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PUC DOCKET NO. 35994

**APPLICATION OF ELECTRIC
TRANSMISSION TEXAS, LLC
FOR REGULATORY APPROVALS
RELATED TO INSTALLATION
OF A SODIUM SULFUR BATTERY
AT PRESIDIO, TEXAS**

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**PUBLIC UTILITY COMMISSION
of TEXAS**

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PUBLIC UTILITY COMMISSION
FILING CLERK

ORDER

This Order addresses Electric Transmission Texas, LLC's (ETT's) application for regulatory approvals related to an installation of a sodium sulfur (NaS) battery at Presidio, Texas. For the reasons discussed in this Order, the Commission approves ETT's application subject to the limitations contained in this Order.

I. Background

Presidio is located on the Rio Grande River in a remote area of West Texas near Big Bend National Park, at the end of a 60-mile radial transmission line from Marfa that was built in 1948. Presidio's only other power source is the Mexican national utility, Comisión Federal de Electricidad (CFE). CFE cannot supply Presidio's peak load, and because CFE is not synchronized with the ERCOT grid, service must be interrupted to transfer Presidio load to CFE and again to transfer it back to ERCOT.

The line has experienced numerous momentary outages and longer-term outages during the 2001-2006 timeframe, primarily caused by lightning and resulting damage to structures, as well as a high number of poor voltage service events. Based on ERCOT's analysis, voltage at Presidio is projected to fall below the voltage threshold for contingency conditions in 2009.

To improve service to Presidio, American Electric Power Service Corporation (AEPSC), ETT's service provider, developed the Presidio Area Reliability Improvements Project, which consists of: 1) installation of an NaS battery at Presidio; 2) installation of

a second autotransformer at Marfa; and 3) replacement of the existing transmission line from Marfa.

The battery is expected to be located at the edge of Presidio and connected to the distribution bus of the load-serving substation. Since the battery is on the distribution bus, a line outage would not interrupt the connection between the battery and the Presidio load. The battery would automatically discharge to supply power to the available load during an outage of the line to Marfa. Upstream loads on the line could be supplied power from the battery once the failed section of the line is isolated. The battery also functions as a reactive device that will perform a transmission function by providing voltage control and reactive power support needed for the operation of the transmission system.

Due to the first-of-its-kind nature of this installation in Texas, ETT filed its application requesting Commission confirmation that ETT's proposed installation of a 4.8-MW NaS battery at Presidio complies with Texas law and will be a transmission asset eligible for inclusion in the Company's transmission cost of service (TCOS). ETT requested expeditious consideration by the Commission of this application so that the Company could acquire and install the battery by the summer of 2009. In the interest of minimizing any delays, the application was not referred to SOAH.

II. Discussion

In addition to ETT's request for a regulatory determination that the proposed installation of a 4.8 MW NaS battery at Presidio complies with Texas law and will be a transmission asset eligible for inclusion in the Company's TCOS, ETT originally proposed to conduct a study concerning utility-scale battery storage, and requested the opportunity to recover reasonable study costs in a future proceeding not to exceed \$250,000. ETT also asked the Commission to find that the useful life of the NaS battery is fifteen years, for depreciation purposes. The ALJ dismissed, on motion, ETT's request for regulatory approval for the utility-scale battery storage study costs and the fifteen-year, useful-asset life of the battery.

No party offered opposing evidence to ETT's rendition of Presidio's reliability history or ERCOT's conclusions regarding deficiencies in transmission contingency conditions in the past, present, or future. Similarly, none of ETT's assertions about the technical merits of NaS battery technology or the potential benefits for Presidio of using the NaS battery were challenged by the parties by way of controverting evidence. All parties waived cross-examination of live witnesses and requested that the Commission reach a decision on the merits based upon the written evidence and argument. The only genuine issue requiring decision by the Commission is one of classification: Is the NaS battery appropriately treated as a transmission asset and eligible for TCOS rate treatment?

Intervenor Texas Industrial Energy Customers (TIEC) asserts that the requested regulatory approval should be denied because the NaS battery is a generation asset, not a transmission asset. The Commission finds that the battery does not generate electric power by converting another source of energy into electricity; therefore, it cannot be a generation asset, which would preclude it from constituting a transmission asset. Even though the battery does produce real power when it is discharged, without power from the grid, the battery does not remain charged. Therefore, the manner in which ETT proposes to operate the battery provides reliability service rather than power for commercial sales, the hallmark of a generation asset.

