**CONFIDENTIAL DESIGNATIONS**

**The Empire District Electric Company d/b/a Liberty**

**ER-2024-0261**

**RE: All confidential testimony (pp. 12-13) and schedules (Direct Schedule JW-1) of Jeffery Westfall**

The information provided in the "Description & Justification" column for projects DA0640, DR0188, TA0925, TA0941, and TR150 is designated "Confidential" in accordance with Commission Rule 20 CSR 4240-2.135(2)(A)7, as it contains important security, cybersecurity and safety information related to the Company's substations and network. The confidentiality shall be maintained consistent with that Rule and/or Section 386.480 RSMo, as the case may be.

The information provided in the "Description & Justification" column for project DR0176 is designated "Confidential" in accordance with Commission Rule 20 CSR 4240-2.135(2)(A)1, as it contains customer-specific information. The confidentiality shall be maintained consistent with that Rule and/or Section 386.480 RSMo, as the case may be.

Exhibit No.: _____
Issues: Rate Base, Capital Improvements, Transmission & Distribution, Reliability
Witness: Jeffery Westfall
Type of Exhibit: Direct Testimony
Sponsoring Party: The Empire District Electric Company d/b/a Liberty
Case No.: ER-2024-0261
Date Testimony Prepared: November 2024

**Before the Public Service Commission**
**of the State of Missouri**

# Direct Testimony

**of**

**Jeffery Westfall**

**on behalf of**

**The Empire District Electric Company d/b/a Liberty**

**November 6, 2024**

Liberty™

**DENOTES CONFIDENTIAL**
20 CSR 4240-2.135(2)(A)7

PUBLIC VERSION

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BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION
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## I. INTRODUCTION

**Q. Please state your name and business address.**

A. My name is Jeffery Westfall, and my business address is 602 S. Joplin Ave, Joplin, Missouri 64801.

**Q. By whom are you employed and in what capacity?**

A. I am employed by Liberty Utilities Service Corp. ("LUSC") as the Central Region Vice President of Technical Services for Liberty Utilities supporting the Central Region, which includes The Empire District Electric Company d/b/a Liberty ("Liberty" or the "Company"). My primary responsibilities include construction standards, GIS, technical training, distribution planning, asset management and outage management.

**Q. On whose behalf are you testifying in this proceeding?**

A. I am testifying on behalf of Liberty.

**Q. Please describe your educational and professional background.**

A. I began my employment with Empire in December of 1989 in the Building Services department as a night janitor, switchboard operator and mail clerk. In August 1990, I became a warehouseman in the Company's Stores department. In March of 1991, I transferred to the Asbury power plant where I held the position of Laborer and Laborer semi-skilled. I accepted the position of groundman in Aurora, MO in March of 1992. I progressed in classification and obtained my Journeyman Lineman status in June of 1995, which I held until I was named Manager of Line Operations in July 2008. As the Manager of Line Operations, I oversaw the line operations for the Aurora, MO service

area, which included managing the workload and outage response for four line crews and three service trucks. In addition, I was responsible for the Construction and Maintenance budgets for the Aurora area. In June of 2015, I accepted the position of Director of Operations – East where my responsibilities were expanded to include our four operating areas on the east side of Empire's electric service area. In October 2016, I was promoted to Director of Operations, and my responsibility was expanded to include all eight operating service areas. In October of 2017, I was named the Central Region Director of Operations – T&D and in 2018 I was promoted to Central Region Senior Director of Operations – T&D. In May of 2024, I accepted my current role of Vice President of Technical Services – Electric.

**Q. Have you previously testified before the Missouri Public Service Commission ("Commission") or any other regulatory agency?**

A. Yes, I have provided testimony before this Commission, the Kansas Corporation Commission, the Oklahoma Corporation Commission, and the Arkansas Public Service Commission.

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

A My testimony provides an overview of the transmission and distribution investments made by Liberty since our last rate case in Missouri, Case No. ER-2021-0312, to increase reliability for our customers and to improve system operability and safety. I also provide examples of the Company's strategy to proactively mitigate outage risk. Liberty has replaced equipment found to be in poor condition, end of service life, or otherwise in a non-conforming condition based on objective evidence collected through field inspections. For instance, solutions that increase sectionalization of our transmission and distribution system help reduce the number of customers impacted by

outages. Additionally, the solutions implemented by Liberty help the Company enable faster restoration times when outages do occur. Construction of new substations and reconductoring projects also provide additional system redundancy and switching paths to make the system more operable under a variety of normal operating conditions and weather events. Replacing aging and deteriorating infrastructure is a key component of assuring that we can continue to provide safe reliable service for our customers. The results of these investments are evident from the system's relatively strong performance during the recent extreme weather events in our service area. I will also discuss the Company's system reliability metrics and the efforts made by Liberty to improve its service reliability and service quality for our customers in Missouri.

