MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers – Volume 1 of 3: Safety and Reliability

Meeting Date	**February 19, 2026**		**Agenda Item ***6**
Company	Northern States Power Co. d/b/a Xcel Energy; Minnesota Power; Otter Tail Power Co.		
Docket No.	E-002/M-25-27 **In the Matter of Xcel Energy's 2024 Annual Safety, Reliability and Service Quality Report** E-015/M-25-29 **In the Matter of Minnesota Power's 2024 Annual Safety, Reliability, and Service Quality Report** E-017/M-25-30 **In the Matter of Otter Tail Power's 2024 Annual Safety, Reliability, and Service Quality Report**		
Issues	Should the Commission accept Minnesota Power, Otter Tail Power and Xcel Energy's 2024 Annual Safety, Reliability and Service Quality Reports?		
Staff	Christian Noyce	Christian.noyce@state.mn.us	651-201-2215

✓ **Relevant Documents**	**Date**
25-27 Xcel Energy	
Xcel – Safety, Reliability, and Service Quality Report (Parts 1-3, Attachments A-S)	April 1, 2025
Xcel – Errata Letter, Tables 28 & 29	April 7, 2025
Environmental Law and Policy Center – Initial Comment	July 11, 2025
DOC DER – Initial Comment	July 15, 2025
Xcel Energy – Reply Comment	August 8, 2025
Public Comment – B. Harrison	August 14, 2025

✓ **Relevant Documents**	**Date**
Public Comment – S. Kinmounth	September 23, 2025
Public Comment – M. Leintz	September 23, 2025
Public Comment – P. Robbins	October 21, 2025
Public Comment – M. Spieler	October 29, 2025
DOC DER – Supplemental Comment	November 6, 2025
Xcel – Supplemental Compliance Filing	November 7, 2025
Xcel – Supplemental Compliance Filing Addendum	November 19, 2025
Public Comment – M. Brown	December 3rd, 2025
City of Edina – Supplemental Comment	December 11, 2025
DOC DER – Supplemental Comment	December 15, 2025

25-29 Minnesota Power

Minnesota Power – Initial Filing (Safety, Reliability, and Service Quality Report)	April 1, 2025
DOC DER – Initial Comment	July 11, 2025
Minnesota Power – Reply Comment	July 25, 2025
Minnesota Power – Supplemental Comment	August 25, 2025
DOC DER – Supplemental Comment	November 3, 2025
Minnesota Power – Compliance Filing	November 21, 2025
DOC DER – Supplemental Comment	December 15, 2025

25-30 Otter Tail Power

Otter Tail Power – Initial Filing (Safety, Reliability, and Service Quality Report)	April 1, 2025
Otter Tail Power- Supplemental Filing	June 10, 2025
DOC DER – Initial Comment	July 11, 2025
PUC- Ex Parte Communication	July 18, 2025
Otter Tail Power – Reply Comment	July 25, 2025
Otter Tail Power – Report	July 30, 2025
Otter Tail Power – Supplemental Filing Attachment 1	November 3, 2025
DOC DER – Supplemental Comment	November 6, 2025
Otter Tail Power – Supplemental Amendment	November 24, 2025
DOC DER – Supplemental Comment, Amended	December 15, 2025

Contents

I. Introduction

Each year Minnesota's Investor-Owned Utilities (IOUs) submit Safety, Reliability, and Service Quality (SRSQ) Reports. For the past several years, Commission Staff split the reports into two sections. The Service Quality portion will be summarized in the separate Volume 2 of the briefing papers. Volume 1 includes the Safety and Reliability metrics as laid out in Minnesota Rules, Chapter 7826, Electric Utility Standards, with specific attention to the reporting requirements outlined by Minn. Rules 7826.0400 to 7826.0600 and order points from previous years.[1]

In its January 13, 2025, order accepting the electric utilities' 2023 SRSQ reports, the Commission set utility reliability standards for 2024 that benchmark to the Institute of Electrical and Electronics Engineers (IEEE) working group results.[2] The Commission required utilities to file a supplement to their 2024 SRSQ reports within 30 days of publication of the IEEE results,

[1] See Attachments A and B for Xcel and MP additional filing requirements

[2] Commission Order dated January 13, 2025, in Dockets E-002/M-24-27, E-015/M-24-29, E-017/M-24-30

with an explanation addressing any standards the utility did not meet.

All three investor-owned electric utilities filed 2024 SRSQ reports on or before the deadline of April 1st, 2025, and filed their IEEE results within 30 days of receiving the additional IEEE results. The Minnesota Department of Commerce, Division of Energy Resources (Department) commented on the filings. After review, the Department recommended acceptance of the 2024 SRSQ reports for all three utilities contingent upon the IEEE results and acknowledged utility compliance with the Commission's rules. Below, Staff summarizes the utility reports, Department comments, and other party comments. This year, the Xcel SRSQ (docket 25-27) had a few public comments as well as a joint comment from the Environmental Law & Policy Center, Cooperative Energy Futures, and Vote Solar (collectively ECV).

II. Acronyms of Interest

AMI	Advanced Metering Infrastructure
ASAI	Average Service Availability Index
CAIDI	Customer Average Interruption Duration Index
CELI	Customers Experiencing Lengthy Interruptions
CEMI	Customer Experiencing Multiple Interruptions
ERT	Estimated Restoration Time
FLISR	Fault Location, Isolation, and Service Restoration
IEEE	Institute of Electrical and Electronics Engineers
IMS	Interruption Monitoring System
MAIFI	Momentary Average Interruption Frequency Index
MED	Major Event Day
OMS	Outage Management System
QSP	Quality of Service Plan
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SRSQ	Safety, Reliability, and Service Quality

III. Compliance

Staff note a reporting matrix compiled by Xcel Energy of the Company's requirements can be found at the end of Volume 1 in attachment A. A reporting matrix compiled by Minnesota Power of the company's requirements can be found at the end of Volume 1 in attachment B. Each show their reporting requirements and where to find their responses in their initial filings.

