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APPLICATION OF TEXAS-NEW MEXICO POWER COMPANY FOR APPROVAL OF A SYSTEM RESILIENCY PLAN	§ § § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

DIRECT TESTIMONY OF

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

October 29, 2024

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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 Staff's recommendations concerning the application of Texas New-Mexico Power Company (TNMP) 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 (PURA), 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 August 29, 2024,[3] 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?

[3] Order of Referral and Preliminary Order (Aug. 29, 2024).

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.

Hurricane Mitigation

13. 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.
14. Does the electric utility's resiliency plan include specific measures to increase the wind rating of distribution lines and poles?
15. Does the electric utility's resiliency plan include specific measures for vegetation management that will help mitigate hurricane impacts?
16. Does the electric utility's resiliency plan include specific measures to increase the wind rating of transmission lines and facilities?

Wildfire Mitigation

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

21. Has the electric utility included in its resiliency plan an undergrounding resiliency measure related to wildfire mitigation?

22. 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

23. 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.

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

Cost Recovery

25. 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. TNMP proposes eight resiliency measures in its system resiliency plan. The scope of my testimony is to provide Staff's recommendation regarding two of these measures, which are Measure 1- Distribution System Resiliency and Measure 2- Distribution System Protection Modernization. Please refer to Staff witness Eduardo Acosta's testimony for

further review of Measure 3- Vegetation Management, Staff witness Sherryhan Ghanem's testimony for further review of Measures 4 and 5- Wildfire Mitigation and Flood Mitigation, respectively, and Staff witness Chuck Bondurant's testimony for review of Measures 6, 7 and 8- Enhanced Operations System Technology, Cybersecurity, and Physical Security, respectively.

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 TNMP'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 TNMP and responses to requests for information.

III. RECOMMENDATIONS

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

A. I recommend the Commission approve both Measure 1- Distribution System Resiliency and Measure 2- Distribution System Protection Modernization. The bases for my recommendations are discussed in more detail in the remainder of my testimony.

IV. SYSTEM RESILIENCY PLAN OVERVIEW

Q. Please describe TNMP's proposed system resiliency plan.

A. On August 28, 2024, TNMP submitted its proposed system resiliency plan for approval. The plan has a total of eight resiliency measures identified by TNMP that will improve the

system's ability to prevent, withstand, mitigate, and/or more promptly recover from the resiliency events. The plan includes the following measures: Distribution System Resiliency, Distribution System Protection Modernization, Vegetation Management, Wildfire Mitigation, Flood Mitigation, Enhanced Operations System Technology, Cybersecurity, and Physical Security. The estimated total cost for all eight measures is $600.3 million in capital costs and $150.8 million in O&M expenses over the 2025-2027 period.[4]

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

A. I address two of the proposed eight measures which are shown in the table below with a brief description.

RESILIENCY MEASURES	DESCRIPTION
Distribution System Resiliency (This measure is comprised of four programs)	**Distribution Circuit Hardening Rebuilds-** Replace 10,490 poles and their crossarms, insulators, and 457 conductor miles. **Distribution Circuit Overhead Inspections Hardening-** Inspect 25,000 poles and truss 4.7%, replace 2.1%, and replace 36.7% of crossarms and insulators. **Strategic Underground Pilot-** Convert 5 miles of overhead lines to underground at strategic locations. **Freeway Strategic Undergrounding-** Replace 10 overhead crossings with underground equivalent.
Distribution System Protection (This measure is comprised of two programs)	**Mainline Automated Reclosing Deployment-** Upgrade 52 relays, install 152 mainline automated reclosers and controllers, install 174 tie automated reclosers and controllers, and replace 47 hydraulic reclosers with new mainline automated reclosers and controllers.

[4] Application of Texas-New Mexico Power Company for Approval of a System Resiliency Plan at 11 (Aug. 28, 2024) (Application).

	Lateral Reclosing Deployment- Install 786 reclosers across 168 circuits.