Commission Staff agrees that the NaS battery is not a generation asset but asserts that the Commission should deny ETT's request to classify the entire NaS battery system as eligible for TCOS. Commission Staff asserts that the proposed battery should receive a split-rate treatment because only the reactive-power portion of the battery is a transmission facility and eligible for recovery in TCOS under P.U.C. SUBST. R. 25.192(c)(1)(D) while the back-up service portion of the battery providing transmission at distribution voltage is a distribution facility that must be recovered in a separate wholesale transmission rate schedule under which American Electric Power Texas North Company would be a customer.

The Commission finds that ETT's proposed use of the NaS battery is appropriate for a transmission utility because the battery system provides benefits associated with transmission service operations, including voltage control, reactive power, and enhanced

reliability. The Commission rejects the proposition that the back-up function of the battery is a service of the type governed by a tariff for wholesale transmission at distribution voltage. Therefore, the Commission concludes that ETT's proposed NaS battery installation complies with Texas law and is eligible for inclusion in TCOS.

Additional issues raised by the parties are either premature or they are tangential to the issue presently before the Commission. The State of Texas and TIEC both moved to dismiss ETT's application in accordance with P.U.C. PROC. R. 22.181(a) asserting that the Commission lacks jurisdiction to grant the requested regulatory approval due to the recent judgment of a district court¹ (which reversed the Commission's granting of a certificate of convenience and necessity (CCN) to ETT for certain transmission facilities), ETT's application is moot, and ETT's application merely seeks an advisory opinion. In Order No. 11, ALJ Kang denied TIEC's and the State of Texas's motions to dismiss and none of the rulings in that order were timely appealed. The State of Texas (joined by TIEC) posits that by virtue of the trial court's holding in *Cities of Harlingen* that the Commission "exceeded its statutory authority in granting a CCN to ETT, a transmission-only utility without a service area," and because that order is binding upon the Commission, the Commission is prohibited from granting ETT's application in this docket. The Commission finds, irrespective of the holding in *Cities of Harlingen*, which is on appeal, that no issue in *Cities of Harlingen* is being re-litigated in this docket; therefore, it does not limit or preclude the Commission's jurisdiction in considering ETT's application.

TIEC contends that ETT's proposed NaS battery installation requires a CCN and that the CCN is a precursor to the regulatory classification sought by ETT. The Commission determines that it need not and will not reach the merits of TIEC's position for the reason that it is premature and irrelevant as ETT is not seeking Commission approval in this docket to install or operate the NaS battery.

ETT's original application for declaratory relief did not seek a determination of reasonableness and prudence of the NaS battery solution to the Presidio reliability

¹ *Cities of Harlingen et al v. Public Utility Commission of Texas*, No. D-1-GV-08-000253 (345th Dist. Ct., Travis County, Tex. Oct. 8, 2008)

problem, nor did ETT ever amend its application to do so. Commission Staff raised the reasonableness and prudence issue in this proceeding to support its contention that PURA mandates that a finding of reasonableness or necessity is a precursor to classifying the NaS battery as eligible for subsequent treatment as TCOS. However, ETT's only request for a Commission determination of reasonableness and prudence of the NaS battery solution was contained in its reply brief filed after the hearing date and after admission of evidence. The ALJ denied ETT's "request" for a determination of reasonableness and prudence as untimely and prejudicial. ETT sought an appeal of this ruling that the Commission declined to hear. Making the additional determination of reasonableness and prudence of the selection of the NaS battery, as suggested by Commission Staff, is within the province of a CCN proceeding or ratemaking analysis. More importantly, the Commission need not reach the merits of the reasonableness and prudence of the NaS battery solution to ascertain if the battery qualifies as eligible for TCOS treatment at a later date.

Finally, the parties asserted contradictory positions on the precedential impact of a Commission finding classifying ETT's proposed NaS battery at Presidio as eligible for TCOS in terms of future battery regulatory classifications. The Commission's decision to classify ETT's proposed NaS battery as a transmission asset is based upon electric reliability facts that are unique to Presidio, Texas, as set forth in the findings of fact in this Order. The Commission's regulatory analysis in another application or location for the same or similar battery device may not necessarily result in a regulatory classification as a transmission asset.

