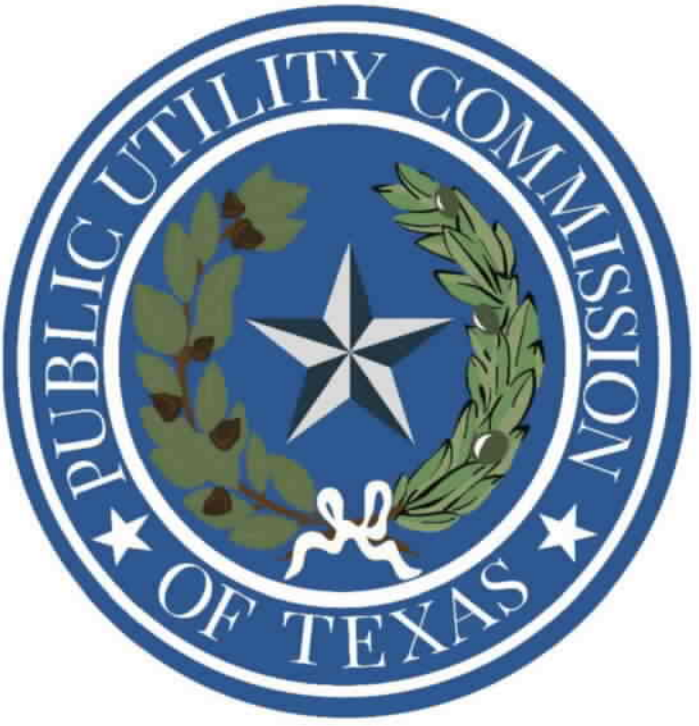

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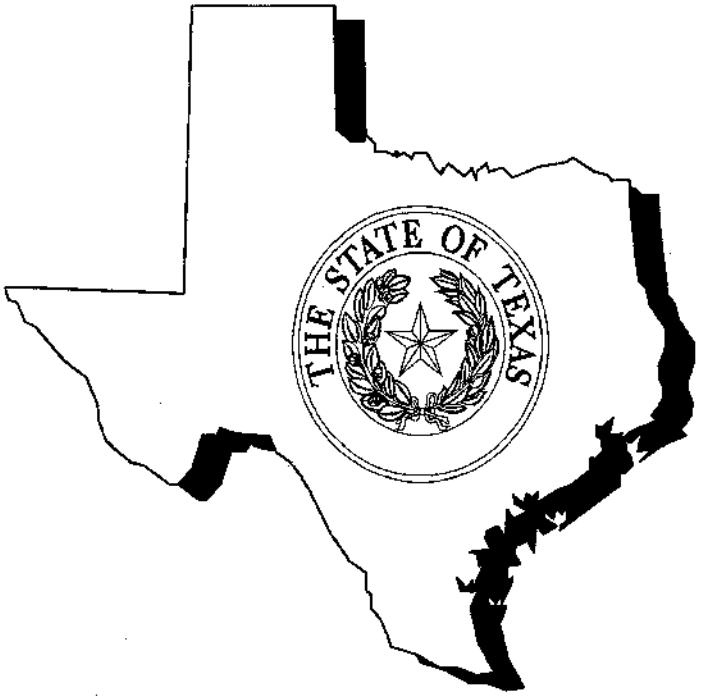
APPLICATION OF SOUTHWESTERN PUBLIC SERVICE COMPANY FOR APPROVAL OF ITS TRANSMISSION AND DISTRIBUTION SYSTEM RESILIENCY PLAN	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**



DIRECT TESTIMONY OF

DAVID BAUTISTA, P.E.
INFRASTRUCTURE DIVISION
PUBLIC UTILITY COMMISSION OF TEXAS

March 7, 2025

TABLE OF CONTENTS

ATTACHMENTS

I. STATEMENT OF QUALIFICATIONS

Q. Please state your name, occupation, and business address.

A. My name is David Bautista. I am employed by the Public Utility Commission of Texas ("PUC" or the "Commission") as an Engineer in the Infrastructure Division. My business address is 1701 North Congress Avenue, Austin, Texas 78711-3326.