A. Compliance with Minn. R. 7826.0400 (Safety)

Each utility must include in its April 1st filing a summary of all reports filed with the United States Occupational Safety and Health Administration and the Occupational Safety and Health Division of the Minnesota Department of Labor and Industry during the calendar year. The utilities must include a description of all incidents during the calendar year in which an injury requiring medical attention or property damage resulting in compensation occurred as a result of downed wires or other electrical system failures. Utilities are also required to report all remedial action taken as a result of any injuries or property damaged described. Department and Commission Staff reviewed these filings and found compliance with Minn. R. 7826.0400.[3,4,5]

B. Compliance with Minn. R. 7826.0500 and 7826.0600, subp. 1 (Reliability)

With the annual report, each utility includes SAIDI, SAIFI, and CAIDI by calendar year, by work center, and for its whole assigned service area. Each utility is also expected to provide (1) an explanation of how it normalizes its reliability data to account for major storms; (2) an action plan for remedying any failures to comply with Commission reliability standards or an explanation of why noncompliance was unavoidable; and (3) a report on each interruption of a bulk power supply facility, including reasons for the interruption, duration of the interruption, and remedial steps taken or that will be taken to prevent future interruption.

The utility also provides, to the extent feasible, circuit interruption data such as the worst performing circuit, reasons for the poor performance, and operational changes made to improve performance. The utility must provide data on all known instances in which nominal electric service voltage on the utility side of the meter did not meet ANSI standards for nominal system voltages greater or less than voltage range B.

The utility also provides data on staffing levels at each work center, including full-time equivalent positions responding to trouble and for operation and maintenance of distribution lines and any other information the utility deems relevant to its reliability performance over the calendar year.

The Department and Commission Staff reviewed these filings and found compliance with MN Rules 7826.0500 and 7826.0600 as well as Commission Orders.[6,7,8]

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[3] Docket 25-27, Department Comment, p. 5

[4] Docket 25-29, Department Comment, p. 3

[5] Docket 25-30, Department Comment, p. 7

[6] Docket 25-27, Department Comment, pp. 7- 16, 29

[7] Docket 25-29, Department Comment, pp. 5-6, 9-12, 14

[8] Docket 25-30, Department Comment, pp. 5, 13, 15-19

IV. SAIDI, SAIFI, and CAIDI

SAIDI stands for System Average Interruption Duration Index, which measures the annual average outage duration for each customer served in hours. SAIFI stands for System Average Interruption Frequency Index, which measures the average number of disruptions for a customer in a year. CAIDI stands for Customer Average Interruption Duration Index, which measures the average outage duration (or conversely, restoration time) for a given customer.

SAIDI, SAIFI, and CAIDI results fluctuate from year to year due to a number of external factors impacting reliability of the utility grid. Due to this, utilities normalize these indices to remove or control for Major Event Days (MEDs), usually caused by storms and other weather-related events. However, in some years utilities do not have any MEDs, as is the case for Minnesota Power in 2024. Both normalized[9] and non-normalized results provide important information about how ratepayers have been impacted by reliability issues within one year and from year to year, as well as how each utility meets its IEEE benchmarking standards.

In its March 19, 2019 Order the Commission required all utilities to use the IEEE 1366 standard (also known as the 2.5 Beta method) for normalizing Major Event Days. The utilities also propose numerical, individual reliability standards[10] for each work center. The Commission then sets reliability performance standards annually for the utilities, which "remain in effect until final action is taken on a filing proposing new standards or changes them in another proceeding."[11]

Historically, the Commission had directed utilities to use a rolling five-year average of SAIDI, SAIFI, and CAIDI metrics for each work center in a utility's service territory. However, utilities have now transitioned to the IEEE benchmarking standard that expects each utility and their regions to be at or above the second quartile in SAIDI, SAIFI, and CAIDI when compared to their peers in IEEE. Utilities are also required to provide "an action plan for remedying any failure to comply with the standard" or explain "why non-compliance was unavoidable under the circumstances."[12] All utility standards are currently set at the second quartile, characterized below.

[9] Per Minn. R. 7826.0200, Subp. 9. "Storm-normalized data" means data that have been adjusted to neutralize the effects of outages due to major storms. Minn. R. 7826.0500, Subp. D, requires "an explanation of how the utility normalizes its reliability data to account for major storms."

[10] Minn. R. 7826.0600, Subp. 1

[11] Minn. R. 7826.0600, Subp. 2

[12] Minn. R. 7826.0500, Subp. 1(E)

Utility	IEEE Benchmark
MP	Minnesota Power's 2024 statewide Reliability Standard is set at the IEEE benchmarking second Quartile for medium utilities. Minnesota Power's work center reliability standards are set at the IEEE benchmarking second quartile for small utilities.[13]
OTP	Otter Tail Power's 2024 statewide Reliability Standard is set at the IEEE benchmarking second Quartile for medium utilities. Otter Tail's work center reliability standards are set at the IEEE benchmarking second quartile for medium utilities.[14]
Xcel	Xcel's 2024 statewide Reliability Standard is set at the IEEE benchmarking second Quartile for large utilities. Xcel's Southeast and Northwest work center reliability standards are set at the IEEE benchmarking second Quartile for medium utilities. Xcel's Metro East and Metro West work center reliability center standards are set at the IEEE benchmarking second quartile for large utilities.[15]

The following sections summarize individual utility reliability performance for 2024. Instances where normalized performance did not meet the standard are bolded. Each utility's performance in its normalized SAIDI, SAIFI, and CAIDI results is compared to its IEEE standard. This is to help compare service reliability across years, controlling for abnormal storm systems that roll through from year to year. Abnormal storm systems create abnormal spikes, making comparisons from year to year challenging with just non-normalized results. Staff will explain the challenges and improvements utilities continue to make to achieve their unmet goals.

A. Minnesota Power

Minnesota Power's (MP) service territory is divided into three work centers. The numbers in Table 1 below show MP's SAIDI, SAIFI, and CAIDI standards which were expected to be at or below the numbers in the first row. Rows two and three show MP's 2024 normalized and non-normalized results. Bolded is the utility's SAIFI result which did not meet the 2024 IEEE second quartile standard.

[13] Docket 24-29, Order (January 13, 2025), Order Point 2

[14] Docket 24-30, Order (January 13, 2025), Order Point 4

[15] Docket 24-27, Order (January 13, 2025), Order Point 6

Table 1: Minnesota Power 2024 Results and 2024 Standards

Region	Metric	2024 Benchmark	2024 Reliability Results (normalized)	2024 Reliability Results (non-normalized)
Overall Service Territory	SAIDI	150	119.9	119.9
	SAIFI	1.15	**1.3**	1.3
	CAIDI	128	92.41	92.41
Central	SAIDI	112	68.46	68.46
	SAIFI	0.91	**0.93**	0.93
	CAIDI	113	73.92	73.92
Northern	SAIDI	112	**179.99**	179.99
	SAIFI	0.91	**1.82**	1.82
	CAIDI	113	99.03	99.03
Western	SAIDI	112	**183.72**	183.72
	SAIFI	0.91	**1.71**	1.71
	CAIDI	113	107.27	107.27

Minnesota Power met its SAIDI and CAIDI standards but did not meet its SAIFI standard. Having results below each of the three (SAIDI, SAIFI, and CAIDI) standards set by the Commission is considered successful as it indicates the utility experienced fewer interruptions (when controlling for major events) than the average median sized utility across the United States. MP not meeting its SAIFI goal indicates that MP experienced more SAIFI interruptions than the national average for utilities of a similar size.