## II. TRANSMISSION AND DISTRIBUTION INVESTMENTS

**Q. Please describe the capital investments in the transmission and distribution system Liberty has made since its last general rate case.**

A. The Company continually seeks to reinvest in infrastructure to ensure that the transmission and distribution systems are providing reliable and adequate service to customers. The Company has invested $491.7 million in transmission and distribution system projects since the last general rate case. To aid in supporting the prudency of these investments I have prepared a list of the capital investments exceeding $1 million made in Liberty's transmission and distribution systems since July 1, 2021, through the end of the update period in this case, September 30, 2024. This list includes a description and justification for each capital project and is attached to my testimony as **Confidential Direct Schedule JW-1**.

**Q. Why does Liberty invest in projects reinforcing its transmission and distribution systems?**

A. There are many reasons underlying Liberty's investments in transmission and distribution projects which serve to reinforce its system: standards compliance, past reliability data, load growth accommodation, and the results of field inspections. A common theme across all investment drivers is the Company's commitment to maintaining and improving the reliability of the grid. More specifically, the Company's transmission and distribution investments serve the following functions:

- sectionalize existing circuits to quickly and efficiently reduce the number of customers affected by outages by restoring service to adjacent areas through alternate supply paths;
- harden the system and make it more resilient to extreme weather events by replacing deteriorated assets, reducing line sag, trimming adjacent vegetation, etc.;
- upgrade system voltages by reconductoring existing circuits and replacing older station assets with higher-rated equipment to enable load growth, reduce system losses, and increase line transfer capability during the times of high loading;
- comply with relevant North American Electric Reliability Corporation ("NERC") standards and directives of the Southwest Power Pool ("SPP") associated with system capacity, redundancies, and other priorities;
- undertake reactive repairs to line and station assets caused by weather, faulty equipment, and other common outage causes;
- replace or refurbish deteriorated or obsolete station equipment no longer deemed to be operable because of inspections; and
- other types of proactive and reactive work associated with transmission and distribution infrastructure and supporting equipment and facilities.

**Q. What is "Operation Toughen-Up"?**

A. In 2010, Liberty developed a multi-year plan to undertake a series of system reliability performance enhancements by replacing aged and deteriorated assets and undertaking other types of upgrades, such as sectionalizing line infrastructure to reduce the impact of outages, as well as protection, control and remote operation and monitoring improvements. This reliability plan is often referred to as "Operation Toughen-Up."

**Q. In the last case, you provided an update on Missouri projects that were included in "Operation Toughen-Up." Have there been any additional Operation Toughen-Up projects since the June 30, 2021 update period in the last case?**

A. Yes, several Operation Toughen-Up projects were completed since the Company's last rate case and are included in this current case for recovery. These projects consist of the following investments:

- TA0925 – Install 69kV Breakers at Sub 332,
- TA0936 – Install (2) 161kV Breakers at Sub 432,
- TA0937 – Install (2) 69kV Breakers at Sub 251,
- TA0952 – Install SCADA and Replace Aged Assets at Sub #392, and
- TR0910 – Rebuild 69kV Boston to Greenfield.

**Q. Has Operation Toughen-Up extended beyond the originally scheduled ten years?**

A. Yes. As of the September 30, 2024 update period in this case, Liberty has one remaining project to complete from Operation Toughen-Up: TR0910 – Install Automated Switch at Sub 400. It is expected to be completed by 2025, and will be included for recovery in a subsequent case.

**Q. How has the Company's Operation Toughen-Up Program changed its overall approach to making investments in its Transmission and Distribution**

**infrastructure which will continue to be used even after the Program has reached completion?**

A. As Project Toughen-Up comes to a close, the Company has taken the philosophy of the program and has applied it across system program needs and applicable requirements including updating construction standards, an aged asset replacement program, and system reliability improvement. The Company continues to recognize the need for system hardening and modernizing the grid.

**Q. Please further describe the Distribution and Transmission investments made by Liberty since the last general case.**

A. The Company has made significant investments in its Distribution and Transmission system since the last rate case. As mentioned above, **Confidential Direct Schedule JW-1** provides a detailed list of all transmission and distribution investments over one million dollars that have been made since the last rate case. This list includes many of the "Operation Toughen-Up" projects, as well as other capital investments. In addition, the following are examples of some of the Missouri distribution and transmission investments constructed since the last rate case.

**Distribution Investments:**

**DB0001 – Extensions (Annual):** This portfolio consists of multiple small-scale projects that involve line extensions to accommodate service requests for new and/or existing customers. The number of extensions for new or reconfigured services can vary from year to year, and as such, historical volumes are used for budgeting purposes. The dynamic nature of connection requests is not correlated with any single investment driver, but rather entails an interplay of various elements which influence the number of projects and associated costs. Among others, economic growth (both nationally and

locally) is a significant parameter determining the ultimate volume of work in any given year.

