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PROJECT NO. 54467

CY 2022 ELECTRIC UTILITY SERVICE QUALITY REPORTS UNDER 16 TAC § 25.81	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

SOUTHWESTERN ELECTRIC POWER COMPANY'S ADDITIONAL REPORTING RELATED TO DISTRIBUTION FEEDER SERVICE QUALITY

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Southwestern Electric Power Company (SWEPCO or the Company) submits this report pursuant to the Public Utility Commission of Texas (Commission) Order of December 15, 2022 in Project No. 54467. In its Order, issued in response to Commission Staff's December 5, 2022 memorandum in Project No. 52937, the Commission directed SWEPCO to provide additional reporting related to distribution feeder electric service quality performance by July 1, 2023. In accordance with that Order, this report is timely filed and provides the following analyses or information requested by the Commission and Commission Staff:

- analysis of the primary causes contributing to SWEPCO's system average interruption duration index performance (SAIDI) since 2014, including identification of the causes of interruptions as well as major contributing factors to the average length of those interruptions;
- information related to the efficacy of SWEPCO's grid modernization and repair and replacement (asset renewal) programs, including whether those programs are reactive or proactive and how they can be leveraged to curb the decline in system SAIDI performance;
- assessment of whether SWEPCO's grid modernization programs have contributed to a reduction in the duration of interruptions of service and potential adjustments to those programs to more directly address the root cause of interruptions; and
- analysis regarding the increased share of forced interruptions of service related to weather and the steps that SWEPCO intends to take to mitigate the impact weather has on its distribution system, along with descriptions of the three weather events that contributed most to the actual system average SAIDI in 2020 and 2021.

The reliability of SWEPCO's distribution system depends on preventing and avoiding disruptions, withstanding disruptions from the system's native environment when they cannot be prevented, and recovering and returning to normal after a disruption has occurred and caused a service outage. Accordingly, SWPECO's reliability strategy focuses on right-of-way (ROW) integrity to prevent disruptions, asset integrity and performance to mitigate disruptions when they occur, and advanced applications to enhance recovery from disruptions. Each component of

SWEPCO's reliability strategy is a prerequisite for the next, with ROW integrity being the cornerstone that enables implementation of asset renewal and advanced technology applications. For operability enhancements to improve a circuit's or lateral's reliability, it is first necessary for the circuit or lateral itself to be a predictably operating system. Operability enhancements will not achieve the desired result if vegetation or other disturbances consistently interfere with the system.

SWEPCO's distribution system in Texas encompasses 10,000 square miles and includes more than 8,500 miles of overhead conductor. SWEPCO's service area has a low customer density, with customers widely distributed over a large area. As a result, it takes more line-miles to serve end-use customers than in more densely populated service territories. The terrain in northeast Texas includes rolling hills, lakes, rivers, streams, and heavy vegetation fostered by high precipitation rates, including large timber consisting of tall pines and numerous hardwoods. Additionally, the service territory is subject to tornadoes, straight-line wind damage, and ice storms.

Vegetation is the leading cause of outages in SWEPCO's service area. Taken together, vegetation and weather have accounted for more than two-thirds of the Customer Minutes of Interruption (CMI) on SWEPCO's system during the last nine years. They stand out as the dominant cause of the Company's declining System Average Interruption Duration Index (SAIDI) performance during the period from 2014 through 2022. All other causes have been managed flat by SWEPCO during this period.

The decline in performance relating to vegetation and weather is attributed to a combination of contributing factors. Among them is an increase in the cost of forestry labor, which reduces the amount of vegetation management that can be performed on a dollar-for-dollar basis. A second factor has been the Company's efforts to improve vegetation management for the worst-

performing circuits. Such efforts improve an individual circuit's performance, but do not noticeably impact system-wide performance. To mitigate these factors, SWEPCO has adjusted its vegetation management program to balance its vegetation strategy with other aspects of its overall reliability strategy. SWEPCO also successfully requested increased funding during recent rate cases. The increased funding has enabled SWEPCO to increase vegetation miles trimmed each of the last three years.

As described in further detail in this report, SWEPCO has been refining its reliability strategy to improve system performance. SWEPCO is making the distribution system stronger, predicated on improving the underlying integrity of ROWs through vegetation management:

- SWEPCO has been taking steps to improve management of vegetation, for example by applying herbicide subsequent to trimming to inhibit growth within the ROW, through greater use of mechanized trimming to maximize efficiency, and by requesting Commission authorization during SWEPCO's most recent base rate case for additional funding dedicated to vegetation management.

- SWEPCO has been hardening its facilities to make the system more durable and less susceptible to damage during inclement weather. Examples include more rugged poles, heavier conductor supports, and shorter spans with lower conductor tensions.