Minnesota Power gave weather, vegetation, and equipment failure as the primary reasons for not meeting its goals. Leading causes of outages were similar to previous years. To counteract this challenge, the Company continues to install TripSavers to clear temporary faults along with strategic undergrounding efforts for the Company's worst performing overhead lines.[16] In 2024, MP installed over 54 miles of underground conductor, including the conversion of overhead facilities to underground. MP also continued its preventative maintenance program to replace or refurbish switches, capacitor banks, and reclosers.[17]

Figure 1 and Figure 2 below were created by Commission Staff using utility filing data and compare the contributing factors to MP's SAIDI and SAIFI values for 2022-2024. Both figures include all outages (non-normalized). This information helps determine factors that are contributing to overall SAIDI and SAIFI values.

[16] Docket 25-29, Initial filing, p. 19

[17] Docket 25-29, Initial Filing, pp. 19-20

Figure 1: Comparison of removed SAIDI causes, 2022 to 2024[18]

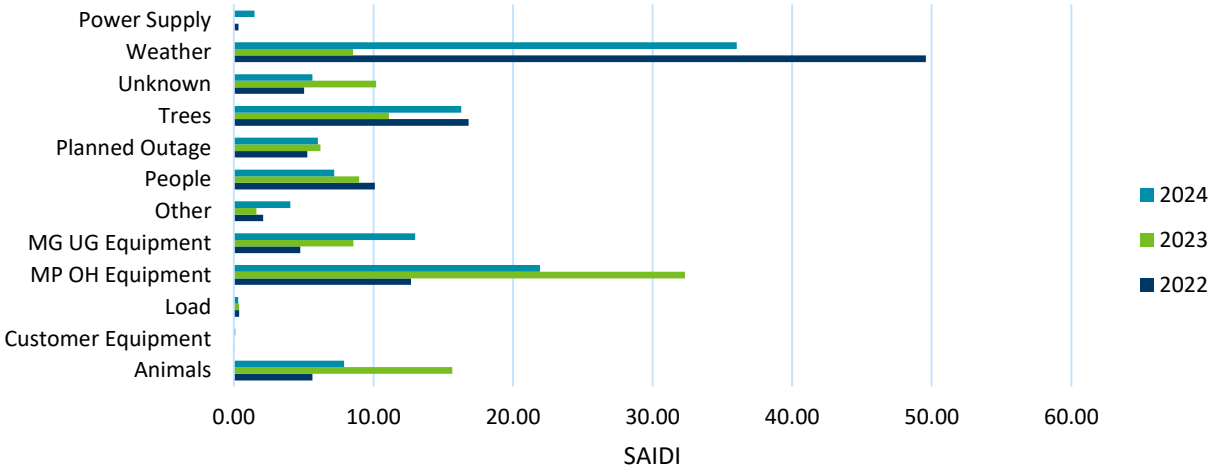
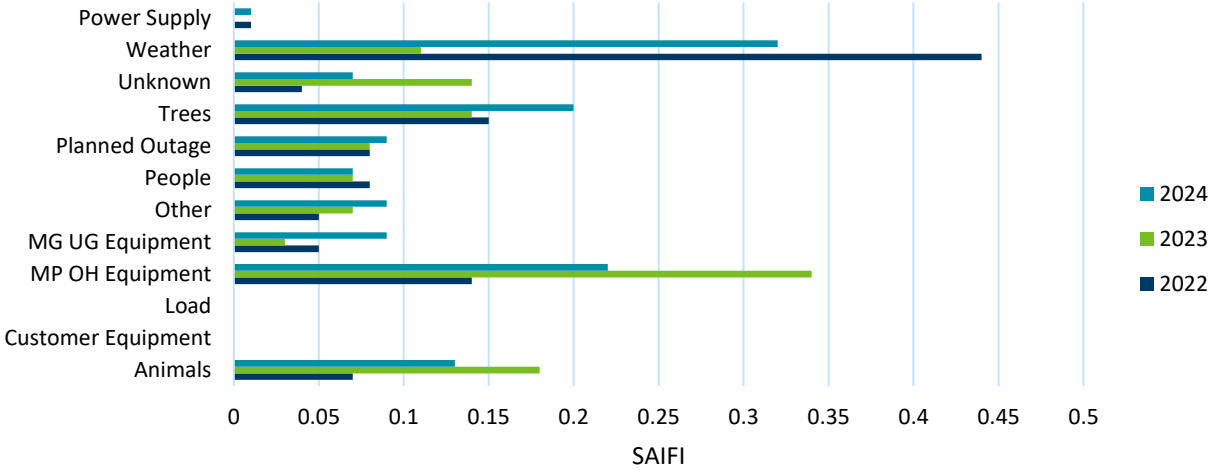


Figure 2: Comparison of SAIFI causes, 2022-2024[19]



Figures 3-5 below show MP's reliability results and trend lines compared to goals for the normalized SAIDI, SAIFI, and CAIDI metrics over the past 10 years. A utility's goal is to reduce its SAIDI, SAIFI, or CAIDI metrics as this indicates less frequency and length of interruptions to the ratepayer. Ideally, the goal line would be above the performance line, meaning the utility is meeting its performance objectives. Minnesota Power continues to perform below its peers on its SAIFI metric.