**DB0007 – Customer Services (Annual):** This recurring budget line allocation is set aside for a range of small-scale projects involving the ordering or replacement of customer service lines. The scope of work is determined by policies, customer demands, and design specifications to fulfill service requests. Projects and work orders within this budget line cover the installation of overhead and underground services for new customers, from the Company's transformer to the customer's meter. This work is typically done separately from extension projects due to construction timelines.

**DA0155 – Add Transformer to Sub 434 and Upgrades at Sub 330 (Completed 2023)**: Substation 434 housed a single 22.4 Mega Volt Amp ("MVA") transformer. The peak summer load registered on the single transformer resulted in inadequate capacity at substation 434 deeming it unable to accommodate switching requirements during contingency scenarios. The neighboring substations could no longer assist with the 18-19 MVA load. To address this issue and enhance contingency capacity, an additional 22.4 MVA transformer was required to distribute the load effectively in addition to distribution double-circuit line exits. Additional upgrades were required at Sub 330 (Ozark NW) to include a new capacitor switcher, capacitor bank relay panel, capacitor bank (relocated from Sub 434), current limiting reactors, current transformers, and associated equipment structures relocated from Sub 434.

**DA0630 – Substation Security (Completed 2022):** The installation of physical security in our substations aims to enhance customer reliability, personnel safety and substation security. These investments encompass a range of physical security

measures. The goal for these investments is to deliver physical security and deterrence systems.

**DR0002 – Replace Bad Order Distribution Poles (Annual):** Liberty is required to have a safe and reliable distribution system. These requirements are supported through a distribution system inspection program in all jurisdictions. This budget line is used to replace or reinforce items identified through the inspections that would jeopardize safety and/or reliability. The work included the replacement of poles, wire, anchors, and other plant items and reinforcement of structures to extend the useful life of the asset. Each identified item is given a priority at the time of the inspection that correlates to the asset's condition. Liberty endeavors to meet the priority schedule; however, constraints with material, labor, or additional analytics can cause remediation to extend beyond the priority schedule.

**DR0004 – Joplin 4kV Distribution Conversion (Completed 2023):** The downtown Joplin 4kV system was served out of three substations which were isolated from all neighboring 12kV circuits and substations. The lower primary voltage 4kV system had the highest available fault current and arc flash values in the region. In previous years, the Company performed conversion projects and moved loads to Subs 145, 372, and 59, but these substations could no longer receive the remaining load. To mitigate the issue and provide increased reliability and limit exposure of outages, the 4kV system was converted to a 12kV system which required transitioning from 16 distribution circuits to six, rebuilding Subs 64 and 284, and conversion of Sub 100.

**DR0209 – Build New Line to Sub 487 Branson (Completed 2022)**: To accommodate the increasing demand in the northern Branson, MO area, it was essential to build a new distribution line and a tie between circuits. This project was crucial to sustain current

service levels, accommodate new customers due to growth in the area, and maintain system reliability.

**DS0130 – Service Center Improvements/Additions (Annual):** This budget line facilitated the construction of a new service center in Aurora and a new service center in Bolivar. The service centers were built to serve as a base of operations for Area-211 (Aurora) and Area-213 (Bolivar) line and substation crews, support staff with offices for construction design, management, and business and community development personnel. The facilities are similar in architecture and were designed to provide a more efficient layout to increase and improve storage capacity. The facilities provide space for staging areas which will allow a quicker response from internal crews during restoration periods, reducing the outage duration for customers. Customer-facing improvements at each facility provide for a better customer service experience and allow for local bill drop-off and payment. The direct testimony of Candice Kelly includes further discussion of the enhanced customer experience. Additionally, the improved traffic flow and reduced backing requirements have reduced the risk of accidents and potential impacts to overall safety. A storm shelter was also included at each facility, which will provide refuge from severe storm events for employees and any community members in and around the facility.

**DB0010 – Misc Dist of OH Lines (Annual):** Recurring budget line is reserved to install and remove/replace overhead distribution assets across system as needed. The projects associated with the budget line are for various small-scale projects in which overhead distribution services to customers are maintained.

**DA0660 – Underground Conductor (Annual):** The recurring budget line for underground conductor is to analyze the system to determine the locations where there

are numerous or long duration underground system faults. Then, a geographic area that is trackable is defined and all of the cable in the area is analyzed to determine the type of cable to then treat/replace if in poor condition. The overall objective is to create a reliable underground distribution system and track condition of underground facilities.

**Transmission Investments:**

**TA0923- Inst 2-69kV Breakers #447 & #258 (Completed 2022)**: This project consisted of expanding the substation footprint to allow the installation of a new, two-bay 69kV standard box structure with four 69kV circuit breakers and five 69kV Power Transformers. The expansion included installing a new prefabricated control enclosure, relay protection panels, a communications panel, and replacement of AC/DC panels. These upgrades enhanced the station's capacity to accommodate the anticipated customer growth, while providing adequate protection and reducing transmission line risk exposure to potential causes of outages.