- SWEPCO is implementing advanced applications on its distribution system. Grid modernization tools such as Distribution Automated Circuit Reconfiguration (DACR), line sensors, and Supervisory Control and Data Acquisition (SCADA) leverage technology to improve operating efficiency when disruptive events occur to minimize the impact of future outages.

The components of SWEPCO's reliability strategy are intended to address system SAIDI. SWEPCO is seeing improvement in overall CMI, and the Company's expectation is to improve its forced outage rate, as well. Upcoming plans include more than 2,000 combined miles of vegetation trimming and herbicide during 2023, investment in reliability enhancements such as circuit tie lines, and investigation into the potential application of recently enacted House Bill 2555 relating to system resiliency planning. SWEPCO is available to discuss the contents of this report with the

Commission upon request. The remainder of this report provides details of SWEPCO's approach and addresses the Commission's directive in Project No. 54467.

PROJECT NO. 54467

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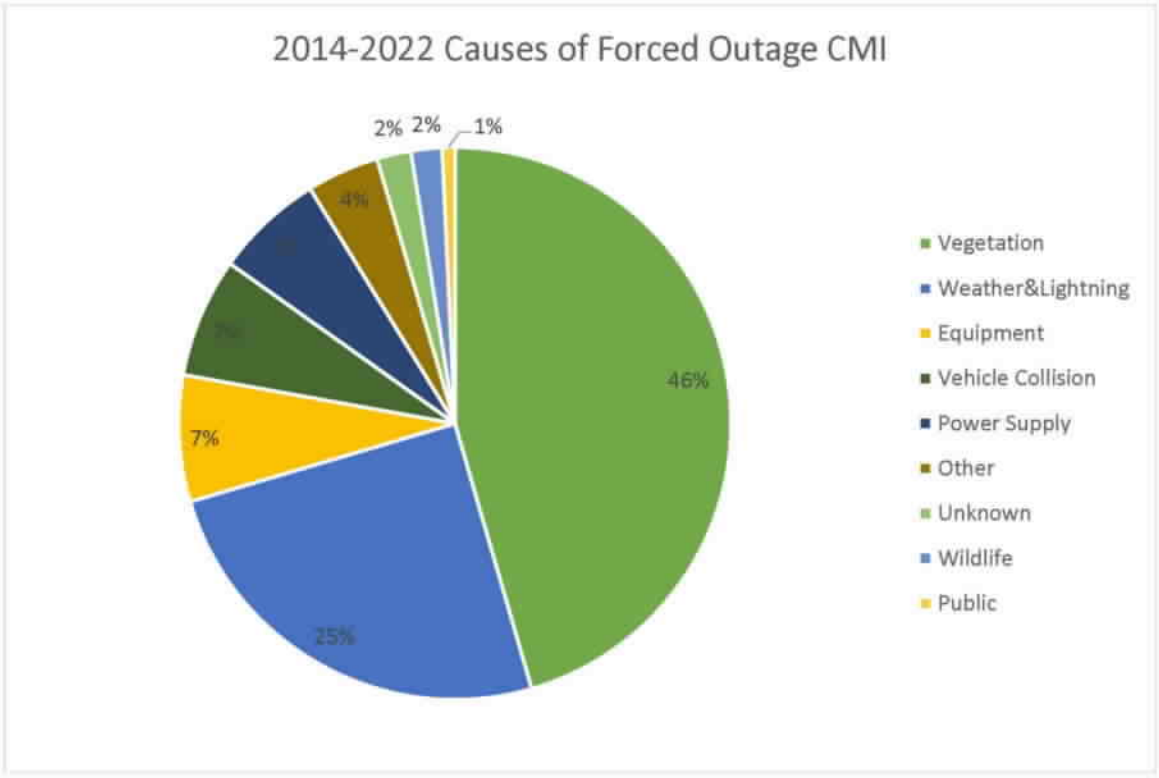
SOUTHWESTERN ELECTRIC POWER COMPANY'S ADDITIONAL REPORTING RELATED TO DISTRIBUTION FEEDER SERVICE QUALITY

I. Distribution Feeder Interruptions (2014-2022)

A. Primary Causes of Interruptions

The primary causes affecting SWEPCO's system reliability since 2014 are vegetation (46%) and weather/lightning (25%), which together account for approximately 70% of the total forced outage CMI over the period, as shown in Figure 1 below.

Figure 1. Cause Codes of Forced Outages from 2014 through 2022.



Because weather and lightning are strongly interrelated with vegetation factors influencing the system, it is reasonable to conclude that vegetation-related impacts have accounted for more than 46% of the forced outage CMI on the distribution system over the nine-year period.

