State of Florida

Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

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

DATE: November 13, 2014

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Engineering (C. Lewis)
Office of the General Counsel (Mapp, Crawford)

RE: Docket No. 140122-EI – Petition to modify transmission structure inspection cycle, by Tampa Electric Company.

AGENDA: 11/25/14 – Regular Agenda – Proposed Agency Action - Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Brown

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

Case Background

On February 27, 2006, the Florida Public Service Commission (Commission) ordered each electric Investor-Owned Utility (IOU) to implement an eight-year wood pole inspection cycle and submit annual reports.[1] This came about in response to damage sustained by Florida's electric infrastructure during the 2004 and 2005 hurricane seasons. Realizing the order ". . . did not address the full inspection of all transmission poles, towers, and other line supporting structures," the Commission issued a subsequent order stating, "[t]he transmission inspection

[1] See Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 060078-EI, In re: Proposal to Required Investor-Owned Electric Utilities to Implement a Ten-Year Wood Pole Inspection Program.

plan cycle shall be based on achieving at least a six-year inspection cycle for the portions of the transmission infrastructure not already addressed" by the previous order.[2]

On June 5, 2014, Tampa Electric Company (TECO) filed a petition seeking approval to deviate from the current transmission structure inspection cycle requirements of Order No. PSC-06-0351-PAA-EI. Specifically, TECO wants to move from the approved six-year inspection cycle to an eight-year cycle for all pole inspections. Annual ground patrols, aerial infrared patrols, and substation inspections will not be affected by this request.

The Commission has jurisdiction pursuant to Sections 366.04 and 366.05, Florida Statutes (F.S).

[2] See Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

Discussion of Issues

Issue 1: Should TECO be allowed to modify its Transmission Structure Inspection Cycle from a six-year cycle to an eight-year cycle for transmission poles?

Recommendation: Yes. Since many repairs and replacements have been performed during the first complete cycle, increasing the transmission structure inspection cycle from six to eight years does not appear to be a detriment to overall system reliability. The projected savings are $108,000 per year. Therefore, staff recommends that TECO should be allowed to increase its transmission structure inspection cycle from six to eight years. (C. Lewis)

Staff Analysis: As part of the on-going Storm Hardening Initiatives, the Commission found transmission inspection practices varied widely among the electric Investor Owned Utilities (IOUs) and were not adequate to prepare for future storms. A June 2005 staff audit of TECO's transmission inspection program noted that TECO performed few, if any, pole inspections from 2000 to 2003.[3] As such, the Commission ordered each IOU to develop a plan for fully inspecting all transmission towers and other transmission line supporting equipment such as insulators, guying, grounding, conductor splicing, cross-braces, cross-arms, bolts, etc. The transmission inspection plans were to be based on achieving at least a six-year inspection cycle for the portions of the transmission infrastructure not already addressed in prior Commission orders. All substations, capacitor stations, relay stations, and switching stations were to be included in the transmission inspection plan because of the critical nature of these facilities. On September 19, 2006, TECO's six-year transmission inspection cycle plan was approved.[4]

TECO is requesting to extend the inspection cycle from six-years to eight-years for transmission poles only. Currently, under the six-year above ground transmission inspection protocol, TECO inspects an average of 4,287 transmission structures per year. Under the proposed eight-year inspection cycle, the utility projects an average of 3,216 transmission structure inspections per year. TECO reports it has replaced approximately 5,200 wood transmission poles with non-wood poles during the previous six years. This has increased the percentage of non-wood poles in its electric grid from 40% in 2006 to approximately 63% today. In addition, TECO has made repairs and infrastructure improvements to comply with requirements of the North American Electric Reliability Corporation (NERC).[5] Additionally, the rights-of-way for 230 kv transmission lines have been widened to meet the vegetation clearance requirements of NERC.

Based on data provided by TECO, there were sixty-five transmission service outages from 2006 to 2013. The majority of outages during the first inspection cycle were the result of

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[3] See Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

[4] See Order No. PSC-06-0781-PAA-EI, issued September 19, 2006, in Docket No. 060198-EI, In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.

[5] See Document No. 03780-14, issued January 7, 2011, North American Energy Reliability Corporation – Compliance Notice. The NERC ordered all electric providers to identify all discrepancies between the design and actual field conditions that are outside the registered entity's design tolerances and report those discrepancies. TECO's remediation cost to meet the NERC approved design specifications is approximately 9.2 million dollars.

damage to lightning arrestors and static wires caused by lightning strikes. Only two of the structural outages were due to pole failures, one occurring in 2011 and the other in 2012. The majority of the structural outages occurred from 2006 to 2008 and were caused by failed cross-arms.[6] Since August 2008, outages due to failed cross-arms have almost disappeared indicating that the problems were identified and resolved expeditiously system-wide.

TECO's petition notes that "due to the maintenance activity stemming from the inspection protocols identified above, the System Average Interruption Duration Index (SAIDI) value for preventable transmission outages from 2006-2013 has averaged 1.82 minutes per year." SAIDI is a measure of the outage duration of an IOU's electric grid. It is calculated by summing all customer minutes of service outages and dividing by the total number of customers served on a system. TECO states the SAIDI of its transmission operations have a "low impact" when compared to its distribution system.[7] Staff agrees, and that is why SAIDI is included as one of many metrics in the annual distribution reliability reports. Transmission SAIDI is not a determining factor of how structures will stand up against hurricanes or major storms, which is the focus of the Commission's Storm Hardening Initiatives.

TECO believes that "aligning the above ground transmission structure and ground line inspections to the same eight-year inspection cycle will provide efficiency gains in the overall inspection scheduling process as well as data integration." The projected annual savings of $108,000 would be used to fund a software upgrade to TECO's State Estimator Model.[8] TECO will continue to conduct ground patrols, aerial infrared patrols, and substation inspections annually.

Conclusion

Since many repairs and replacements have been performed during the first complete cycle, increasing the transmission structure inspection cycle from six to eight years does not appear to be a detriment to overall system reliability. The projected savings are $108,000 per year. Therefore, staff recommends that TECO should be allowed to increase its transmission structure inspection cycle from six to eight years.

[6] See Document No. 04286-14, p. 4
[7] See Document No. 02783.14, Item 7, p. 3
[8] See Document No. 02783.14, Item 14. Beginning in 2015, TECO will further optimize its State Estimator model in its Energy Management System to provide better situational awareness to its Energy System Operators to ensure safe and reliable operation of the BES or Bulk Electric System. This will improve operator performance for various system conditions and ensure the continued safe and reliable operation of Tampa Electric's transmission system.

Issue 2: Should this docket be closed?

Recommendation: Yes. If no person whose substantial interests are affected by the proposed agency action files a protest within 21 days of the issuance of the order, this docket should be closed upon the issuance of a consummating order. (Mapp, Crawford)

Staff Analysis: If at the conclusion of the 21 day protest period, no person whose substantial interests are affected by the proposed agency action has filed a protest, this docket should be closed upon the issuance of a consummating order.