead went from 67 miles in the 2016-2018 storm hardening plan to 106 miles in the 2019-2021 storm hardening plan.

b. Please explain why the average miles to construct, rerate or rebuild transmission overhead lines went from 90 miles in the 2016-2018 storm hardening plan to 41 miles in the 2019-2021 storm hardening plan.

10) Please refer to page 44. Please explain why TECO is planning to perform 1,750 transmission groundline inspection for 2019 through 2021, when the Utility planned 3,200 inspections for 2016 through 2018.

11) Please refer to page 46. Please explain why TECO is planning to perform 9,670 transmission above ground inspections for 2019 through 2021, when the Utility planned 3,200 inspections for 2016 through 2018.

12) Please refer to page 47.

c. Please explain why TECO is planning to harden 120 transmission structures in 2019 when the Utility planned 600 structures in 2016.

d. What type of hardening will be performed on the 120 transmission structures (pole or insulators replacements)?

13) Please refer to page 49.

e. How many Interstate Highway crossings have been converted from overhead to underground facilities?

f. How many Interstate Highway crossings are left to be converted?

14) Please refer to page 50. How many "other hospitals" does TECO have current plans to install the switchgear?

15) Please refer to page 51.

    g. Is the ADMS operational?

    h. How many AMIs have been installed?

    i. How many AMIs per year is TECO planning to install in 2019, 2020, and 2021?

Ten Initiatives

16) Please refer to pages 10 and 11: Joint Use Pole Attachment Audit. Is TECO's joint use audit only in conjunction with its wooden pole inspection program?

17) Please refer to page 13: Geographic Information System. Please explain why there are no incremental costs for the Hardening of Existing Transmission Structures.

18) Please refer to page 12 of TECO's 2019-2021 storm hardening plan, and page 11 of TECO's 2016-2018 storm hardening plan. Please explain why the number of transmission poles and structures decreased from 25,400 for 2016-2018 to 24,600 for 2019-2021.

19) Please refer to page 14: Post-Storm Data Collection. How was the incremental cost of $113,000 per storm for Post-Storm Data Collection estimated?

20) Please refer to page 15: Outage Data - Overhead and Underground Systems. How was the incremental cost of $100,000 per storm for Outage Data - Overhead and Underground Systems estimated?

21) Please refer to page 16 of TECO's 2019-2021 storm hardening plan, and page 15 of TECO's 2016-2018 storm hardening plan. Please explain why in 2018, TECO signed an extension of the memorandum of understanding with PURC for two years, rather than three years, as was done in 2015.

22) Please refer to page 18 of TECO's 2019-2021 storm hardening plan, and page 18 of TECO's 2016-2018 storm hardening plan

    j. Please explain in detail how the Damage Assessment tool will be utilized.

    k. In TECO's 2016-2018 storm hardening plan, the TECO stated that a Damage Assessment tool would be implemented by June 2017. TECO's current estimate is a Damage Assessment tool will be implemented in 2021. Please explain why there was a delay in the implementation date.

23) Please complete the table attached.

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	O&M	Capital	Total	O&M	Capital	Total
8-Year Wooden Pole Inspection Program																				
10 Storm Hardening Initiatives																				
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	Transmission and Distribution GIS																			
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 **																			
Totals																				
Any Other Key Elements or Proposed Initiatives																				

*Please explain any changes from the current plan
** Please provide a copy of the disaster plan

Please file all responses electronically no later than Thursday, April 18, 2019, on the Commission's website at www.floridapsc.com by selecting the Clerk's Office tab and Electronic Filing web Form. Please contact me at (850) 413-6228 or Penelope Buys at (850) 413-6518 if you have any questions.

Sincerely,

Jennifer Crawford

Jennifer Crawford, Esq.
Office of the General Counsel

JSC/lms

cc: Office of Commission Clerk