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Addendum StartPage: 0

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RULEMAKING TO ADDRESS
THE USE OF NON-TRADITIONAL
TECHNOLOGIES IN ELECTRIC
DELIVERY SERVICE

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PUBLIC UTILITY COMMISSION
OF TEXAS
PUBLIC UTILITY COMMISSION
FILING CLERK

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COMMENTS OF SOUTHWESTERN PUBLIC SERVICE COMPANY ON
RULEMAKING REGARDING THE USE OF NON-TRADITIONAL
TECHNOLOGIES

On September 7, 2018, the Public Utility Commission of Texas (“Commission”) Staff filed a request for comments regarding the review and approval of substations. The Commission has solicited specific comments from interested persons. Southwestern Public Service Company (“SPS”) offers for the Commission’s consideration the following responses to the questions posed by Staff.

Xcel Energy Inc., (“Xcel Energy”), SPS’s parent company, is exploring opportunities to advance energy storage and other non-traditional technologies on its systems in support of its corporate strategies of driving the clean energy future, creating cost efficiencies, and enhancing the customer experience. Xcel Energy is implementing several pilot and demonstration projects across its systems to learn more about storage technologies and to test their capabilities to perform grid functions such as renewable integration, voltage management, and peak reduction. SPS and Xcel Energy believe energy storage and other non-traditional technologies have the potential to deliver important benefits to our system and help us build a smarter energy infrastructure.

Question 1: Apart from energy storage, what non-traditional technologies could provide a potential cost-effective solution to reliability issues on a utility’s transmission or distribution system?

Response: On the distribution side, customer-sited solutions such as demand response, energy efficiency, and distributed solar are starting to emerge as ways to address constraints on distribution feeders.

On the transmission side, non-traditional technology solutions we are considering include using unmanned air systems or drones to monitor asset condition, monitoring for improvement of anti-galloping systems, asset analytics, machine learning capabilities, and using materials such as fiberglass for our poles that are less prone to fire risk and more flexible in weather events.

Question 2: Can a transmission and distribution utility (TDU) legally own a non-traditional technology device, including energy storage equipment and facilities, to support reliability on its system, without a specific exemption in the Public Utility Regulatory Act? If so, under what legal authority could a TDU own such a device?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 3: How should any energy necessary for TDU implementation of a non-traditional technology device be measured and accounted for within the ERCOT market, without using Unaccounted for Energy (UFE)?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 4: In which situations and scenarios would it be appropriate for a TDU to deploy a non-traditional technology device for the purpose of supporting reliability on its transmission or distribution system?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 5: Should a Certificate of Convenience and Necessity (CCN) or other commission pre-approval process be required before the construction or procurement of utility-owned devices that use non-traditional technologies to support reliability on the transmission or distribution system? If so, what criteria would be appropriate for pre-approval of such devices and why? Should such a pre-approval process only apply for a limited time?

Response: No, a CCN or some other commission pre-approval process should not be required for non-traditional technologies. These devices should be treated just like any other piece of equipment that SPS installs to address reliability, load growth, or other purposes; there is nothing unique that would require a CCN or pre-approval process.

However, if it's determined that some sort of pre-installation review process is necessary it should be in the nature of establishing criteria and guidelines by rule, including some exceptions or limitations based on a project type, size or cost

threshold as appropriate. A pre-approval process involving a contested proceeding should not be required.

Question 6: Should the commission's rules permit or require a TDU to contract with a non-utility service provider for the provision of a non-traditional technology device to support reliability on the TDUs transmission or distribution system? If so, what parameters should the commission stipulate for this arrangement?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 7: If the commission were to adopt a policy of permitting a TDU to procure a non-traditional technology device for the purposes of supporting reliability on the TDU's transmission or distribution system, what potential effects would such a policy have on ERCOT wholesale market outcomes, and especially price formation, in the ERCOT market? What potential effects might such a policy have on the competitive retail market, if any?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 8: What market-based alternatives exist, if any, to address reliability issues on a TDU's transmission or distribution system?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 9: How could a vertically integrated investor-owned utility maximize the value of an energy storage device without adversely affecting wholesale market outcomes and price formation in its respective market?