[18] Docket 25-29, Initial Filing, p. 21

[19] *Ibid.,* p. 22

Figure 3: Minnesota Power SAIDI 2015-2024

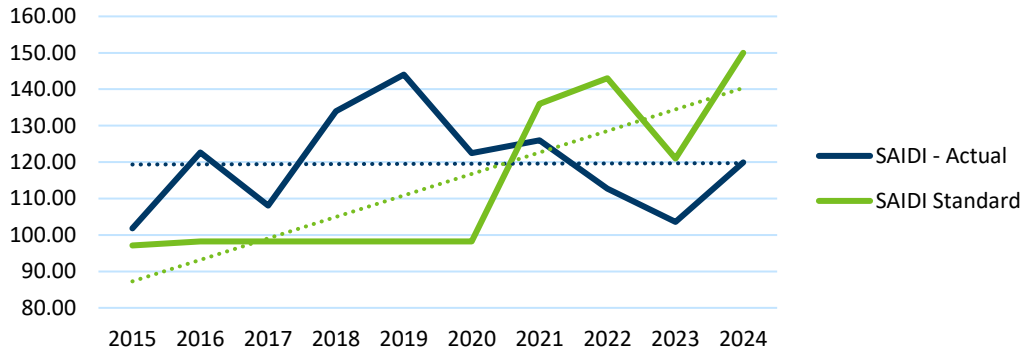


Figure 4: Minnesota Power SAIFI 2015-2024

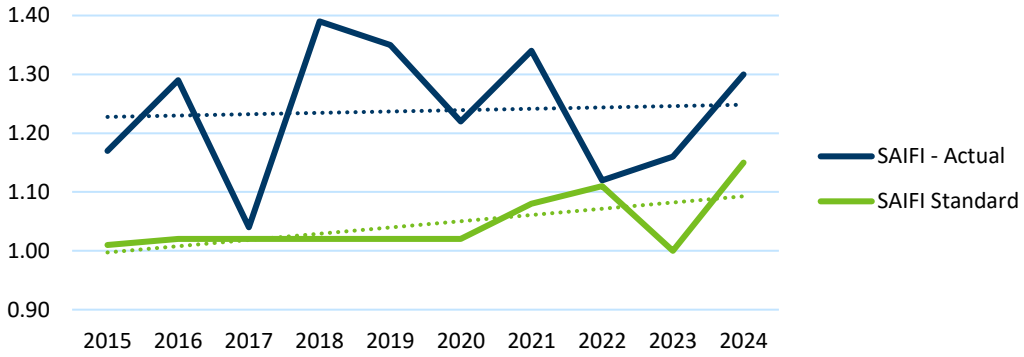
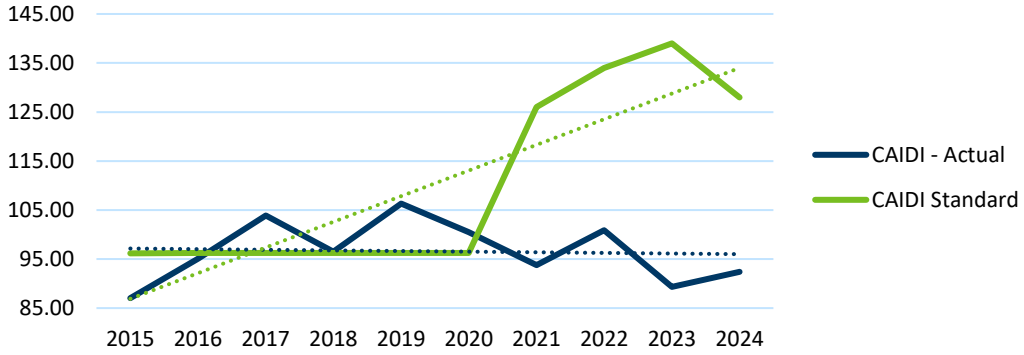


Figure 5: Minnesota Power CAIDI 2015-2024



Staff Analysis

The Department of Commerce noted that MP's performance in 2024 declined from last year and that the Company missed their 2024 SAIDI goals at their Northern and Western Work Centers.[20] The Department expressed concern regarding Minnesota Power's SAIFI values.[21]

[20] Docket 25-29, Department Supplemental Amended Comment, p. 4

[21] Docket 25-29, Department Supplemental Amended Comment, p. 5

Commission Staff noted in last year's SRSQ BP that the Company implemented grid modernizing investments to minimize SAIFI. While it is too early to see consistent returns from those investments, Staff expect the Company to continue SAIFI minimizing efforts that will impact their reliability goals moving forward.

B. Otter Tail Power

Table 2 below shows Otter Tail Power's (OTP) normalized SAIDI, SAIFI, and CAIDI performance results for its overall service territory along with its individual regions. The performance results highlighted indicate an index higher than OTP's standard for the year, meaning the Company did not meet that highlighted standard. Ideally, OTP's performance would have been lower than the standards listed below.

Table 2: Otter Tail Power 2024 Reliability Results

Region	Metric	2024 Benchmark	2024 Reliability Results (normalized)	2024 Reliability Results (non-normalized)
Overall Service Territory	SAIDI	137	**141.55**	153.23
	SAIFI	1.06	**1.16**	1.18
	CAIDI	124	122.22	129.73
Bemidji	SAIDI	137	114.77	117.87
	SAIFI	1.06	1.05	1.1
	CAIDI	124	109.75	107.36
Crookston	SAIDI	137	108.2	108.31
	SAIFI	1.06	0.81	0.81
	CAIDI	124	**133.73**	133.66
Fergus Falls	SAIDI	137	**220.37**	220.69
	SAIFI	1.06	**1.57**	1.57
	CAIDI	124	**140.44**	140.44
Morris	SAIDI	137	108.74	108.74
	SAIFI	1.06	0.8	0.8
	CAIDI	124	**135.72**	135.72

Beginning in the 2022 SRSQ report, OTP reduced its reporting from six regions down to four. The Millbank Service Center has been moved into the Morris Service Center and the Wahpeton Service Center customers have been moved into the Fergus Falls Service Center.[22] This was due to the Millbank and Wahpeton Service Centers being so small that they would see extreme fluctuations from year to year in their metrics with only two feeders, making it difficult to examine their longitudinal data. OTP struggled to meet its Fergus Falls Service Center metrics,

[22] Docket 22-159, Initial Filing, p. 26

and specifically their CAIDI goals across its Crookston, Fergus Falls, and Morris regions, giving the implementation of their new Outage Management System, which collects more granular data, as their reasoning.[23]

Figures 6-8 depict OTP's SAIDI, SAIFI, and CAIDI trends over the past decade. As a whole, Otter Tail has seen increasing SAIDI and SAIFI and CAIDI values (which indicates declining performance) over the past 10 years.