The Commission adopts the following findings of fact and conclusions of law:

III. Findings of Fact

Procedural History

1. On August 12, 2008, ETT filed an application with the Public Utility Commission of Texas (Commission) for regulatory approvals related to an installation of a sodium sulfur (NaS) battery at Presidio, Texas.
2. The regulatory approvals sought by ETT included whether the proposed battery application at Presidio complies with Texas law and will be a transmission asset

eligible for inclusion in the company's transmission cost of service (TCOS); and for the future recovery of reasonable costs, not to exceed \$250,000, for a study concerning utility-scale battery storage and that the useful life of the NaS battery for depreciation purposes is 15 years.

3. ETT provided notice of this proceeding, as shown in ETT's proof of notice filed on September 29, 2008.
4. TIEC was granted intervention on September 24, 2008.
5. Reliant Energy Retail Services, LLC was granted intervention on October 1, 2008.
6. The State of Texas, PSEG Texas, LP, Concerned ERCOT Market Participants (consisting of International Power America, NRG Texas LLC, and Exelon Generation "Power Team"), and Oncor Electric Delivery Company, LLC were granted interventions on October 13, 2008.
7. Order No. 7 established the procedural schedule, including a hearing on the merits by the Commission on December 16, 2008.
8. On October 29, 2008, the State of Texas filed its motion to dismiss all of ETT's requests for regulatory approvals in its application or, in the alternative, abate the proceeding in accordance with P.U.C. PROC. R. 22.181(a) for three reasons: that the Commission lacks jurisdiction due to a recent judgment of the 345th District Court of Travis County, Texas, in Cause No. D-1-GV-08-000253, *Cities of Harlingen v. Public Utility Commission of Texas*; because ETT is not an electric utility (based upon the same district court order in *Cities of Harlingen*) and therefore its petition has become moot or obsolete pursuant to P.U.C. PROC. R. 22.181(a)(1)(B); and ETT's application fails to state a claim for which relief can be granted pursuant to P.U.C. PROC. R. 22.181(a)(1)(G) for the reason that ETT's application is actually a request for several advisory opinions.
9. TIEC filed its motion to dismiss ETT's application on the same grounds as the State of Texas.

10. On November 19, 2008, the ALJ in Order No. 11 denied TIEC's and the State of Texas's motions to dismiss with respect to the battery classification issue, but granted the motions regarding ETT's requests for regulatory approvals for the study costs and for a determination of a useful asset life for the NaS battery.
11. None of the rulings in Order No. 11 were timely appealed.
12. On January 14, 2009, ETT, Commission Staff, TIEC, the State of Texas, PSEG Texas, LP, Oncor Electric Delivery Company, LLC, and Concerned ERCOT Market Participants jointly filed their Agreed Waiver of Cross-Examination.
13. Order No. 16 set a post-hearing briefing schedule and admitted into evidence ETT Exhibits 1 to 6, Staff Exhibits 1 and 2, State Exhibits 1 and 2, Concerned ERCOT Market Participants Exhibits 1 and 2, and Parties' Exhibits 1 to 21.
14. Based upon the parties' waiver of cross examination, Order No. 18 cancelled the Commission hearing in this docket scheduled to begin at 11:00 a.m. on January 23, 2009.
15. Oncor withdrew as an intervenor from this proceeding on January 28, 2009.
16. ETT's original application for regulatory approval did not seek a determination of reasonableness and prudence of the NaS battery as a solution to the Presidio reliability problem, nor did ETT amend its application to request a finding of reasonableness and prudence.
17. On February 3, 2009, subsequent to the submission of all evidence and the parties' waiver of the Commission hearing date, ETT requested, in its reply brief, a Commission determination of the reasonableness and prudence of the NaS battery.
18. Commission Staff requested that the Commission deny ETT's request for a determination on the reasonableness and prudence of the installation of the NaS battery system. The State of Texas joined in Staff's motion and moved to strike the reply brief portions that contained the request.
19. On February 20, 2009, the ALJ denied the State of Texas's motion to strike portions of ETT's reply brief; however, the judge also ruled that because ETT did

not request a reasonableness or prudence determination until its January 27, 2009 reply brief, the request did not comport with P.U.C. PROC. R 22.76 and was disallowed.