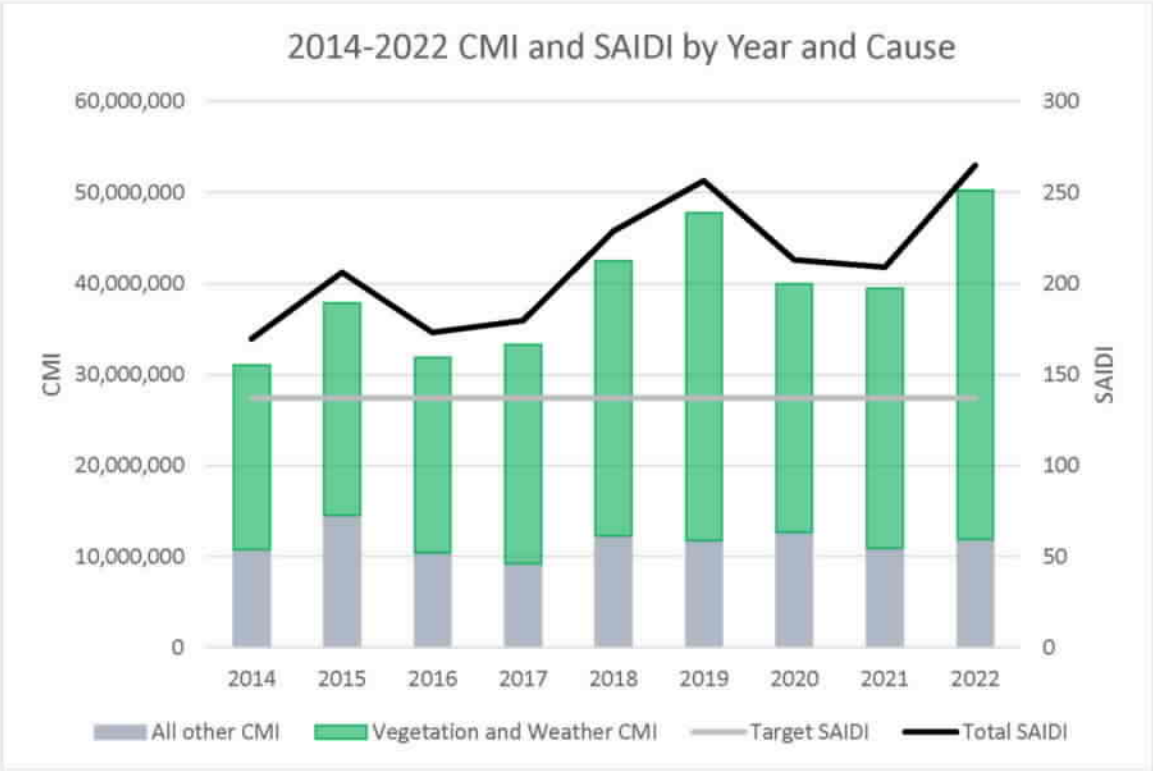
B. Factors Contributing to Duration of Interruptions

Vegetation-related outages include both tree in right-of-way (TIR) and tree outside right-of-way (TOR) and are split roughly evenly between these two causes. Vegetation near distribution lines increases the impact from weather, as trees, limbs, and branches are often damaged during storms, resulting in outages. Additionally, the presence of vegetation near the distribution system increases the likelihood of lightning-caused damage to structures and equipment.

SWEPCO's Texas service territory, primarily in East Texas, provides an ideal environment for large vegetation growth given its indigenous species, mild climate, high precipitation rate, and soil conditions. These conditions support a biome that can make vegetation management on the distribution system more challenging due to the size and diversity of vegetation and its relatively fast growth rate as compared to other geographic regions of Texas. Examples of tree species in SWEPCO's service territory include pine, elm, cottonwood, American sycamore, ash, and oak, many of which grow quickly and reach heights of 100 feet. With some distribution ROW measuring 30 feet wide, a 100-foot-tall tree can easily impact a distribution line, even if the tree is significantly outside of the ROW. The vegetation structure is diverse, from pine-oak stands to swampland-bottomland hardwood forests. While coastal regions may experience similar amounts of rainfall, other factors such as sandy soil, higher winds, and atmospheric salt content do not support the growth rates and species seen in SWEPCO's Texas footprint. The growth rate of vegetation in East Texas creates a unique challenge for keeping vegetation cleared as compared to other parts of the state.