**TA0936 – Install (2) 161kV Breakers at #432 (Completed 2022):** This project provides positive impacts to multiple substations which are either landlocked or are experiencing high load conditions during peak load scenarios. A lack of alternate source options constrains the ability to switch load to relieve feeders. Inadvertent tripping of equipment has occurred under high loading which further restricted restoration efforts. Impacted substations include: 432, 105, 436, 421, 108, 110, 360, 109, and 395. Specifically, Sub 432 with radial industrial feeders without options for switching; Subs 105, 436 and 421 have shown winter loading issues without switching options, trip events, and conductor issues; Sub 108 and Sub 421 could tie but have voltage issues and cannot support each other. Sub 110 and 360 need distribution relief of a single-sourced industrial customer. Sub 109 and 395 circuits also could use relief

from a distribution reliability standpoint, with the build of Sub 432. The installation of additional capacity at Sub 432 and circuitry to connect to existing infrastructure alleviates problems at the above-mentioned substations and enables greater flexibility, redundancy, and resiliency of the transmission system.

**TA0937 - Install (2) 161kV Breakers at 251 (Completed 2023)**: Greenfield Substation 614 was an aged facility which required complete replacement. The 69kV support structures were wood, and the workspace is confined and contains 69kV oil circuit breakers averaging nearly 40 years in age. The structure also contained two power transformers averaging nearly 60 years in age. One transformer served two distribution circuits at 12.47kV, and the other served two distribution circuits at 4.16kV. The controls and electromechanical relays were housed in a stone building which formerly served as the Greenfield Service Center. The building, constructed in the 1930s, also housed communication equipment for the on-site radio tower. The new substation consists of three 69kV transmission lines and a single 10.5MVA 69/12.47kV power transformer, all configured in a 4-position ring bus. A new distribution structure was constructed to contain four 12.47kV breakers using a 'D2' or in-line structure. Two of these breakers directly feed two 12.47kV circuits, and the remaining two breakers serve two pad-mounted 12.47/4.16kV transformers, which feed the two 4.16kV circuits via G&W Viper reclosers. Once new Sub 498 is in service, the structures inside of Sub 614 will be removed, including above and below-ground conduits, and foundations within a foot of the final grade. The fence and building will remain and the building will continue to house the communication equipment for the radio tower. The substation-related relays and controls will be removed from the building. All oil-filled equipment will be tested for PCBs prior to removal. In the process of removing the

high-profile substation equipment from Sub 614, the 33-0 line will be modified to pass over the old sub site uninterrupted. The conductors for the segment of 08-0 line that is currently between 614 and 498 will be repurposed to become part of a distribution circuit. 08-0 line will then begin at Sub 498, a mile north of its present beginning. Transmission line exits will be constructed from 498 out to the lines running along the west side of Hwy 39.

**TR0001 – Replace BO Trans Poles (Annual):** Routine annual reliability inspections to replace or restore structural integrity through the pole inspection program.

**TR0009 – Misc Rebuilds/Add – Trans Subs:** These are projects used to replace failed transmission equipment in substations that occur throughout the year.

**TR0014 - Install 161kV & 69kV Bus Diff#184 (Completed 2022):** The Company replaced two existing 161/69/12kV autotransformers with a single 100MVA autotransformer relocated from Substation 452. The existing 69kV box structure was replaced with a 69kV 5-bay ring bus structure, which included new switches, potential transformers, and breakers. Temporary reconfiguration of 161kV 91-0 line and the 12kV distribution lines near the substation was required to support a 161/12kV mobile substation. The161kV 92-0 line was temporarily reconfigured to support the 161/69kV mobile substation feeding into the bus which feeds the KAMO Electric Cooperative, Inc. lines.

**TR0150 - Rebuild/New 69kV btw Atlas & Kodiak (Completed 2023):** The distribution circuits fed from ** [redacted]

[redacted]

[redacted]

[redacted]**

Between Monett Sub 383 and Kodiak 471 are three other distribution substations on 30-0 line; those being at Diamond, Wentworth, and Pierce City. To increase reliability and better serve the industrial load in the Kodiak area, a new transmission line from Atlas Junction Sub 109 to Kodiak Sub 471 was constructed. Sub 471 is laid out for a third transmission line and to convert to a ringbus for 161kV. At this time, there are no plans to energize Sub 471 at 161kV, and it will remain energized at 69kV.