Response: In the market context in which SPS operates, within the Southwest Power Pool ("SPP"), there are various ways for a vertically integrated investor-owned utility to maximize value of an energy storage device for customers. These include a variety of strictly reliability functions, such as providing a storage back up power source for a radially-served load and for conserving impacts on existing infrastructure such as transformers, and also supply functions like peak load shaving (or shifting) for economic purposes. Moreover, as energy storage technologies become more advanced, they may be able to provide more value and perform more customer-benefitting functions.

As a practical matter, SPS is unaware of ways in which the operation of an energy storage device by a vertically integrated investor-owned utility would have an effect on wholesale market outcomes and price formation that would be considered adverse. For example, the use of energy storage devices could impact prices in capacity and energy markets, when used to supplant need for additional capacity and energy from generation, reflecting more efficiency in the functioning

of the market serving customers. In the integrated utility context, this impact would be *beneficial* to the utility's customer, the appropriate subject for the evaluation of costs and benefits.

Question 10: What impediments exist to using non-traditional technology devices on utility transmission or distribution systems?

Response: There are limitations to the capabilities of energy storage and other non-traditional technologies. For example, any energy storage system will discharge a lesser amount of energy than used to charge the device. Unlike traditional distribution and transmission infrastructure projects, which typically offer fixed capacity increases at known locations, non-traditional technologies often have varying operating characteristics based on location and the time of day they are used. Operational challenges are also presented by these technologies, such as voltage variations and power flow modulations within distribution systems, requiring sophisticated monitoring and control systems to manage them.

New tariffs, technical requirements, and market mechanisms will be necessary in order begin to operate non-traditional technologies on our transmission and distribution systems. Enhanced planning tools may also be needed to understand the varying operating characteristics of these devices and integrate them into our systems and planning processes.

There are non-traditional technologies that could provide benefits for both customers and operations, but are not easily subject to a cost-effectiveness evaluation. At this time, SPS has found limited opportunities where non-traditional technologies are a cost-effective alternative to traditional reliability investments.

To expand on Xcel Energy's existing pilot projects and to ensure the spectrum of energy storage and other non-traditional technology uses, capabilities, and values are adequately addressed, SPS is exploring opportunities for additional pilot and demonstration projects across our systems.

Question 11: Could the commission specify conditions under which a TDU could employ non-traditional technologies to support reliability? If so, what conditions would be appropriate?

Response: SPS is a vertically integrated investor-owned utility, and as such, has no comment at this time.

Question 12: If you are a utility, please provide a detailed overview of any batteries or other energy storage technologies on your transmission and distribution system in the state of Texas that are either currently operational or planned to be operational. Please explain the purpose, use, metering, and deployment of these technologies.

Response: There are no projects of this nature in SPS's Texas service territory at this time.

Question 13: Are there any other issues that the commission should consider addressing in this project?

Response: A key consideration that should be considered is the data architecture and cyber security standards necessary for enabling the use of non-traditional technology devices for reliability issues and other transmission and distribution system needs. Before these devices and related services (where applicable) can be integrated with our system, we must ensure these devices/services are fully visible and controllable to our grid operators, preferably using industry open standards for data exchange and cybersecurity. We are making investments in our distribution system that will enable more two-way communications and data exchange with non-traditional technology devices, and continue to participate in industry discussions to advance industry standards for data exchange and cybersecurity.

The Commission should consider establishing return on equity or other earnings incentives for utilities to encourage the development and deployment of non-traditional technologies and to mitigate potential economic risks incurred in developing and deploying such technologies. In order to encourage the consideration of non-traditional technologies (including distributed energy resources) as alternatives to traditional capital projects, some states have offered earnings adjustment mechanisms, shared savings models, or other incentives for utilities that deploy these devices.

Characterization of the technology is also a challenging issue. For example, storage devices behave as a load and generation, depending on whether the device is being charged or is discharging. SPS urges to the Commission to consider that when new technologies are used for reliability services within a transmission or distribution system that they be characterized as distribution and transmission assets because their primary purpose is to support power delivery reliability and stability.

If SPS can be of any assistance or address any questions or concerns that arise, please do not hesitate to contact us at your convenience.

Respectfully submitted,

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