Figure 6: Otter Tail Power SAIDI Trends, 2015-2024

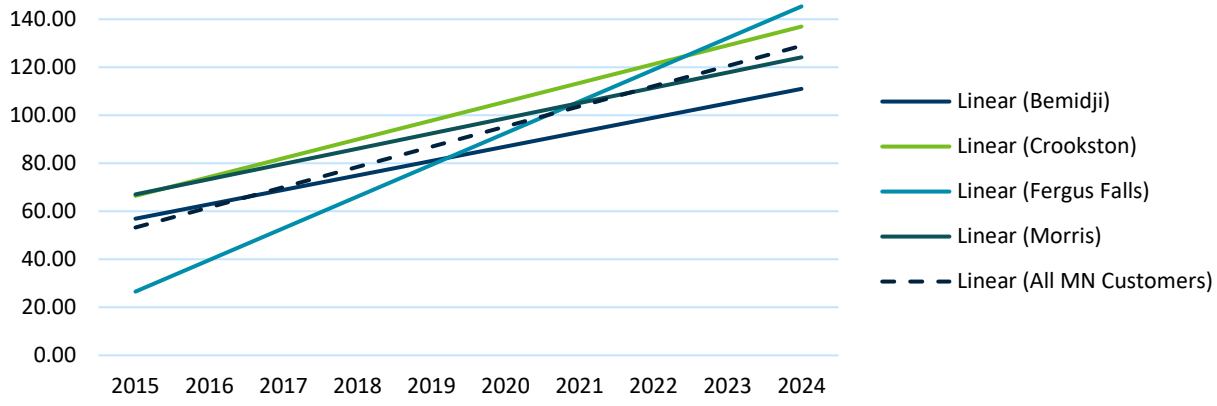
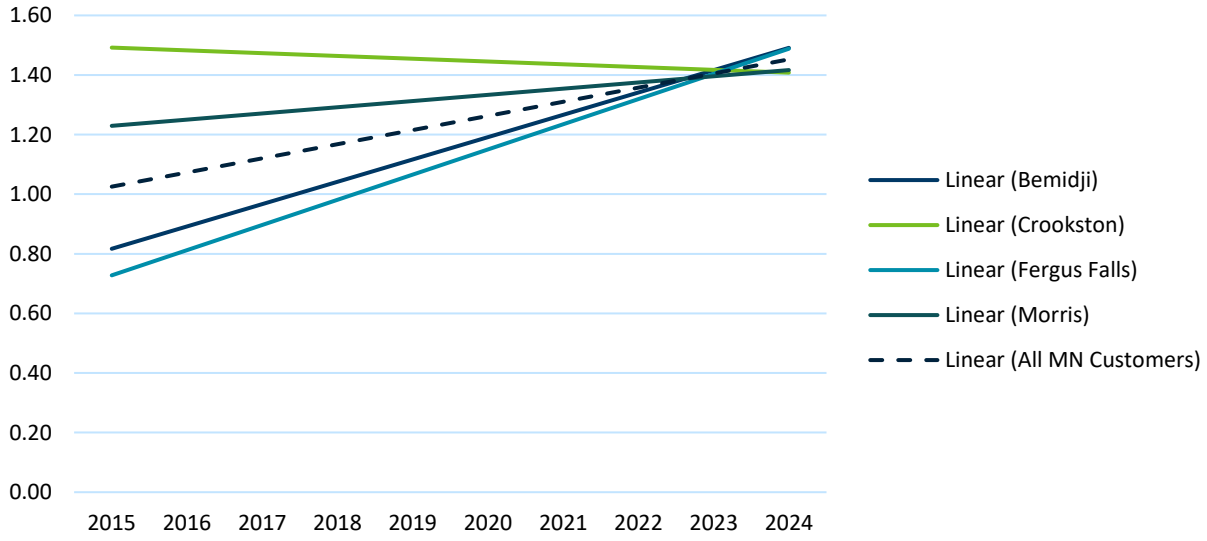
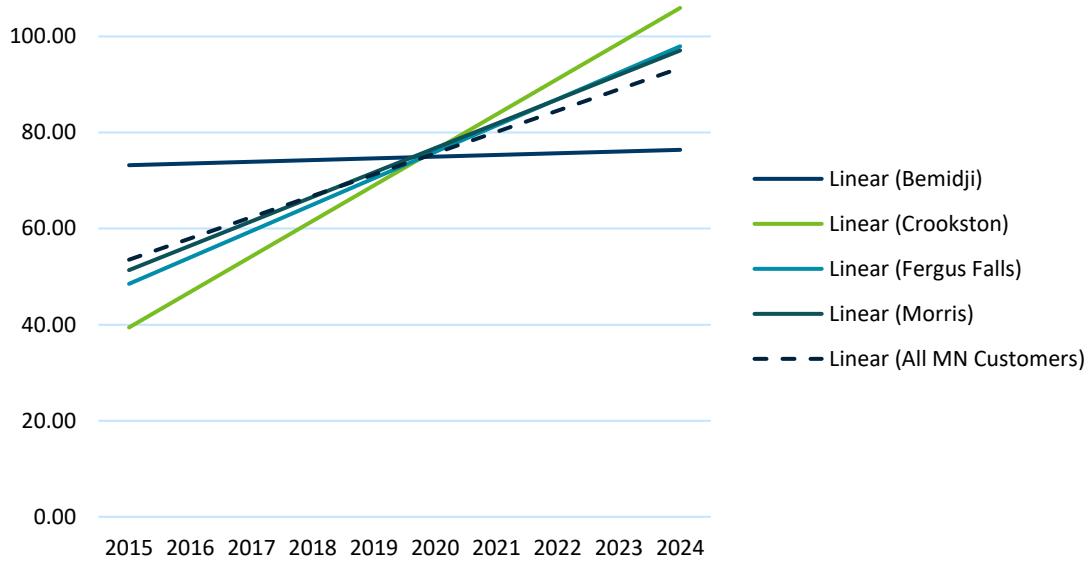


Figure 7: Otter Tail Power, SAIFI Trends, 2015-2024



[23] Docket 25-30, Amended Supplemental Comments, p. 2

Figure 8: Otter Tail Power, CAIDI Trends, 2015-2024



1. Department Comments

The Department noted OTP did not meet the SAIFI benchmark for one work center (Fergus Falls), marking an improvement from previous years. The Department also noted a decline in all Fergus Falls metrics, linking the decline to three events: a storm, wind event, and substation outage. The Department believes the Company experienced an unusually challenging year and recognized the performance represents an anomaly, rather than a systematic issue.[24]

C. Xcel

Xcel met 10 of its 15 reliability goals for 2024, slipping slightly from the prior year. Table 3 below demonstrates these results.