**TR0166 – Rebuild EDE Riverton - Neosho 161Kv (Completed 2023):** The rebuild of the Empire Riverton to Westar Energy - Neosho 161kV line was required to comply with the Notice to Construct ("NTC") issued to Liberty on December 13, 2019 (SPP-NTC-C-210549). This NTC required the Company to increase the MVA capacity of the line segment between Riverton, KS and Neosho, KS to reduce SPP congestion and remediate system deficiencies. SPP required a capacity increase to at least 250MVA for the line and terminal equipment. This line portion of the project includes a complete rebuild of the 25.4 miles of 161kV from Riverton to the tie location with Evergy which includes demolition of 201 existing structures, removal of associated existing 161kV conductor, 69kV conductor, and removal of the existing shield wire. The preliminary rebuild consists of 179 new H-Frame double circuit direct embedded structures approximately 100 to 110 feet above grade, one 2-pole double circuit direct embed strain structure, three 2-pole double circuit dead end structures on drilled shaft foundations, and three single circuit direct embed guyed monopole dead end structures. The line is designed for double circuit 161kV with bundled 1195 Aluminum Conductor

Steel Reinforced conductor. Optic ground wire will be installed on the 161kV side and 3/8 inch Extra High Strength seven-strand shield wire will be installed on the 69kV side of the line. Shield wire will not be installed where the 69kV circuit is not present. Evergy provided the tie point structure with the hardware and attachments provided by Liberty on the Company side of the structure. All hardware, grounding, and transmission line accessories were upgraded to Liberty standards.

**TR0910 - Rebuild 69kV Boston to Greenfield (certain phases completed in 2021-2022)**: This project was to rebuild the 69kV transmission line at 33-0 from Sub 614 to Sub 400, Boston Sub 249 to Golden City Sub 251, Golden City Sub 251 to Boston Sub 400, and to install an automated switch at Boston Sub 400. This line needed to be upgraded to meet National Electrical Safety Code ("NESC") Grade B construction and mitigate the vulnerability and integrity of line and structures due to the average age of line being around 70+ years. The automated switch allows for better sectionalizing and faster restoration times in case of outages, which will improve reliability indices.

**TR0134 – Rebld/Recnd 69kV Riverton to Joplin (Completed 2024):** This Project consisted of transmission and substation upgrades. The transmission upgrades included work to rebuild segments of 69-kV transmission lines between Riverton Sub 167 and Joplin Sub 145, constructing a new 69-kV line between Jayhawk Sub 339 and Galena Sub 278, and retiring the existing 69-kV line from Riverton Sub 167 to Galena Sub 278.

The substation upgrades included work at three substations: Joplin Sub 145, Riverton Sub 167, and Jayhawk Sub 339. At Joplin Sub 145, the upgrades include replacing one 69-kV breaker panel. At Riverton Sub 167, the upgrades include replacing one 69-kV breaker and relevant panel as well as installing a new SEL-3530 RTAC and fiber optic connections to the communications panel. At Jayhawk Sub 339,

the upgrades included installing a three-way switch transmission structure and auto-throwover scheme with relevant communication cabinet.

**TR0168 – RBLD LINE 161Kv & OPGW 413 TO 438 (Completed 2023):** The 3.5-mile segment of 161kV transmission designated as 80-1 line connecting substations 413 (Branson Southwest) and 438 (Riverside) in the Branson, Missouri area was built primarily on laminated wood monopoles. A recent patrol of the line revealed heavy woodpecker damage to these structures. 80-1 line is part of a loop-fed transmission system around the greater Branson area, which is a heavily commercialized tourism area. Thus, the project scope included retirement of approximately 28 161kV laminated wood structures between Substations 413 and 438 and replacing them with new steel monopole structures impervious to woodpeckers. H-Frame or 3-pole dead-end structures were required on both ends of the Lake Taneycomo crossing, as the span length is in excess of 1,400 feet with double-circuit distribution supported beneath the transmission line.

**TA0255 - Substn & 69kV insulations (Completed 2022):** Project required a new substation to be constructed three miles north of Humansville, MO (Sub 509) to help serve a 13 megawatt load customer and to allow for improved system redundancy which enhances service reliability. In order to build the substation, a three-acre site was procured near the intersection of Hwy 13 and SW1300 Road. The new substation consisted of a one-bay 69kV transmission box structure, a single 69kV breaker with transformer protection of a new 22.4MVA 69/12.47kV power transformer. A D-2 distribution structure was constructed to contain three 12.47kV breakers. A new control enclosure was required to house the associated relays, controls, and 125 VDC battery array as well as allow for future panel expansion. The construction of the new substation

was coupled with the conversion of approximately 14.5 miles of 34.5kV transmission line from Fairplay East Sub 217 to Collin South Sub 318, through Humansville West Sub 308. The conversion of the transmission line also required upgrades to Sub 217, Sub 318, and Sub 308. The 34.5kV transmission line from Stockton Northwest Sub 324 to Caplinger Sub 304 will be energized at 12.47kV. Approximately 0.75 miles of distribution line build will be required from Stockton AEC Tie Sub 418 to the existing transmission line connecting Subs 324 and 304 which retired Sub 324 and required upgrades to Caplinger Sub 304 including a new single-phase transformer 7.2kV/2.4kV.