Q. Please briefly outline your educational and professional background.

A. I have a Bachelor of Science in Electrical Engineering from Texas A&M University-Kingsville. I completed my degree in December of 1999 and have been employed at the Commission since September 2023 and previously from April 2018 to August 2021. A more detailed summary of my experience is provided in Exhibit DB-1.

Q. Are you a registered professional engineer?

A. Yes, I am a registered Professional Engineer in Texas, and my member number is 103418.

Q. Have you previously testified as an expert before the Commission?

A. Yes. A list of dockets in which I have testified is provided in Exhibit DB-2.

II. PURPOSE AND SCOPE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present Commission Staff's recommendations concerning the application of Southwestern Public Service Company (SPS) for approval of its System Resiliency Plan (SRP) and the subsequent Resiliency Measures.

Q. What statute allows a utility to file a plan to enhance the resiliency of its transmission and distribution system?

A. Section 38.078 of the Public Utility Regulatory Act (PURA)[1] allows a utility to file a resiliency plan in a manner authorized by Commission rule.

Q. Do Commission rules establish requirements for transmission and distribution resiliency plans?

A. Yes. 16 Tex. Admin. Code (TAC) § 25.62 explains the purpose of the system resiliency plan, defines applicable terms, provides requirements for filing a system resiliency plan and for the Commission processing of a resiliency plan, identifies cost recovery methods, and establishes resiliency plan reporting requirements.

Q. What measures must be used by the utility to enhance the resiliency of its transmission and distribution system?

A. A resiliency plan is comprised of one or more measures designed to prevent, withstand, mitigate, or more promptly recover from the risks posed to the electric utility's transmission and distribution systems by resiliency events. Both the statute and Commission rule state that each measure must utilize one or more of the following methods:[2]

(A) hardening electric transmission and distribution facilities;
(B) modernizing electric transmission and distribution facilities;
(C) undergrounding certain electric distribution lines;
(D) lightning mitigation measures;
(E) flood mitigation measures;
(F) information technology;
(G) cybersecurity measures;

[1] Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 11.001-66.016.

[2] PURA § 38.078(b) and 16 TAC § 25.62(c)(1).

(H) physical security measures;
(I) vegetation management; or
(J) wildfire mitigation and response.

Q. What issues identified by the Commission must be addressed in this docket?

A. In the Preliminary Order filed on January 2, 2025, the Commission identified the following issues that must be addressed:

Notice

1. Did the electric utility provide notice of its filed resiliency plan?

Application

2. Is the application sufficient?
3. Does the application include all required information?
4. Did the electric utility file proof that notice has been provided?
5. If the resiliency plan is sufficient, when was the resiliency plan deemed sufficient, and what is the deadline for the Commission to issue an order approving, modifying, or denying the resiliency plan?
6. Does the resiliency plan include an executive summary or comprehensive chart that explains the plan objectives, the resiliency events or related risks the plan is designed to address, the plan's proposed resiliency measures, the proposed metrics or criteria for evaluating the plan's effectiveness, the plan's cost and benefits, and how the overall plan is in the public interest?

Contents of the Resiliency Plan

7. What measures comprise the electric utility's resiliency plan to prevent, withstand, mitigate, or promptly recover from the risks posed by resiliency events to its transmission and distribution systems? In evaluating the measures, please address the following:

   a. Does each measure use one or more of the methods listed in PURA and the Commission rule?

   b. What risk or risks posed by resiliency events is each measure intended to prevent, withstand, mitigate, or more promptly recover from?

   c. How did the electric utility prioritize the identified resiliency event and, if applicable, the particular geographic area, system, or facilities where each measure will be implemented?

   d. How effective is each measure in preventing, withstanding, mitigating, or promptly recovering from the risks posed by the identified resiliency event? In addressing this question, identify any evidence that is quantitative, performance-based, or provided by an independent entity with relevant expertise which supports the effectiveness of each measure.

   e. What are the expected benefits of each resiliency measure, including, as applicable, reduced system restoration costs, reduction in the frequency or duration of outages for customers. and any improvement in the overall service reliability for customers, including the classes of customers served and any critical load designations?

f. Is any measure a coordinated effort with federal, state, or local government programs, or would the measure benefit from any federal, state, or local funding opportunities?

g. How does each measure compare, such as by cost or performance, to reasonable and readily identifiable alternatives?

h. Does any measure require a transmission system outage to implement?

i. Does any measure entail revising the functionality of AMS smart meters? If so, has any required deployment plan filing or notice been accomplished?