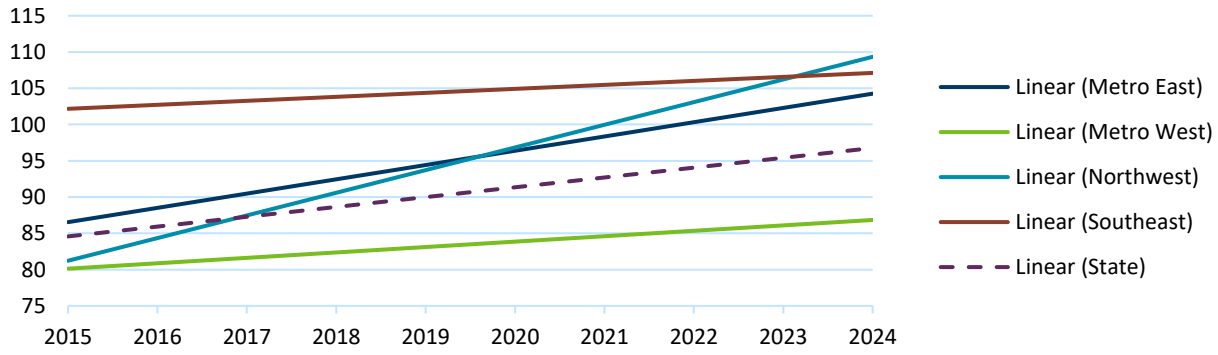
[24] Docket 25-30, Department Supplemental amended comment, pp. 2-3

Table 3: Xcel Energy 2024 Results[25]

Region	Metric	2024 Standard	2024 Performance Results (normalized)	2024 Performance Results (non-normalized)
Minnesota	SAIDI	120	110.04	308.73
	SAIFI	1.01	**1.08**	1.47
	CAIDI	118	101.95	209.57
Metro East	SAIDI	120	115.5	291.55
	SAIFI	1.01	**1.08**	1.47
	CAIDI	118	107.15	198.84
Metro West	SAIDI	12	101.37	387.56
	SAIFI	1.01	**1.14**	1.65
	CAIDI	118	88.58	234.2
Northwest	SAIDI	150	122.44	158.55
	SAIFI	1.15	0.92	1.1
	CAIDI	128	**132.86**	144.73
Southeast	SAIDI	150	121.49	132.82
	SAIFI	1.15	0.92	0.99
	CAIDI	128	**131.52**	134.37

Utility goals may rise or fall slightly from year to year due to external factors such as performance of peer institutions and weather. This makes it important to look at the overall trend lines of goals and actual performance. Figures 9-11 show Xcel's SAIDI, SAIFI, and CAIDI trend lines over time for Xcel's various service areas.

Figure 9: SAIDI Trends, 2015-2024



[25] Docket 25-27, Initial Filing, p. 36

Figure 10: SAIFI Trends, 2015-2024

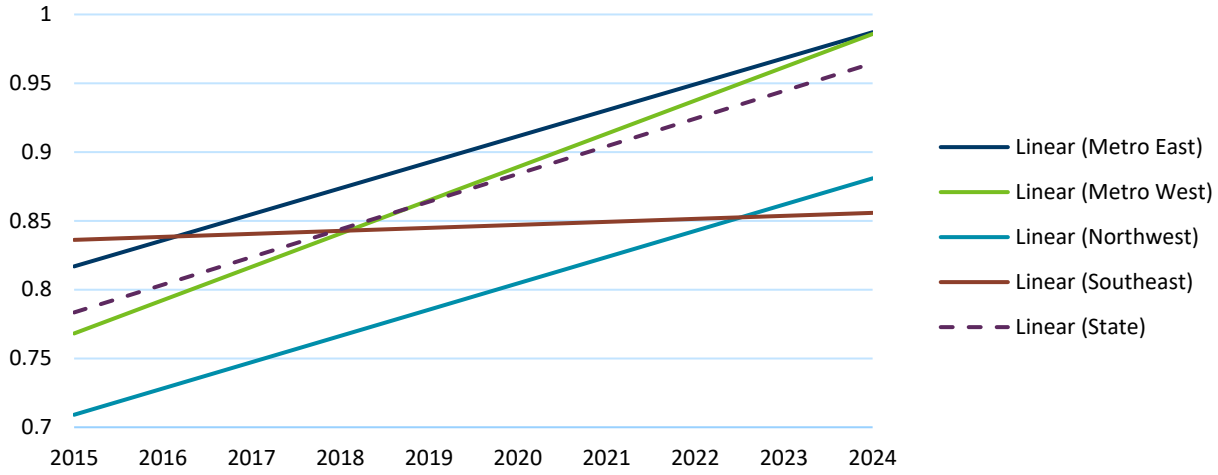
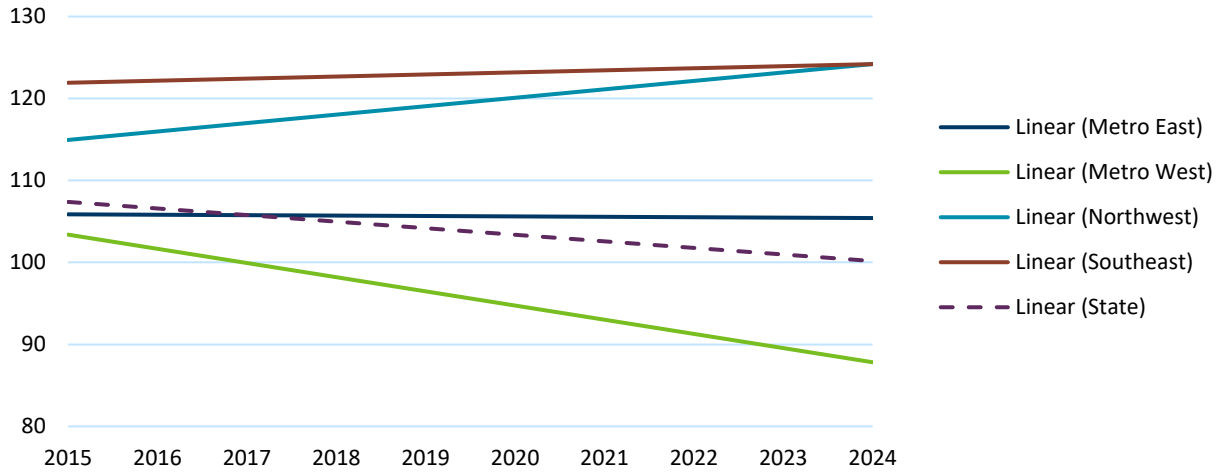