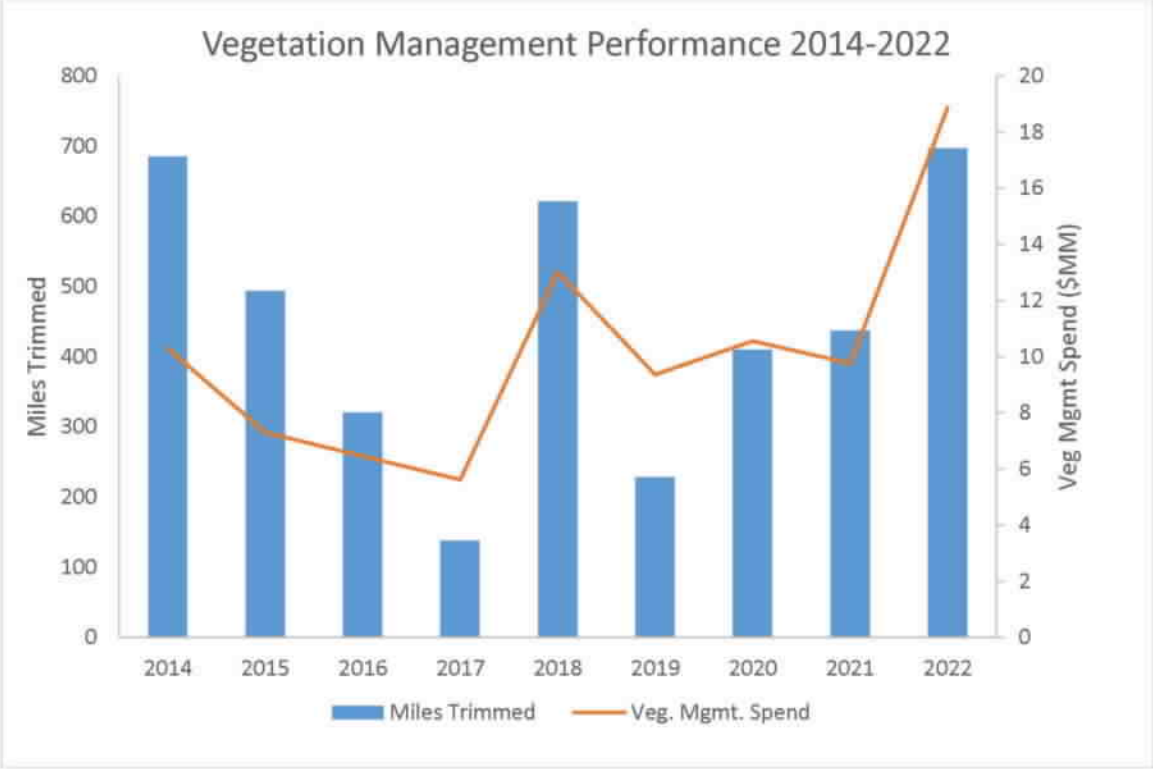
This challenge has driven vegetation-related outages to stand out as the dominant cause for the decline in system SAIDI performance during the period from 2014-2022. As illustrated in Figure 2 below, when compared to the SAIDI target of 137.17, all other outage causes and their resultant CMI and SAIDI have been kept flat over the period with an average SAIDI contribution of only 62 minutes.

Figure 2. CMI and SAIDI by Year and Cause.



While the non-vegetation-related outages have predominantly remained flat, vegetation-related outages have increased over time due to a combination of contributing factors. As a result of these factors, the amount of vegetation cleared began to decrease in 2015. Since 2019, however, there have been increases in vegetation miles trimmed due, in part, to the Commission-approved vegetation management funding increases achieved through recent rate cases, as illustrated in Figure 3 below.

Figure 3. Vegetation Management Performance Statistics 2014-2022.



The most significant factor experienced during this timeframe is a market-driven labor shortage that drove increasing labor costs from SWEPCO's vegetation management business partners. This factor reduces the amount of vegetation management that can be performed per dollar spent. This has a lasting influence on SAIDI performance because results from vegetation clearing are delayed in terms of showing up in the system-wide metrics.

A second factor stems from SWEPCO's clearing efforts related to mitigation of worst-performing circuit performance. A significant portion of SWEPCO's vegetation clearing efforts during the 2014-2022 period have been focused on the worst performing circuits, which often do not significantly impact overall system performance. Worst-performing circuits are typically more rural and, therefore, tend to be driven heavily by vegetation-related outage causes. Rural circuits are also more likely to be less dense in population, limiting the weighting of the improvements

that impacts the overall system-wide performance due to averaging of customers interrupted and the frequency of those interruptions. A circuit in a less densely populated area may see significant improvement from tree trimming and other vegetation management but the impacts may be experienced by only a small number of customers. Significant improvements in worst-performing circuits frequently demand extensive vegetation management. SWEPCO has successfully managed worst-performing circuits over the past several years, yet these improvements in circuit-level SAIDI do not correlate to the same improvement in system-level SAIDI. SWEPCO is striving to balance its ongoing vegetation strategy aimed at worst-performing circuits with other aspects of its overall reliability strategy as described in the next sections of this report.

II. Distribution Reliability

A. SWEPCO's Distribution Reliability Strategy

The reliability of the system is a three-part function. First, the most dominant factor is the system's ability to prevent and avoid outages, or its ability to exist and operate in its native environment with minimal interaction or interference from disruptive factors. The second factor is the system's resilience, or its physical integrity and ability to withstand interaction from disruptions beyond the extent from which they can be prevented. Finally, the third factor is system recovery, or its ability to recover and return to normal after a disruptive event can no longer be prevented and causes an outage. Together, these three factors define the resultant reliability of the distribution system.