8. What types of resiliency events and associated resiliency-related risks is the resiliency plan designed to prevent, withstand, mitigate, or promptly recover from? For each resiliency event identified and described by the resiliency plan, please address the following:

a. Is the type of resiliency event defined with sufficient detail to allow the electric utility or Commission to determine whether an actual set of circumstances qualifies as a resiliency event of that type?

b. Does the resiliency event type include one or more magnitude thresholds, if appropriate, based on the risks posed to the electric utility's systems by that type of event?

c. What are the system characteristics that make the electric utility's transmission and distribution systems susceptible to the identified resiliency event type?

d. What is the electric utility's experience with, if applicable, and forecasted risk of the identified event type, including whether the forecasted risk is specific to a particular system or geographic area?

e. Do any studies conducted by the independent system operator or an independent entity with relevant expertise support the forecasted risk of the identified event type?

9. For each measure in the resiliency plan, what is the appropriate metric or criteria for evaluating the effectiveness of that measure in preventing, withstanding, mitigating, or promptly recovering from the risks associated with the resiliency event it is designed to address?

10. Does the resiliency plan include measures that are similar to other existing programs or measures, such as a storm hardening plan under 16 TAC § 25.95 or a vegetation management plan under 16 TAC § 25.96, or programs or measures otherwise required by law? If so, how are the measures in the resiliency plan distinct from these programs and measures and, if appropriate, how do the related items work in conjunction with one another?

11. How does the metric or criteria for evaluating the effectiveness of each measure in the resiliency plan differentiate between system improvement due to the measure in the resiliency plan and system improvement due to other existing programs or measures?

12. What systematic approach will be used to implement the resiliency plan during at least a three-year period? In addressing this question, please address details of the implementation, including estimated capital costs, estimated operations and maintenance expenses, an estimated timeline for completion, and, when practicable and appropriate, estimated net salvage value (value of the retired asset less depreciation and cost of removal) and remaining service lives of any assets expected to be retired or replaced by resiliency-related investments. Please also address relevant

cost drivers (e.g., line miles, frequency of inspections, frequency of trim cycles, etc.) that would affect the estimates.

13. What assumptions does the electric utility' s resiliency plan make, including assumptions underlying evidence of the risks posed by the resiliency events, evidence of the effectiveness and expected benefits of each resiliency measure, and comparisons with the cost or performance of readily identifiable alternatives? Are those assumptions reasonable? In answering this question, please address the following.
    a. What is the extent to which different reasonable assumptions would affect evidence of the risks posed by the resiliency events, evidence of the effectiveness and expected benefits of each resiliency measure, or comparisons of the cost or performance of a resiliency measure to that of readily identifiable alternatives?

Hurricane Mitigation

14. What specific measures are included in the electric utility's resiliency plan that address lessons learned from recent hurricanes? Please address whether these specific measures include more resilient distribution lines and poles, increased vegetation management, and hardening of transmission lines and facilities to help mitigate hurricane impacts.
15. Does the electric utility's resiliency plan include specific measures to increase the wind rating of distribution lines and poles?
16. Does the electric utility's resiliency plan include specific measures for vegetation management that will help mitigate hurricane impacts?

17. Does the electric utility's resiliency plan include specific measures to increase the wind rating of transmission lines and facilities?

Wildfire Mitigation

18. What are the resiliency measures related to wildfire mitigation in the electric utility's resiliency plan?
19. Do the electric utility's proposed system hardening resiliency measures mitigate wildfire risk?
20. Has the electric utility included in its resiliency plan an asset inspection resiliency measure related to wildfire mitigation?
21. Has the electric utility included in its resiliency plan a vegetation management resiliency measure related to wildfire mitigation?
22. Has the electric utility included in its resiliency plan an undergrounding resiliency measure related to wildfire mitigation?
23. Has the electric utility included in its resiliency plan wildfire monitoring and advanced analytics resiliency measures related to wildfire mitigation?