## III. GRID RESILIENCE AND INNOVATION PARTNERSHIP PROGRAM

**Q. Can you please describe the recently awarded grant Liberty received from the Grid Resilience and Innovation Partnership Program?**

A. Liberty Utilities recently applied for and was awarded a grant through the Grid Resilience and Innovation Partnerships ("GRIP") Program under the Infrastructure Investment Jobs Act ("IIJA"). The IIJA GRIP program offers up to 50% funding contribution for eligible transmission or distribution Smart Grid and Resilience projects that comply with all applicable program objectives and undergo extensive competitive evaluation. "Project DA" was one of seven Concept Papers Liberty Utilities submitted in late 2022 for the first round of the selection process. Of the five concept papers encouraged to proceed to the next round, Liberty Utilities selected three, including two at Liberty and one at CalPeco in California. Along with CalPeco's Project Leapfrog (AMI deployment), Liberty's Project DA was one of the projects that the Department of Energy ("DOE") selected for funding in October for 2023.

Since the DOE's announcement, Liberty has been working with DOE staff on a series of engagements meant to serve as the project due diligence. This process is

expected to culminate in the signing of a Notice of Funding that will formalize the expectations regarding the project and start the clock on the five-year timeline. Project DA seeks to add approximately 261 new auto-reclosers and further integrates 49 existing reclosers. It also includes prerequisite renewal and capacity upgrade work to adjacent distribution lines (poles, crossarms, conductor) and several upstream substation facilities. In total, approximately 179 circuits across all four states that Liberty serves are expected to be impacted. For further discussion regarding the IIJA grant, please refer to the direct testimony of Company witness Dmitry Balashov.

**Q. Did the Company include the recently awarded grant within its cost of service as submitted with this general rate case application?**

A. No, the Company has not included any investment costs associated with the GRIP grant within this general rate case application as this project will not be completed within the test year or the proposed update period of September 30, 2024.

## IV. SERVICE RELIABILITY AND QUALITY IMPROVEMENTS

**Q. Since the last rate case, has Liberty undertaken any specific projects to improve reliability for Missouri customers?**

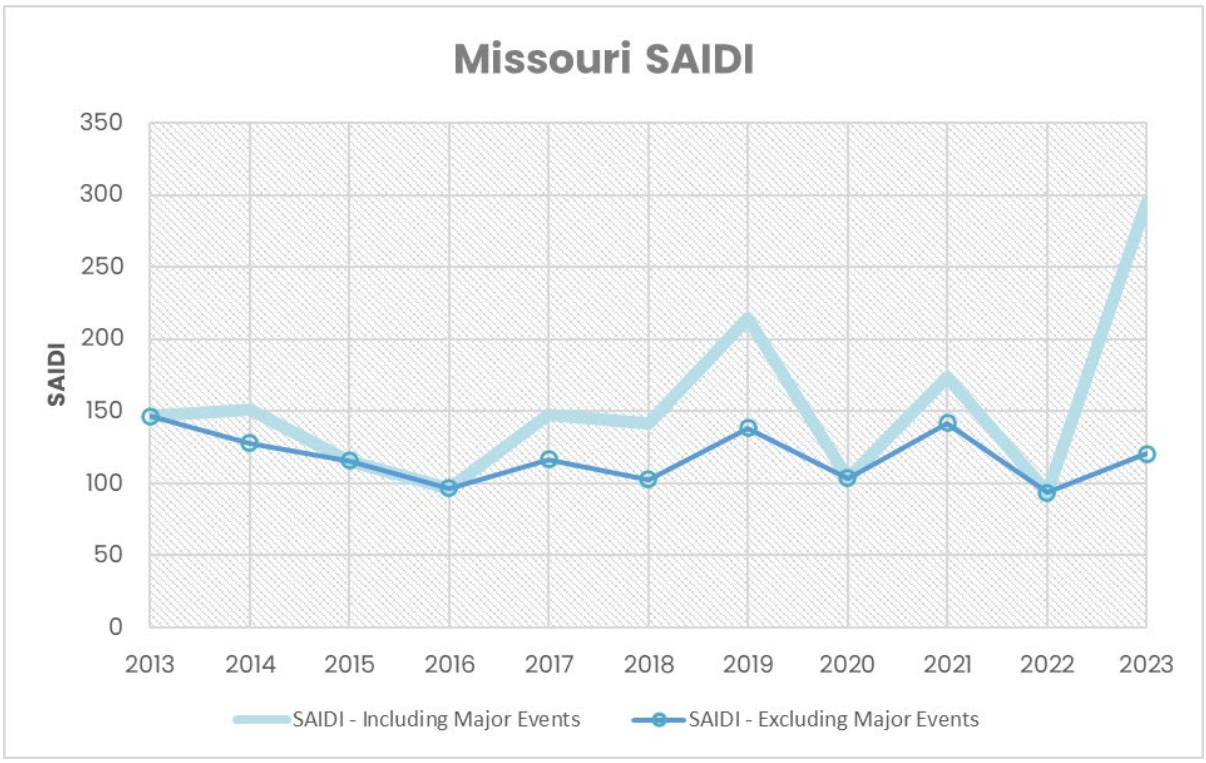
A. Yes. Liberty continues to invest in reliability for its Missouri customers. Since the last rate case, an additional seven circuits were sectionalized, and 2,296 poles were reinforced or replaced. Additionally, 14 substations and approximately 5,100 devices have received wildlife guards to protect against animal related outages.