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

A. Yes. Over the last decade, major weather events have impacted society more and more. Additionally, new types of threats are continuously trying to infiltrate and exploit the interconnected digital grid. These types of events cause many electric failures and impact many customers. At the same time, the customer expectations for electric energy availability have increased dramatically over the years and customers demand that the electric grid be consistently available. TNMP believes that the best action to take to remedy the above-mentioned problems is to make the electric grid more resilient. A resilient grid allows businesses and families to save money because they can return to normalcy much quicker following a major event.[5]

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

A. Yes. TNMP hired the services of 1898 & Co. (1898) to analyze the efficacy of different potential resiliency measures. 1898 assisted with identifying potential projects and estimating the costs and benefits of those projects. 1898 prepared the report *Texas-New Mexico Power System Resiliency Analysis & Investment Study*, (1898 Report) which is included as Appendix 9.7 of Attachment 1-TNMP's SRP and includes the evaluation of the following measures: Distribution System Resiliency, Distribution System Protection

[5] Application, Attachment 1, Appendix 9.7- 1898 & Co. Report: Texas-New Mexico Power System Resiliency Analysis & Investment Study (1898 Report) at 35.

Modernization, Vegetation Management, Flood Mitigation, and Enhanced Operations System Technology.[6]

The study includes the utilization of a resiliency and risk-based planning approach to identify and prioritize resiliency investments utilizing an Integrated Resiliency and Risk Investment Model.[7] In addition, TNMP also retained the services of EDM International in the development of its Vegetation Management and Wildfire Mitigation measures and programs in its SRP.[8]

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

A. No. TNMP's Distribution System Resiliency and Distribution System Protection Modernization measures will not be coordinated efforts with federal, state, or local government programs and will not benefit from any federal, state, or local government funding opportunities.[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 resource adequacy or an electric utility's ability to deliver power to load under normal

[6] *Id.* at 36.

[7] *Id.* at 9.

[8] Direct Testimony of TNMP witness Christopher L. Gerety at 7 (Aug. 28, 2024) (Gerety Direct).

[9] Application, Attachment 1 at 79 and 91.

operating conditions."

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

A. Yes. TNMP relied on data taken from the National Oceanic and Atmospheric Administration (NOAA) database that includes all major events that have affected its service area.[10] A total of 3,202 extreme weather events have impacted TNMP's service area since 1998, averaging 123.2 events per year.[11] Wind-based with thunderstorm wind events account for most of them.[12] They include wind, flooding, tornados, extreme cold events, heat related events, and tropical cyclones.[13]

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

A. I have separated my analysis into two sections below which represent the two resiliency measures and their respective programs. My analysis will address the Distribution System Resiliency and Distribution System Protection Modernization measures.

A. DISTRIBUTION SYSTEM RESILIENCY

Q. For the Distribution System Resiliency measure, please explain how this measure is designed to improve distribution system resiliency and provide the estimated cost.

A. **Distribution System Resiliency:** This measure consists of four programs which include

[10] 1898 Report at 10.

[11] 1898 Report at 13.

[12] 1898 Report at 62.

[13] 1898 Report at 59-62.

the following: Distribution Circuit Hardening Rebuilds, Distribution Circuit Overhead Inspections Hardening, Strategic Undergrounding Pilot, and Freeway Strategic Undergrounding.[14] These four programs will allow TNMP to harden its overhead infrastructure by doing multiple diverse projects which will result in the system's ability to prevent, withstand, and/or more promptly recover from resiliency events.[15] TNMP estimates it will invest $320 million in capital costs and $4.5 million in O&M expenses over a three-year period from 2025 to 2027 for the Distribution System Resiliency measure.[16] The table below shows each program cost, including O&M cost.

DISTRIBUTION SYSTEM RESILIENCY			
Programs	**Capital**	**O&M**	**Total**
Distribution Circuit Hardening Rebuilds	$255 Million	$3 Million	$258 Million
Distribution Circuit Overhead Inspections Hardening	$45 Million	$1.5 Million	$46.5 Million
Strategic Undergrounding Pilot	$10 Million	$0	$10 Million
Freeway Strategic Undergrounding	$10 Million	$0	$10 Million

TNMP estimates that the program Distribution Circuit Hardening Rebuilds and Measure 2, Distribution System Protection Modernization, which I cover later in my testimony, will

[14] Application at 12, table 1-1.

[15] Application at 11.