Commission Review of the Resiliency Plan

24. Should the Commission approve, deny, or modify the resiliency plan? In answering this question, address whether approving the plan is in the public interest by considering the following factors:
    a. the extent to which the plan is expected to enhance system resiliency, including:
        i. the verifiability and severity of the resiliency risks posed by the resiliency events the resiliency plan is designed to address;

ii. the extent to which the plan will enhance resiliency of the electric utility's system, mitigate system restoration costs, reduce the frequency or duration of outages, or improve overall service reliability for customers during and following a resiliency event;

iii. the extent to which the resiliency plan prioritizes areas of lower performance; and

iv. the extent to which the resiliency plan prioritizes critical load as defined in 16 TAC § 25.52.

b. the estimated time and costs of implementing the measures proposed in the resiliency plan;

c. whether there are more efficient, cost-effective, or otherwise superior means of preventing, withstanding, mitigating, or more promptly recovering from the risks posed by the resiliency events addressed by the resiliency plan; or

d. other relevant factors.

25. Does Commission Staff request that the electric utility provide any additional information and updates on the status of the resiliency plan submitted?

Cost Recovery

26. Does the utility request approval of a resiliency cost recovery rider? If so, does the utility's proposed cost recovery comply with Commission rule?

Q. Which issues in this proceeding have you addressed in your testimony?

A. I have addressed issues from the Preliminary Order and the requirements of 16 TAC § 25.62.

Q. If you do not address an issue or position in your testimony, should that be interpreted as Staff supporting any other party's position on that issue?

A. No. The fact that I do not address an issue in my testimony should not be considered as agreeing, endorsing, or consenting to any position taken by any other party in this proceeding.

Q. What is the scope of your testimony?

A. The scope of my testimony is to provide Commission Staff's recommendation regarding one of the five measures which is Measure 1– Distribution Overhead Hardening. Please refer to the testimonies of other Staff witnesses for further review of the remainder of the measures. Michael Noth is responsible for Measure 2 – Distribution System Protection Modernization, Chuck Bondurant is responsible for Measure 3 – Communication Modernization, and Eduardo Acosta is responsible for Measures 4 and 5 which are Operational Flexibility and Wildfire Mitigation respectably.

Q. What have you relied upon or considered to reach your conclusions and make your recommendations?

A. I have relied upon my review and analysis of the data contained in SPS's application and the application's accompanying attachments. I have also relied upon my review of the direct testimonies filed in this proceeding by or on behalf of SPS and responses to requests for information.

III. RECOMMENDATIONS

Q. What recommendations do you have regarding the application of SPS for approval of its Transmission and Distribution System Resiliency Plan?

A. I recommend the Commission approve Measure 1 –Distribution Overhead Hardening (Rebuild). The basis for my recommendation is discussed in more detail in the remainder of my testimony.

IV. SYSTEM RESILIENCY PLAN OVERVIEW

Q. Please describe SPS's proposed resiliency plan.

A. On December 30, 2024, SPS submitted its proposed resiliency plan for approval. The plan has a total of five resiliency measures identified by SPS that will significantly enhance their efforts to build a more resilient electric system and will benefit customers by reducing frequency and duration of outages; avoid system restoration costs; improve overall reliability resulting from newly hardened and modernized infrastructure that is better equipped to withstand, mitigate and more promptly recover from risks posed by extreme weather events, wildfires, and other threats.[3] The measures are Distribution Overhead Hardening, Distribution System Protection Modernization, Communication Modernization, Operational Flexibility, and Wildfire Mitigation. The estimated total cost for all five measures is $521.5 million in capital costs and $16.8 million in operations and maintenance (O&M) expenses over the 2025-2028 period.[4]

Q. Please provide a brief description for each of the resiliency measures you are addressing in your testimony.

A. I address one of the proposed five measures which is shown in the table below with a brief

[3] Direct Testimony of Brianne R. Jolc at 13 and 14 (Dec. 30, 2024).