SWEPCO's reliability strategy acknowledges this three-part function in the same order, recognizing that the most effective way to improve and sustain reliability is to mitigate and control those disruptive factors. SWEPCO made noteworthy adjustments to its distribution improvement

planning strategy in 2022. This new strategy has been designed to produce greater reliability improvements through an improved planning process that recognizes the dominant factors that define the distribution system's capabilities. In the past, SWEPCO generally planned reliability programs separately from one another. Whereas the new strategy recognizes that addressing these key factors with an integrated approach yields better results because these factors are prerequisites for one another, and are necessary to achieve in order to realize greater reliability improvements from additional improvement efforts. These three key factors are:

- right-of-way integrity;
- asset integrity and performance; and
- operability enhancements and more advanced applications.

The planning strategy integrates seven categories, as shown in Figure 4 below:

Figure 4. Reliability Planning Programs and Strategies.

1 - Reliability Enhancement	**Reliability Prescriptions**
	Repeat Outage Mitigation
	OH Line Relocations
	Circuit Ties
	Sectionalizing
	Small Wire Replacement
2 - Grid Modernization	**DACR**
	Line Sensors
	SCADA
3 - Risk Mitigation	**Pole Inspection**
	OH Circuit Inspection
	UG Circuit Inspection
	Network Inspection
4 - Asset Renewal	**Pole Replacement**
	OH Circuit Repair
	UG Circuit Repair
	OH Conductor Replacement
	URD Cable Replacement
	Cutout Replacement
	Recloser Replacement
	Breaker Replacement

	Station Equipment Replacement
	Network Equipment Replacement
5 - Capacity Assurance	**Circuit Improvements**
	Substation Transformer Upgrades
	New Source Projects
6 - Vegetation Management	**ROW Clearing**
7 - Non-Traditional	**New Technology, DERs, NWAs**

Some programs, such as the pole replacement and inspection programs, are reactive in nature due to their activities being driven primarily by cyclical inspections identifying end-of-life or other unfavorable conditions. These activities tend to be more local in nature and tend to address smaller individual issues. Repeat outage mitigation is another effective program in which reliability needs are identified by the repeated operation of a clearing device, causing certain customers to experience multiple interruptions. This program tends to be reactive in nature because the forced outages and resulting CMI have already been realized.

Other programs, however, are proactive in nature because they are not necessarily triggered by specific outages or other specific conditions. Some are intended to address areas of load growth to ensure sufficient capacity on the system to serve evolving customer needs. The programs in the grid modernization category, such as DACR, line sensors, and SCADA, are all proactive efforts to leverage advanced technology to improve efficiency in operating the distribution system when future events occur, with the goal of minimizing impacts of future outages.

SWEPCO's vegetation management, asset renewal, and grid modernization programs are discussed further below.

B. Vegetation Management

SWEPCO's distribution reliability planning strategy recognizes that vegetation management and right-of-way integrity is the most dominant factor in distribution system performance and, as such, is the cornerstone of reliability improvement planning. Therefore, one

goal of the strategy is to plan, schedule, and execute projects and improvement efforts in this precise order, with right-of-way performance being the primary prerequisite. For asset renewal efforts to demonstrably improve reliability on their own, it is necessary to first have strong right-of-way integrity. Therefore, SWEPCO is now planning asset rehabilitation and replacement projects for execution behind vegetation management efforts on respective circuits, whereas in the past such projects may or may not have been planned in the wake of right-of-way clearing. This sometimes made it difficult to see the reliability benefit from the work and in some cases necessitated deviation from the vegetation management plan to make room for the project. Similarly, for operability enhancements or advanced technology applications to produce incremental reliability improvement, it is first necessary for the circuit or lateral itself to be a reliable, predictably operating system. Due to tree-related outages being the highest contributor to CMI on worst-performing circuits, line improvements are planned and executed only after the circuit has been trimmed. Line improvements are then designed and built with storm-hardened characteristics, and the result is a high-performing right-of-way supporting a high-performing distribution system.

Because the cost of vegetation management has been increasing, SWEPCO has been adjusting its program accordingly. SWEPCO requested and received increased funding during recent rate cases and has focused on vegetation management performance improvement initiatives in order to maintain and improve reliability for its customers. To increase efficiencies, SWEPCO morphed the bid trimming program into a Time and Material (T&M) program. The T&M program allows SWEPCO to maintain close control of vegetation management operations and deploy resources in a more cost-effective way for customers. In this manner, SWEPCO can employ more

mechanized equipment, such as Jarraffs, which are highly effective in more rural rights-of-way and can cover more system miles yearly.