[16] Application at 61.

have a combined 51% decrease in Customer Minutes Interruptions (CMI).[17]

Q. For the Distribution System Resiliency measure, please identify the type of events the measure is intended to address and provide the anticipated benefits of each measure.

A. The table below summarizes the type of events this measure is intended to address as well as the benefits of the measure:

Distribution System Resiliency Programs	Events Addressed	Infrastructure Impact	Anticipated Benefit
Distribution Circuit Hardening Rebuilds	Extreme Weather Tropical Cyclones.	10,490 poles replaced and their crossarms and insulators. 457 conductor miles replaced.	Improve strength of distribution lines by using stronger poles, Adjust the pole embedment depth depending on service area. Decrease future restoration costs and time. Reduce CMI.
Distribution Circuit Overhead Inspections Hardening	Extreme Weather Tropical Cyclones.	Approximately 25,000 poles inspected, with 4.7% poles trussed, 2.1% poles replaced, and 36.7% crossarms and insulators replaced.	Benefit-Cost ratio (BCR) average for outages increased to 36% and increased to 34% for restoration costs. Improve strength to overhead lines
Strategic Undergrounding Pilot	Extreme Weather Tropical Cyclones.	An estimated 5 miles of targeted overhead to underground conversion	Less susceptible to weather-related interruptions. Ideal for high customer count areas. Reduce system restoration cost.
Freeway Strategic Undergrounding	Extreme Weather Tropical Cyclones.	10 freeway crossing projects across 4 freeways	Eliminate overhead freeway crossings and replace with underground. Reduce system restoration cost and improve CMI

Overall, the Distribution System Resiliency measure will provide significant hardening

[17] Texas-New Mexico Power System Resiliency Analysis & Investment Study pages 32.

against extreme weather events across its overhead distribution system, including the pilot undergrounding program. Distribution hardening will be accomplished mainly through the replacement of poles, crossarms, insulators and conductors with resilient equivalents, which include stronger wood poles, wood pole alternatives such as steel, concrete or composite, fiberglass crossarms, non-ceramic insulators and conductors with a higher rated breaking strength.[18] In addition, TNMP plans to implement new resiliency standards that consider wind speed and weather conditions greater than the NESC code currently requires.[19] As an example, TNMP plans to use Class 2 poles as a minimum, and they plan to design poles using NESC rule 250B for loading, NESC rule 250C for wind speed, and NESC 250D for combined ice and wind loading.[20] Under NESC rule 250C, for example, poles in the Gulf Region will use a wind speed of 130MPH and other areas will use lesser wind speeds depending on the location.[21] Pole embedment will not be the industry standard of 10% of pole length plus two additional feet.[22] Instead, TNMP plans to adjust the depth of embedment based on local conditions, system conditions, and whether the application is single or three phase circuit.[23] These new standards will not only benefit the overall overhead system but the underground program too because the overhead to underground transition poles will be stronger as well.

Q. Did TNMP consider alternatives to the Distribution Circuit Hardening measure?

[18] Gerety Direct at 41.

[19] *Id.* at 42.

[20] Application, Attachment 1 at 62.

[21] Texas-New Mexico Power Company's Response to Commission Staff's Second Request for Information at 3 (Oct. 11, 2024) (TNMP's Response to Staff's Second RFI).

[22] *Id.* at 4.

[23] *Id.*

A. Yes. TNMP considered undergrounding as their main alternative to their Resiliency Plan.[24] However, undergrounding is expensive compared to overhead hardening.[25] However, the two proposed programs containing small portions of distribution undergrounding will aid in understanding those costs and benefits and will assist in the evaluation and recovery efforts after a resiliency event.[26]

Q. What is your recommendation regarding the Distribution Circuit Hardening measure?

A. I recommend this measure be approved in its entirety. This measure is designed to improve the strength of the overhead distribution system, therefore making it more resilient to major weather events. As mentioned previously, TNMP's planned use of new design and construction standards that go above the minimum recommended by the NESC will provide resilient changes to its distribution system. In addition, this plan provides an implementation timeline over a roughly three-year period (2025-2027) and will reduce outage frequency and duration time of outages during major storm events. It is my professional opinion that this measure is superior to the alternatives and is in the public best interest.