Presidio Electric Reliability

20. Presidio is located on the Rio Grande River in a remote area of West Texas near Big Bend National Park, at the end of a 60-mile radial transmission line from Marfa, Texas that was built in 1948.
21. Presidio's only other power source is the Mexican national utility, Comisión Federal de Electricidad (CFE). CFE cannot supply Presidio's peak load, and because CFE is not synchronized with the ERCOT grid, service must be interrupted to transfer Presidio load to CFE and again to transfer it back to ERCOT.
22. The line has experienced 247 momentary outages and nine longer-term outages during the 2001-2006 timeframe, primarily caused by lightning and resulting damage to structures. During the summer of 2007, Presidio experienced 81 poor voltage service events during a two-month test.
23. Based on ERCOT's analysis, voltage at Presidio is projected to fall below the AEPSC voltage threshold for contingency conditions in 2009.
24. In 2009, based on AEPSC's analysis, there is projected to be an 8.5% voltage drop from Marfa to Presidio, resulting in substandard voltage at peak load conditions absent any line outage.
25. AEPSC projects that due to Presidio's load growth, age, and design of the current line, voltage in Presidio will not meet applicable planning criteria going forward.
26. To address reliability and power quality problems at Presidio, AEPSC, ETT's service provider, proposed the Presidio Area Reliability Improvements Project, which consists of: 1) installation of an NaS battery at Presidio (with an estimated cost of \$15 million); 2) installation of a second autotransformer at Marfa (with an estimated cost of \$4 million); and 3) replacement of the existing transmission line in 2012 (with an estimated cost of \$48 million).

27. Installation of an NaS battery at Presidio is expected to resolve these reliability and power quality issues.
28. No party offered opposing evidence to ETT's rendition of Presidio's reliability history.
29. No party offered opposing evidence to ERCOT's conclusions regarding deficiencies in transmission contingency conditions in the past, present, or future.
30. No party offered opposing evidence to ETT's prediction that installation of an NaS battery at Presidio is expected to resolve these reliability and power quality issues.

NaS Battery Technology

31. NaS batteries are high capacity battery systems that have been developed for electric power applications.
32. Unlike any other battery, the NaS battery has significant utility-scale operating history. The NaS battery has now operated in Japan for ten years without significant deterioration of its cycling capacity.
33. American Electric Power (AEP) pioneered the use of the NaS battery in the United States through several previous projects.
34. In 2005, AEP installed the first commercial utility use of the NaS battery in the United States, a 1.2-MW installation at an Appalachian Power Company substation in Charleston, West Virginia.
35. The 4.8-MW installation at Presidio will be the largest NaS battery in the United States to date.
36. None of ETT's testimony as to the technical merits of NaS battery technology was controverted.

Benefits of the NaS Battery

37. Based on the Presidio battery's anticipated charge and discharge cycle, the battery is expected to operate for just over 15 years.

38. The discharge cycle of the NaS battery will enable it to supply power continuously over an eight-hour period.
39. The battery will provide voltage regulation to address voltage drop along the radial line into Presidio.
40. The battery will allow replacement of the 69-kV line to Presidio to be deferred for two years.
41. Due to its quick response, the battery will address voltage fluctuations and momentary outages that have been a major concern in Presidio.
42. In the event of an outage on the radial transmission line, the battery can supply over 4 MW of uninterrupted power in Presidio for up to eight hours before its output is consumed.
43. The battery will allow Presidio to be block transferred to service from CFE and back to ERCOT without outages.
44. The battery will allow the transmission line into Presidio to be taken out of service for maintenance without loss of service to customers.
45. None of ETT's testimony as to the NaS battery's technical functionality and benefits for Presidio electric reliability was controverted.

Propriety of ETT's Battery Ownership

46. The NaS battery will be located in a new substation in the Presidio area.
47. By agreement of ETT, the inflows and outflows from ETT's NaS battery will be metered and posted on ETT's website and updated at least annually.
48. AEPSC submitted a protocol revision request that will clarify that energy flows associated with charging and discharging the battery will be treated like substation equipment and as a result, will not be measured for settlement purposes.
49. In conformity with ETT's application, under ETT's Presidio Reliability Improvement Project, ETT will not buy, sell, or take title to the unmetered, unaccounted-for energy stored in the NaS battery.