SWEPCO continues to support a move toward a cycle-based vegetation management program over time that balances cost impacts to customers with reliability improvements. To align the vegetation management program to a cycle-based program as much as possible, SWEPCO continues to expand its herbicide program to inhibit growth on circuits that have been trimmed. This slows vertical growth from within the right-of-way, delaying the need for subsequent trimming and reducing future trim costs, while also improving access and speeding up restoration efforts. SWEPCO monitors circuits that are on the spray program to determine when the next trim will be needed thereby placing it on a cycle. While a fully optimized trim cycle would be ideal, this modified cycle approach balances cost and reliability for SWEPCO customers.

For SWEPCO, vegetation management is the most effective means of maintaining a stable, predictable distribution system. Without it, reliability improvements from other activities such as grid modernization and asset renewal are not predictable, as the benefits from those capabilities are almost always masked by the negative impact of tree caused outages.

C. Grid Modernization & Asset Renewal

SWEPCO's grid modernization and asset renewal programs targeting worst performing feeders are predicated on vegetation management. Further, SWEPCO's strategy to leverage reliability improvements from grid modernization applications has evolved since its initial program was chartered in 2018. As described earlier in this report, line improvements are designed with storm hardened characteristics and implemented after right-of-way integrity has been established through vegetation management. This evolving strategy is the result of observing both the benefits realized from the program, as well as recognizing opportunities to gain better results

by coordinating asset renewal investments and operational enhancements with the vegetation management program.

An example from SWEPCO's integrated planning strategy is the installation of reclosing devices (Trip Savers) on laterals that experience outages of unknown cause. This has been very effective on line sections with lower customer counts in more rural locations and has produced significant reliability improvements.[1] SWEPCO piloted this particular application in its Longview District in 2022, installing Trip Saver reclosers in place of fuses at 26 strategic locations. Over a ten-month period, these devices saved a calculated 418,626 CMI, and prevented at least 27 sustained outages to 842 of the 2,161 customers included in the pilot project.

Distribution Automated Circuit Reconfiguration, or DACR, is another advanced operational strategy that SWEPCO has integrated into its grid modernization efforts. DACR utilizes teams of electronic reclosing devices that communicate with one another during and immediately following a fault event on the system to isolate the fault to the smallest line section as is feasible, and then reconfigure the circuit or circuits to restore power to as much of the system as possible. DACR does not prevent outages from occurring, but rather it works to minimize the total impact of outages to smaller groups of customers when those outages do occur. SWEPCO has installed DACR technology on 11% of the distribution circuits in Texas, including operational areas of Longview, Carthage, Henderson, Texarkana, and Mount Pleasant. The efficacy of DACR continues to be seen in the system that was placed in service in 2021 in the City of Longview. The system has operated in 12 outage events and has reduced the overall count of customers affected by more than 16,000, saving more than 1.8 million CMI, as shown in the table below:

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[1] A Trip Saver is an automatic reclosing device used in place of the traditional fuse link on lateral or branch circuits. When operating for a transient or temporary fault condition, in most cases the device prevents a sustained interruption and eliminates the need to roll a service truck for every operation.

Figure 5. Texas DACR Events and CMI Saved.

Date of Event	Substation	Circuit	Customers Avoided Sustained Outage	CMI Saved
1/11/2021	Harrison	11870	1,667	596,786
5/11/2021	Pliler	10370	2,974	324,166
10/28/2021	Harrison	8040	699	89,472
3/8/2022	Pliler/Harrison	11870	1,675	145,725
5/3/2022	Harrison	11870	1,626	224,388
6/10/2022	Pliler	10370	2,952	256,824
8/22/2022	Pliler	10370	585	67,275
11/4/2022	Pliler	12470	4	108
11/4/2022	Pliler	12470	4	44
2/1/2023	Pliler	10370	2,069	68,277
3/2/2023	Harrison	11870	1,201	79,266
5/14/2023	Pliler	10370	585	10,530
			16,041	**1,862,861**