B. DISTRIBUTION SYSTEM PROTECTION MODERNIZATION

Q. For the Distribution System Protection Modernization measure, please explain how the measure is designed to improve system resiliency and provide the estimated cost.

[24] Direct Testimony of TNMP witness Christopher L. Gerety at 42.

[25] *Id.*

[26] *Id.*

Also, please identify the type of events this measure is intended to address, and provide the anticipated benefits.

A. This measure is made up of two programs: the Mainline Automated Reclosing Deployment program and the Lateral Reclosing Deployment program.[27] Together, these proposed programs are designed to protect feeders from temporary and permanent faults as well as to improve feeder reliability.[28] These programs will modernize the distribution system and in turn will promote faster outage recovery during resiliency events.[29] TNMP will invest $85.5 million in capital costs and $1.5 million in O&M expenses over a three-year period from 2025-2027.[30] These two programs are complementary and will help improve TNMP's distribution system performance during resiliency events.[31]

Distribution System Protection Modernization Programs	Events Addressed	Infrastructure Impact	Anticipated Benefit
Mainline Automated Reclosing Deployment	Extreme Weather Tropical Cyclones.	Upgrade 52 relays. Install 152 mainline automated reclosers and controllers, install 174 tie automated reclosers and controllers, and replace 47 hydraulic reclosers with new mainline automated reclosers and controllers.	Improve resiliency of distribution lines by providing automated circuit switching during major weather events. BCR of 3.05
Lateral Reclosing Deployment	Extreme Weather Tropical Cyclones.	Install 786 lateral reclosers across 168 circuits/feeders.	Ideal for temporary faults. Provide multiple operations before it locks out. BCR of 1.84

[27] Application at 80.
[28] Application at 83.
[29] Gerety Direct at 46.
[30] Application, Attachment 1 at 79-80.
[31] Application, Attachment 1 at 83.

The Mainline Automated Reclosing Deployment measure's purpose is to improve the resiliency of TNMP's distribution system by installing modern protection devices within the substation and along mainline circuits.[32] These modern digital relay devices will replace existing electromechanical and legacy microprocessor relays.[33] In addition, TNMP will also replace hydraulic reclosers with modern vacuum-based reclosers.[34] The goal is to enable fully automated switching during resiliency events, allowing for rapid fault isolation and service restoration without the need of manual intervention.[35]

Lateral Reclosing Deployment aims at replacing single shot fuses with non-communicating automated reclosing devices on tap or lateral lines.[36] These new reclosing devices will automatically assess and restore power in the event of a temporary or transient fault.[37] These devices will perform the assessment several times to determine if the fault is of the transitory type.[38] In the event the fault becomes permanent, the reclosing device will lock open after several operations, isolating the faulted section from the main system.

Q. Did TNMP consider alternatives to the Distribution System Protection Modernization measure?

[32] Gerety Direct at 47.

[33] *Id.*

[34] *Id.*

[35] *Id.*

[36] Gerety Direct at 48.

[37] *Id.*

[38] *Id.*

A. Yes. TNMP considered undergrounding whole distribution circuits as an alternative.[39] However, undergrounding entire circuits can be expensive. In addition, TNMP evaluated different types of devices for both mainline and lateral applications. However, these alternatives were found to have higher ongoing maintenance costs and upfront costs associated with common components such as controllers.[40]

Q. What is your conclusion regarding the Distribution System Protection Modernization measure?

A. Distribution System Protection Modernization is a viable proposal not only to enhance the existing distribution system but also to aid in quick recovery during a major weather event. The two programs working together will isolate outages, will provide better circuit segmentation capabilities and will reduce the restoration time after any event.

VI. CONCLUSIONS

Q. Of all the proposed measures you addressed, which do you recommend for approval and why?

A. I recommend that both measures be approved for the following reasons:

(1) Both measures are designed to enhance system resiliency;

(2) 1898 utilized a resilience and risk-based approach to identify, prioritize, and perform benefit-cost modeling to support TNMP's measures;

(3) Both measures have an implementation timeline of three years;

[39] Gercty Direct at 47.

[40] *Id.*

(3) Both measures decrease storm restoration costs after major weather events;

(4) Both measures decrease customers impacted by a major weather event; and

(5) Both measures decrease duration of outage frequency and duration time.