50. The battery will continue to provide benefits to the Presidio area after the transmission line from Marfa to Presidio is replaced. ETT has committed that while it has no plans to move the battery, if it were moved and used in a similar manner in ERCOT, ETT would continue to include it in TCOS. Further, ETT has assured the Commission that if the NaS battery were moved so that it no longer provided transmission service in ERCOT, ETT would make an appropriate reduction to its TCOS.
51. The proposed uses of the battery by ETT are appropriate for a transmission utility because they provide benefits associated with transmission service operations, including voltage control, reactive power, and enhanced reliability.

Regulatory Classification of the NaS Battery

52. The NaS battery's source of energy is power from the electric grid from which it stores and to which it later discharges.
53. The NaS battery does not generate electric power by converting another source of energy, such as wind, natural gas, etc. into electricity.
54. Without power from the grid, the battery does not remain charged.
55. ETT's proposed NaS battery is not a generating facility.
56. The NaS battery is a reactive device that will perform a transmission function by providing voltage control and reactive power support needed for the operation of the transmission system.
57. The NaS battery is a reactive device, will operate at a voltage below 60 kV, and will be located in a distribution substation with a power factor in excess of 0.95 as measured or calculated at the distribution voltage level without the battery.
58. There are two main components of the NaS battery installation—the power converter system and the battery.
59. Both the power converter system and the battery function are required to provide real and reactive power.

III. Conclusions of Law

1. The Commission has jurisdiction over this application under PURA §§ 14.001, 14.051, 35.004(e), 36.001(a), 36.055, 38.001, 38.002, and 38.003.
2. The Commission has authority to issue a declaratory order under PURA § 11.003(13).
3. ETT's NaS battery meets the definition of transmission service as set forth in PURA § 31.002(20); therefore, ETT may lawfully own and operate the device.
4. ETT's request for regulatory approval is consistent with that of a transmission and distribution utility established under PURA § 39.105.
5. ETT's NaS battery meets all the requirements for transmission service as set forth in P.U.C. SUBST. R. 25.192(c)(1)(D).
6. The NaS battery installation would be a transmission asset that supports the reliability of the transmission system.
7. ETT's proposed NaS battery installation is not properly characterized as a distribution asset used in providing wholesale transmission service at distribution level that are properly included in a separate rate and charged only to transmission customers using that service pursuant to P.U.C. SUBST. R. 25.191(d)(2).

IV. Ordering Paragraphs

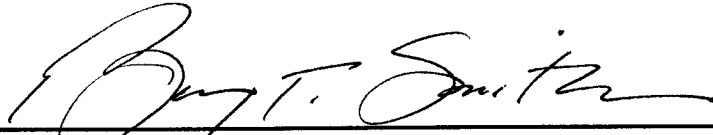
In accordance with these findings of fact and conclusions of law, the Commission issues the following order:

1. The application by ETT to the Commission for regulatory approvals related to an installation of a sodium sulfur (NaS) battery at Presidio, Texas is granted.
2. This case is not precedential with respect to any subsequent application, proceeding, or process for determining whether a similar battery or other energy storage facility is a transmission asset eligible for inclusion in TCOS.
3. The Commission's classification of the NaS battery as eligible for inclusion in TCOS is limited solely to ETT's NaS battery application in Presidio, Texas.

- 4. All other motions, requests for entry of specific findings of fact or conclusions of law, and any other requests for general or specific relief, if not expressly granted herein, are denied.

SIGNED AT AUSTIN, TEXAS the 6th day of April 2009.

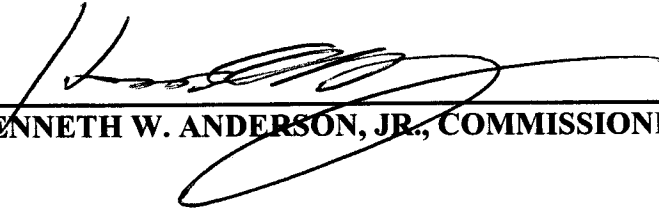
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