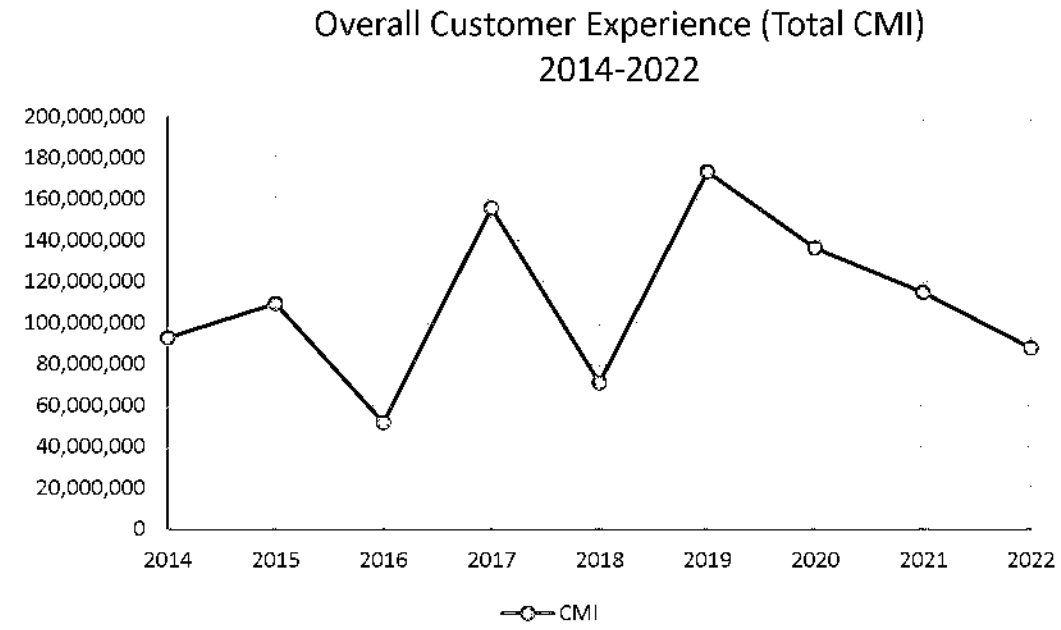
Storm hardening is another integral component of SWEPCO's grid modernization and asset renewal strategy. SWEPCO defines the term "storm hardening" as it applies to the distribution system as the collective efforts to strengthen the infrastructure that makes up the system, so that it is more durable, more stable, and less susceptible to damage during weather-caused disruptions. SWEPCO systematically began integrating storm-hardened design standards into distribution line construction, going beyond the loading criteria specified by the National Electric Safety Code, in 2014, and its reliability strategy today aims to maximize the impact of storm-hardened design through application across a variety of programs, including greenfield construction, asset replacement programs, and prescriptive solutions to worst-performing circuits. The heavier loading criteria produces a hardened line design that is typically characterized by heavier class poles, heavier conductor supports (cross-arms, etc.), lower conductor tensions, and shorter spans as compared to the previous loading criteria. For example, the pole replacement program now implements a more rugged design rather than simple like-for-like replacements. Conductor replacements now require full dead-end-section redesign, essentially redesigning the

system in scope to a much more rugged, hardened design rather than simple conductor replacements neglecting other structural factors. Not only is the hardened design capable of withstanding heavier loadings from wind and ice, but the design also adds a resiliency factor to the system by purposely designing the conductor as the point of failure in a structural overload condition such as a tree falling on a line. By saving the structure from failure, restoration and recovery is less complex, requires less work, and leads to faster restoration of system operations. The positive impacts of storm hardening are beginning to be seen in the overall customer experience, as the system has seen decreasing total CMI for the past three years.

III. Efficacy of Reliability Programs

Although forced outage CMI and SAIDI have shown an increasing trend over the past nine years, overall CMI representing the total customer experience indicates a consistent 3-year decreasing trend, as illustrated in Figure 6 below:

Figure 6. Total CMI representing total customer experience.



The overall decrease in total CMI indicates improvement of the overall customer experience. This can be attributed in part to a reduction in the amount of overall storm damage sustained, due to system improvements. These improvements include vegetation management activities subsequent to SWEPCO's two most recent rate cases (Docket Nos. 46449 and 51415), along with improvements in reliability program coordination and strategy implementation. Through these efforts, SWEPCO is improving overall CMI and expects to improve forced outage results, as well.

IV. Mitigation of Weather Related Outages[2]

The share of weather-related interruptions as a percentage of the total number of interruptions on SWEPCO's system increased from approximately 25% in 2014 and 2015 to approximately 35% in 2016 and beyond. As described earlier in this report, there is a relationship between vegetation-caused outages and weather-caused outages on a utility's delivery infrastructure. Vegetation near distribution lines increases the impact from weather, as trees, limbs, and branches are often damaged during storms, resulting in outages. Additionally, the presence of vegetation near the distribution system increases the likelihood of lightning-caused damage to structures and equipment. Taken together, the percentage of weather-related and vegetation-related service interruptions on SWEPCO's system has remained between 63% and

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[2] As part of its settlement in Docket No. 55116, SWEPCO agreed to analyze and then report to the Commission about the increased share of forced interruptions of service related to weather and the steps that SWEPCO intends to take to mitigate the impact weather has on its distribution system. *See Settlement Agreement and Report to the Commission Regarding Southwestern Electric Power Company's Violations of 16 TAC § 25.52, Related to Reliability and Continuity of Service for Reporting Years 2020 and 2021*, Docket No. 55116, Settlement Agreement and Report to the Commission at 9, ¶ 32 (June 9, 2023). SWEPCO also agreed to provide descriptions of the three weather events that contributed most to the actual system average SAIDI in 2020 and 2021, including the respective impacts of each event. *Id.*

74% from 2014 through 2022, with an average of 68%. The lowest years were 2014 and 2015 (64% and 63%, respectively), followed closely by 2020 and 2021 (67% and 66%, respectively).