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

A. Yes. The system resiliency plan implicates existing Commission rules, ERCOT Protocols, ERCOT Planning Guide, ERCOT Operating Guide, and NERC Reliability Requirements. Should all or partial recommendations of this system resiliency plan be approved, I recommend the Commission order TNMP to abide by all applicable Commission rules, ERCOT protocols, ERCOT Planning Guide, ERCOT Operating Guide and NERC Reliability standards.

Q. Does this conclude your testimony?

A. Yes

Attachment DB-1: Qualifications of David Bautista

In December 1999 I received a Bachelor of Science in Electrical Engineering from Texas A&M University-Kingsville. In June of 2009 I passed my professional engineering exam in power engineering and received my professional engineering license (TX License 103418).

I joined the Public Utility Commission (PUC) in April 2018 as an Engineering Specialist for the Infrastructure and Reliability Division. I left the PUC in July of 2021 to pursue a career in low voltage engineering. I returned to the PUC on September 1 of 2023 as an Engineer VI. Prior to the PUC, I worked in the electric utility business as an engineer for various companies in Texas as well as in North Dakota.

I started my career as an underground distribution engineer for City Public Service in San Antonio. I was responsible for three-phase commercial design of underground distribution circuits. I also served as a project manager for all my designs, which included overhead to underground conversions, system improvements, military bases and commercial applications.

After two short stops at Austin Energy and Rio Grande Electric Cooperative, I joined Bluebonnet Electric Cooperative (BEC). I started as a System Engineer I and progressed to the System Engineer III level. At BEC, I was responsible for system protection, system planning, power factor correction and other distribution engineering needs.

In addition to my utility experience, I also worked as an Engineering Consultant for more than two years. As a consultant, I provided engineering solutions to various utility companies throughout the State of Texas. Such solutions included design of 12.5kV to 34.5kV projects, system protection, distribution planning, construction specifications, development of load trees for steel and concrete pole fabrication, development of sag/tension charts and equipment specifications.

List of Previous Testimony

Docket No. 48212
APPLICATION OF GOLDEN SPREAD ELECTRIC COOPERATIVE, INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE CONVERSION OF THE COLORADO RIVER MUNICIPAL WATER DISTRICT'S PRIVATE 69-KV TRASNMISSION LINE TO PUBLIC USE IN CONCHO COUNTY.

Docket No. 48785
JOINT APPLICATION OF ONCOR ELECTRIC DELIVERY COMPANY LLC AND AEP TEXAS INC. TO AMEND CERTIFICATES OF CONVENIENCE AND NECESSITY FOR A DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN PECOS, REEVES, AND WARD COUNTIES, TEXAS (SAND LAKE-SOLSTICE CCN).

Docket No. 48668
JOINT APPLICATION OF SHARYLAND UTILITIES, L.P. AND CITY OF LUBBOCK. TO AMEND CERTIFICATES OF CONVENIENCE AND NECESSITY FOR THE ABERNATHY TO WADSWORTH 345-KV TRANSMISSION LINE IN HALE AND LUBBOCK COUNTIES, TEXAS.

Docket No. 48950
APPLICATION OF TEXAS-NEW MEXICO POWER COMPANY TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE PROPOSED FAULKNER TO ALPINE 138-KV FEED PROJECT IN REEVES COUNTY, TEXAS.

Docket No. 49715
APPLICATION OF ENTERGY TEXAS INC. TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A PROPOSED 230-KV TRANSMISSION LINE IN LIBERTY AND HARRIS COUNTIES, TEXAS.

Docket No. 50277
APPLICATION OF EL PASO ELECTRIC COMPANY TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR AN ADDITIONAL GENERATING UNIT AT THE NEWMAN GENERATING STATION IN EL PASO COUNTY AND THE CITY OF EL PASO.

Docket No. 55397
APPLICATION OF AEP TEXAS INC., TO AMEND ITS CERTIFICATES OF CONVENIENCE AND NECESSITY FOR THE CRUCE-TO-REFORZAR DOURBLE-CIRCUIT 345-KV TRANSMISSION LINE IN BROOKS, DUVAL, JIM HOGG, JIM WELLS, AND KLEBERG COUNTIES.