**Q. Please provide an update on Liberty's SAIDI, SAIFI, and CAIDI results.**

A. Liberty's Missouri electric service reliability metrics for 2021 through 2023 are provided in the table below. For the purpose of this testimony, the following reliability metric definitions apply:

- System Average Interruption Duration Index ("SAIDI") - the total duration of interruption for the average customer during a predefined period of time. SAIDI is measured in minutes and a one-year time period is used for the values presented below.
- System Average Interruption Frequency Index ("SAIFI") - how often the average customer experiences a sustained service interruption over a predefined period of time. A one-year time period is used for the SAIFI values presented below.
- Customer Average Interruption Duration Index ("CAIDI") - the average time duration required to restore service during a predefined period of time. CAIDI is measured in minutes and a one-year time period is used for the values presented below.

| **Missouri Reliability Metrics – Excluding Major Events** | | | |
|---|---|---|---|
| **Year** | **SAIDI** | **SAIFI** | **CAIDI** |
| 2021 | 141.92 | 1.231 | 115.27 |
| 2022 | 93.63 | 0.943 | 99.3 |
| 2023 | 120.62 | 1.054 | 114.45 |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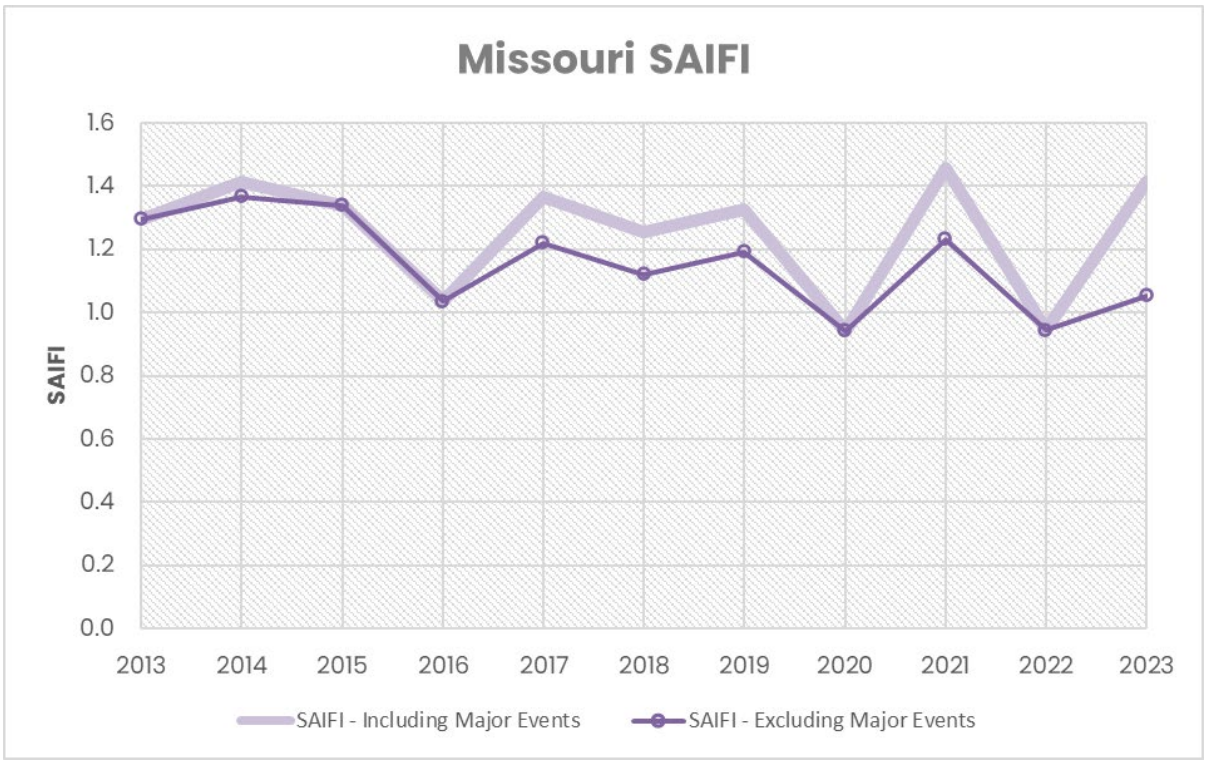
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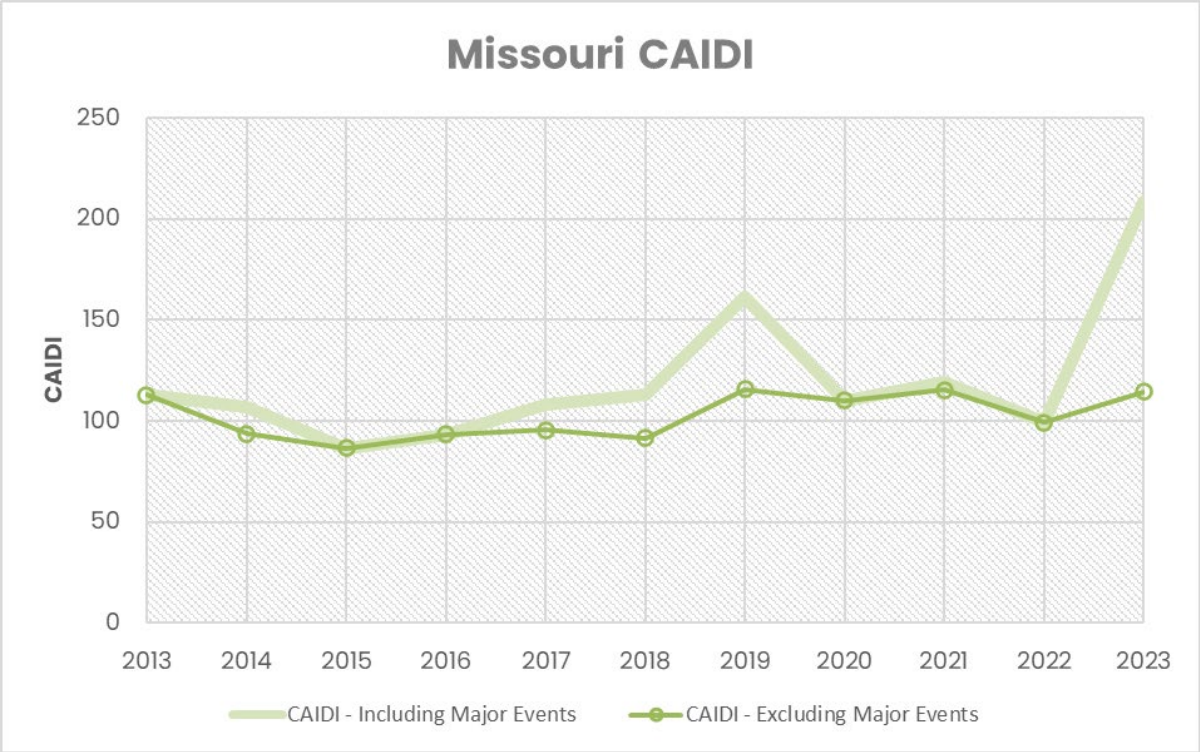