Figure 11: CAIDI Trends, 2015-2024



1. Department Comment

The Department noted that Xcel missed one third of its reliability goals for the year however, due to significant weather event days, the Department interpreted these numbers as reasonable and recommended accepting the information and adopting the proposed 2025 reliability goals.[26]

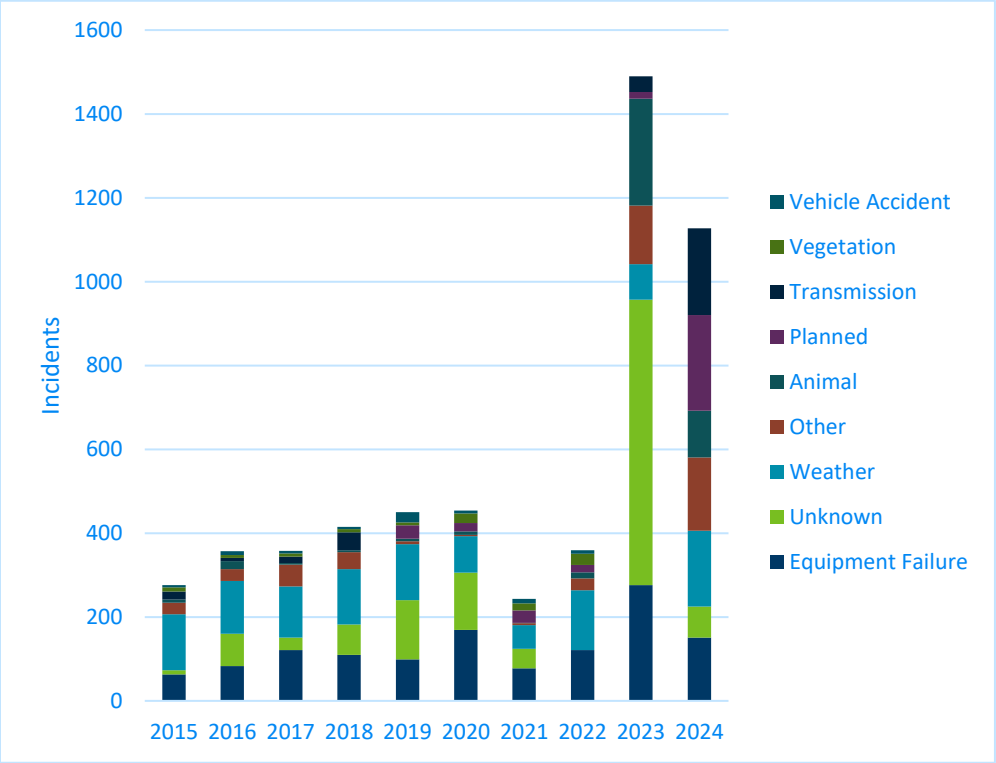
[26] Docket 25-27, Department Secondary Supplemental Comment, pp. 4-6

V. Power Outage Origins

A. Otter Tail Power

As in previous years, Otter Tail provided a table of outage causes by work center for its service area. Staff have compiled Figure 12 showing causes over the past decade.[27] Weather and equipment failure are the most common causes of outages for OTP. In 2023 OTP saw a significant increase in outage origins, specifically in the unknown category, with comparatively slight increases in equipment failure and animal contacts. OTP indicated that this spike was caused by the implementation of its new Outage Management System, implemented on December 20, 2022.[28] In 2024, we see a drop in incidents with more incidents comparably able to be categorized, reducing the "unknown" category.

Figure 12: Otter Tail Power Outage Origins[29]



*Other includes: Bird, Bulk Power Loss, Flood, Fuse, Human error, Investigated and Unknown, Other, Overload, Underground, Vandalism

[27] Docket 24-30, Initial Filing, p. 13. In 2019 Otter Tail began reporting sources of outages with new categorizations in line with its new IMS. Staff has aligned new and old categories for comparison purposes.

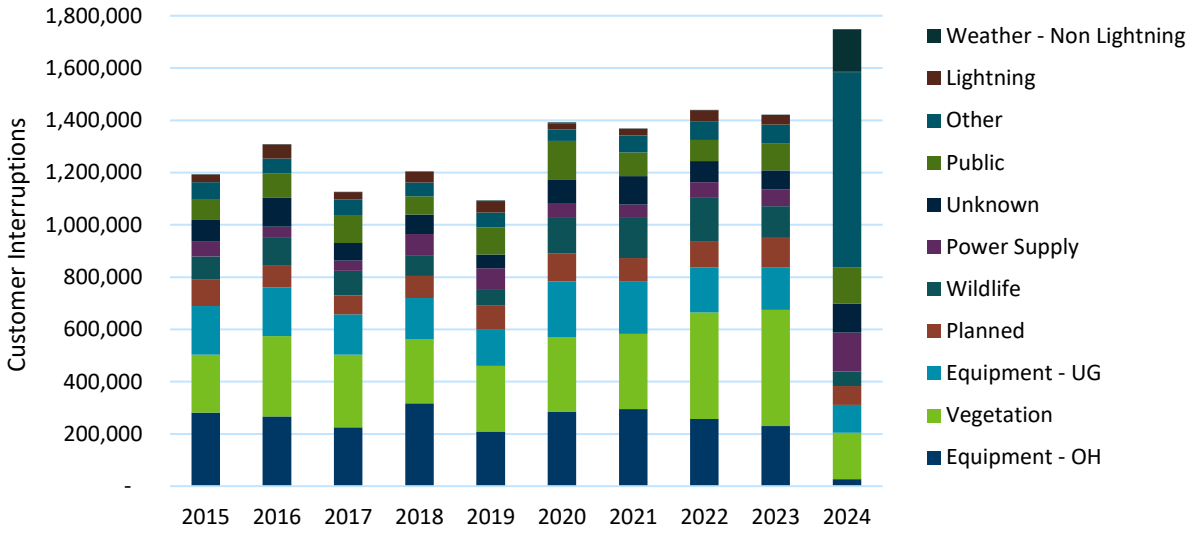
[28] Docket 24-30, Initial Comment, p. 12

[29] Docket 25-30, Initial Filing, p. 14

B. Xcel Energy

Below, Commission Staff provides Figure 13 showing Xcel's sustained outage trends for 2015-2024 for all outages. This information is compiled due to Commission's Order[30] collecting data on sustained outage causes by work center.