[4] Application of Southwestern Public Service Company for Approval of its Transmission and Distribution System Resiliency Plan at 11 and 12 (Dec. 30, 2024) ("Application").

description.

RESILIENCY MEASURES	DESCRIPTION
Distribution Overhead Hardening	This project consists of replacing and reinforcing distribution poles, replacing conductor, line transformers, and open-wire secondary in protection zones.

Q. Could you briefly summarize the purpose of SPS's resiliency?

A. Yes. SPS provides electric service in the Texas Panhandle and the Texas South Plains region. They are a vertically integrated generation, transmission and distribution, and retail electric provider in the Southwest Power Pool (SPP). Their service territory is vast and mostly rural and the customer density is far less than many other Texas utilities. In addition, their area is also encompassed by areas experiencing significantly increased wildfire risk over the last 50 years.[5] The proposed SRP plan is designed to prevent, withstand, mitigate and allow SPS's distribution system to more promptly recover from extreme weather, wildfire, and cybersecurity events that pose a risk to the safe and reliable operation of the electric system.[6]

Q. Has an independent organization performed an analysis and review of SPS's resiliency plan?

A. Yes. SPS engaged 1898 & Co. (1898) to analyze and quantify the expected benefits of three of the five measures proposed in this SRP. These measures are Distribution Hardening, Distribution System Protection Modernization, and Communication

[5] Application at 2.

[6] Direct Testimony of Brianne R. Jole at 6.

Modernization. In addition, SPS also engaged EDM International (EDM) to help assess wildfire risks and to develop a strategy for the prioritizing programs that would maximize wildfire mitigation.[7]

Q. Did SPS coordinate with federal, state, or local government programs?

A. The Distribution Overhead Hardening measure is not a coordinated effort with any federal, state, or local government program.[8] However, as per the testimony of Brooke A. Trammell, SPS intends to pursue state funding for resiliency investment through the Texas Energy Fund (TEF) when the Commission's TEF rulemaking process is finalized. The TEF is a Texas grant program for non-ERCOT utilities can apply for funding investments such as this one. If appropriate under the adopted rule, SPS intends to pursue TEF funds for portions of measures one and two. These are Distribution Overhead Hardening measure, which is covered in this testimony, and Distribution System Protection Modernization.[9]

V. RESILIENCY MEASURE ANALYSIS

Q. How does the Commission's rule define a resiliency event?

A. According to 16 TAC § 25.62(b)(3), a resiliency event is defined as an event involving extreme weather conditions, wildfires, cybersecurity threats, or physical security threats that poses a material risk to the safe and reliable operation of an electric utility's transmission and distribution systems. A resiliency event is not primarily associated with

[7] Application at 9 and 11.

[8] Application, Attachment A at 53.

[9] Direct Testimony of Brooke A. Trammell at 26 (Dec. 30, 2024).

resource adequacy or an electric utility's ability to deliver power to load under normal operating conditions.

Q. Has SPS's service territory experienced resiliency events as defined by 16 TAC § 25.62(b)(3)?

A. Yes. 1898 relied on weather-based data collected from the National Oceanic and Atmospheric Administration (NOAA) and SPS's outage management system (OMS) to define weather-based resiliency events for SPS's service territory. A total of 21 different types of extreme weather events have been identified for SPS's service territory which include thunderstorm winds, lightning, strong winds floods, tornados, heavy snow, and drought just to name a few. In addition, a total of 3,443 weather-based resiliency events impacted their service area from 1998 to 2023.[10]

Q. Please explain how you have provided your analysis for the measures you are addressing.

A. My analysis will examine the Distribution Overhead Hardening measures. I will first give an overview of the activities to harden the distribution system. I will then provide a detail scope of the projects that will aid in hardening the system. I will then move towards SPS's new NESC design and construction standards for distribution circuits. Finally, I will provide the anticipated benefits the measure is intended to address, and alternatives considered.

A. DISTRIBUTION OVERHEAD HARDENING

[10] 1898 & Co. "SPS System Resiliency Investment Study" at 10 and 11.

Q. For the Distribution Overhead Hardening measure, please explain how this measure is designed to improve distribution system resiliency and provide the estimated costs.