## V. RELIABILITY INSPECTION PROGRAM AND VEGETATION MANAGEMENT PROCEDURES

**Q. In addition to the capital investments discussed above, what other programs help improve system reliability?**

A. The Commission implemented reliability inspection standards in 2008 that dictate the frequency and thoroughness of system inspections and repairs. Since the implementation of that rule, Liberty has elected to implement the Missouri standards for inspections and repairs for facilities in all jurisdictions served by Liberty. The Company performs scheduled inspections and vegetation clearing to maintain the reliability of transmission and distribution circuits. Since the implementation of these standards, approximately 249,000 poles were subjected to a pole ground-line (intrusive) inspection (excavate and drill the pole to determine the condition of the pole), approximately 655,000 poles and devices were subjected to a detail inspection

(visual inspection which includes infrared inspection of pole-mount and pad-mount equipment) and approximately 825,000 poles and devices were subjected to a patrol inspection (visual inspection). Since the last rate case, these inspections have resulted in approximately 2,300 poles being replaced. In addition to the inspections, Liberty also monitors reliability information on a monthly basis to determine if there are trends in reliability statistics which indicate a need for further investigation.

## VI. STIPULATION AND AGREEMENTS

**Q. Has the Company complied with paragraph two in the Second Partial Stipulation and Agreement from Case No. ER-2021-0312 that states, "Empire agrees to update the status of its reliability improvements projects and expenditures in a format similar to Schedule JW-1 of Jeff Westfall's testimony, with Staff and Empire meeting first to discuss the goals of the increased reporting. The additional information will be included with the reliability improvement program annual report currently required by the Commission's rule and will be submitted as a non-case filing in EFIS"?**

A. In an effort to comply with this stipulation, meetings were held with Staff and the Company to determine the details associated with this requirement. At the conclusion of the meetings between the Company and Staff, the earliest report this information could be included was the 2024 Annual Reliability Improvement Program Report. In December of 2023, the Company submitted the additional information requested in the 2024 Annual Reliability Improvement Program Report in an effort to satisfy this requirement. This information will be included in each future report.

**Q. Does this conclude your direct testimony at this time?**

A. Yes.

## VERIFICATION

I, Jeffery Westfall, under penalty of perjury, on this 6th day of November, 2024, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/ Jeffery Westfall