As a result of this relationship, the steps SWEPCO is taking to address vegetation on its distribution system will directly impact its risk of weather-related outages. The transition to the T&M approach to vegetation management, greater use of mechanized trimming, application of herbicide subsequent to trimming to inhibit growth within the ROW, and additional spending are intended to reduce the number of outages caused by vegetation and weather by improving ROW integrity. Furthermore, improved ROW integrity enables other measures undertaken by the Company to protect customers from service interruptions, such as hardening of distribution facilities and advanced applications including DACR. System hardening makes SWEPCO's infrastructure more durable and less susceptible to weather-related damage. Advanced applications improve operating efficiency when disruptive events occur. SWEPCO's strategy for improving reliability is detailed in Section II of this report.

SWEPCO provides the following impacts and descriptions of the events contributing most to forced outage SAIDI in 2020 and 2021. The top three events in 2020 took place January 10, April 24, and July 5. The top three events in 2021 took place February 17, May 28, and July 2.

Figure 7. Top forced outage SAIDI events of 2020 and 2021.

Year 2020	CMI Impact	Year 2021	CMI Impact
1/10/2020	3,572,465	**2/17/2021**	3,513,294
4/24/2020	2,361,189	**5/28/2021**	1,755,154
7/5/2020	2,029,434	**7/2/2021**	1,115,136

On January 10, 2020, winds peaked as high as 60 mph to 70 mph, causing outages to more than 8,000 customers. SWEPCO deployed 14 line crews to restore the damage. The assessment yielded 13 broken poles, eight damaged transformers, multiple damaged or broken cross-arms, and numerous spans of wire downed or damaged. Some of these locations were inaccessible, which

required the use of specialized equipment to mitigate the outages. SWEPCO was able to restore service to its customers within the first 24 hours of the storm.

The impact of the Spring wind storm of April 24, 2020 was spread across the Texarkana and Mount Pleasant areas. The storm caused outages at several substations and across numerous circuits, which peaked at approximately 3,200 customers affected at 11 PM. The restoration effort began with troublemen assessing damages and isolating the affected areas while restoring the less impacted customers. Forestry and line crews replaced 13 broken poles, seven broken cross arms, 22 broken insulators, downed wires, and six damaged transformers across the area. Many job locations needed trees removed before repairs could be performed. SWEPCO's supply team moved hardware and supplies across the affected areas to provide needed resources. SWEPCO restored customers in less than 24 hours.

On July 5, 2020, SWEPCO experienced an unexpected late evening thunderstorm in the Longview area. SWEPCO began assessing the storm damage immediately after the storm with the help of nine troublemen and two line crews. After the assessment was completed, SWEPCO called in six additional line crews. At the peak of this storm, nearly 4,800 customers were without power. SWEPCO restored affected customers in the first 24 hours.

On February 17, 2021, portions of the SWEPCO service area were subjected to sleet, freezing rain, and as much as eight inches of snow. SWEPCO experienced extensive damage from this event in Louisiana, however in Texas fewer than 3,000 customers experienced an outage. Most outages were a result of broken wire or trees on lines due to the weight of wet snow. SWEPCO deployed 13 troublemen and six line crews, but poor road conditions impeded travel. Full restoration of the affected Texas customers occurred within 48 hours.

On May 28, 2021, an overnight thunderstorm interrupted service to approximately 3,600

customers. SWEPCO restored power to the affected customers within 24 hours. The outages were primarily the result of lightning, leading to burnt fuses, broken wire, three damaged transformers, and four broken poles.

Thunderstorms occurring July 2, 2021 caused outages that peaked slightly higher than 6,500 customers. The storm system persisted for two days, and SWEPCO was able to address outage cases as the event was occurring. Outages were caused predominantly by lightning, which burned out fuses and forced breakers to lock open. SWEPCO's line crews replaced transformers and other electrical equipment that was damaged by lightning, such as switches and insulators. There were also a limited number of instances of broken wire caused by lightning.

V. Future Resiliency Efforts and House Bill 2555

The Legislature recently expressed support for the promotion of measures to enhance the state's electric delivery infrastructure by its adoption of House Bill 2555 relating to system resiliency planning. This new law offers additional tools by which to improve system resiliency and overall service reliability for customers. Measures that may be considered in a utility's resiliency plan include storm hardening, grid modernization, flood mitigation, vegetation management, and others. SWEPCO is aligned with the Legislature and the Commission in the desire to improve reliability for customers and to further protect electric infrastructure from extreme weather conditions. As part of its efforts to improve overall reliability, the Company is evaluating the new law and anticipates proposing a resiliency plan under the new law to enhance right-of-way integrity. Under the new law, the Commission will review a utility's plan prior to implementation. SWEPCO views the Legislature's action as a potentially valuable addition to its reliability strategy.