A. **Distribution Overhead Hardening:** This measure consists of hardening approximately 170 protection zones. This includes replacing or installing approximately 16,150 poles, trussing approximately 1,690 poles, and wrapping approximately 14,760 poles in the areas of heightened wildfire risk. As part of these projects, SPS will also replace approximately 780 miles of primary and 11 miles of secondary conductor, 515 transformers, 175 arrestors, and 450 transformer fuses.[11] The approximate cost for this measure will be $232.5 million in capital costs with an average Benefit Cost Ratio (BCR) of 4.7.[12] In addition, this measure will have the added benefits addressed in the table below.[13]

Distribution Overhead Hardening Benefits	
Average BCR	4.7
Minimum BCR	3.22
Average CMI Reduction	58%
Avoided Restoration Costs	76%

Q. For the Distribution Overhead Hardening measure, please identify the type of events the measures are intended to address and provide the anticipated benefits of each measure.

A. This measure will increase the overall structural integrity of the overhead electrical

[11] Direct Testimony of Brianne R. Jole at 23.

[12] Application, Attachment A at 7.

[13] Application, Attachment A at 48.

infrastructure in the targeted zones. Within the zones, SPS's objectives are to modernize or upgrade existing lines in such a way that will meet new standards. As an example, SPS will replace old poles and will install new ones to reduce span lengths. The conductor upgrades will also increase pole line integrity and energy capacity that will avoid thermal overloads. This activity will also reduce the likelihood of conductor contact or breaking during high wind events therefore reducing igniting of a wildfire. Replacing fuses and arrestors with non-expulsion type will also reduce the chances of wildfire ignition. Pole wraps in areas of heightened wildfire risk will protect facilities from external wildfire damage. All these additions and reinforcements will be designed to grade B construction standards, which is the highest grade of construction for overhead distribution lines under the NESC. These changes to the structural integrity of the lines allow SPS to better survive weather events such as wind, floods, tornados, heat or cold events identified in their service territory.[14]

Q. Did SPS consider alternatives to the Distribution Hardening measures?

A. Yes. SPS considered overhead to underground conversion. When reasonably targeted, undergrounding can provide cost effective resiliency benefits. However, undergrounding is not a cost-effective alternative in most of SPS's service area. Undergrounding can range from five to ten times the cost per mile of fully rebuilding the overhead lines. In addition, undergrounding faces significant voltage losses as the distance between substations increases.[15]

[14] Application, Attachment A at 39, 40, and 41.

[15] Application, Attachment A at 52.

Q. What is your recommendation regarding the Distribution Overhead Hardening measures?

A. I recommend this measure be approved in its entirety. The measures are designed to improve the strength of the overhead distribution system, therefore making it more resilient to major weather events. As mentioned previously, SPS's new adopted use of new design and construction standards that go above the minimum recommended by the NESC should provide resilient changes to their distribution system. In addition, this plan provides an implementation timeline over a roughly three-year period (2025-2028) and will reduce outage frequency and duration time of outages during major storm events. It is my professional experience that these measures are superior to alternatives, and they are in the public best interest.

VI. CONCLUSIONS

Q. For the proposed measure you addressed, do you recommend it for approval and why?

A. I recommend this measure be approved for the following reasons:

(1) This measure is designed to enhance system resiliency;

(2) Customers will benefit from a reduction in frequency and duration of outages;

(3) This measure will improve overall service reliability;

(4) This measure has an implementation timeline of three years;

(5) This measure is projected to decrease restoration costs after major weather events by 76%;

(6) This measure has an average CMI reduction of 58%; and

(7) This measure has an average BCR of 4.7.

Q. Are there any other recommendations or concerns regarding any of measures discussed for approval?

A. Yes. The Resiliency Plan implicates existing Commission Rules, SPP Protocols, SPP Planning Guide, SPP Operating Guide, and NERC Reliability Requirements. Should all or partial recommendations of this Resiliency Plan be approved, I recommend the Commission order SPS to abide by all applicable Commission Rules, SPP protocols, SPP Planning Guide, SPP Operating Guide and NERC Reliability standards.

Q. Does this conclude your testimony?

A. Yes.