Figure 13: Causes of Xcel Sustained Outages[31]



The number of outages increased slightly in 2024 compared to recent years with a significant increase in the "unknown" category.

The Department posited that changes to vegetation management practices may be directly related to increases in vegetation-related outages over the past five years. The Department requested information from Xcel about its tree-trimming practices and customer interruptions attributed to tree-related causes. The Department found consistency between the decreasing mileage of trees trimmed around overhead lines and the increase in tree-coded customer interruptions.

[30] Docket 19-261, January 28, 2020 Order

[31] Docket 25-27, Initial Filing Attachment K, Sheet "Minnesota SCI Cause Sum," p. 1

Figure 14a. Annual Completed Miles of Overhead Distribution and Transmission Lines[32]

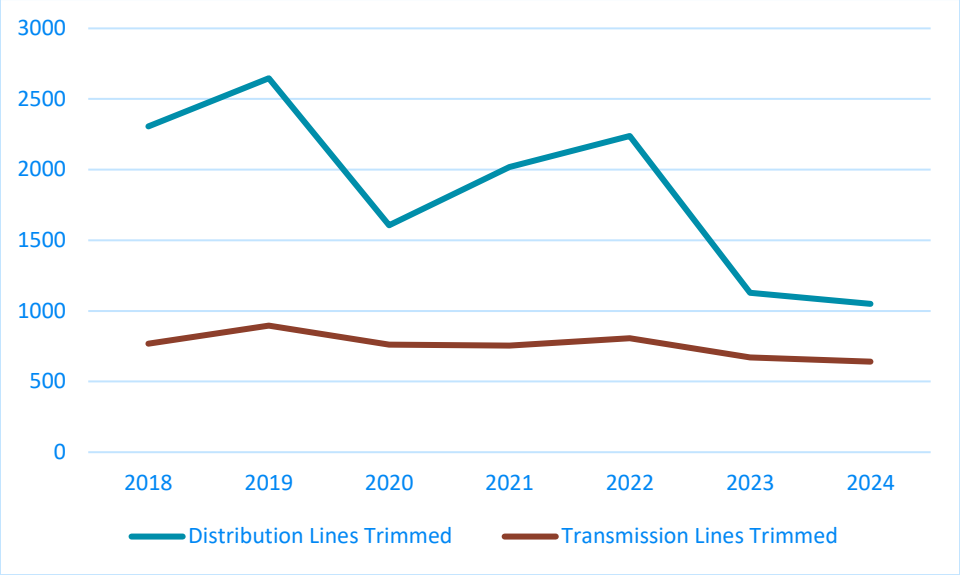
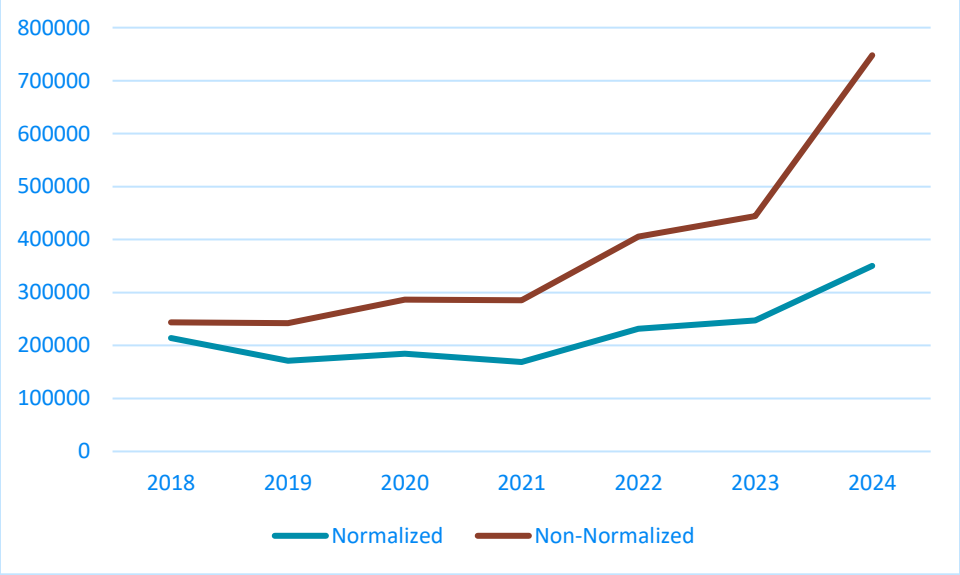


Figure 14b. Annual Tree-Coded Customer Interruptions[33]



In addition, Xcel provided information to the Department showing a decrease in both miles forecasted to be trimmed, as well as budget to spend on tree trimming. Part of this, the Department theorized, was the increasing cost of labor, which Xcel calculated has increased by

[32] Docket 25-27, Department Initial Comments, p. 19

[33] Department Initial Comments, p. 20

47% since 2020.[34] The Department argued that an increase in tree-coded related outages is to be expected, if Xcel is forecasting more dollars for less miles of trees trimmed.

Xcel replied that it is "strategically targeting our vegetation management resources to projects that pose greater risk of tree-coded outages" to aim for "the greatest benefit in reducing outage risk."[35] This includes using "condition-based scheduling," which seeks to identify places where trimming can provide the biggest reduction in tree-coded outages, to prioritize mileage.

However, Xcel acknowledged challenges with contracting labor may have contributed to decreased mileage trimmed in the last several years, including increased labor costs tied to its new contracts. Xcel also stated that its new standard of pruning the trees to a 6-foot clearance rate from the line (as opposed to varying standards by species growth rate and other factors) has also added to labor costs.

Xcel noted that it has proposed an increased budget for vegetation management during 2025-2026 in its multi-year rate case, aiming to address delays in mileage trimmed, contractor rate increases, and the need to prune more after increased rain. Commission Staff note that Xcel has underspend on their vegetation management budget for years. Below, in Table 4, is a comparison of the Approved Test Year in the Company's previous rate case to their actual and forecasted spend.

Table 4. Vegetation Management Compared to Approved Test Year[36]

	2022 Actual	2023 Actual	2024 Actual
Actual	$35.8	$28.6	$30.7
Approved Test Year	$43.4	$46.0	$46.2
Percent Spent of Approved Test Year	82.5%	62.2%	66.5%

With less actual expenditure and a request for increases for future years, Commission Staff express concern that the Company should be increasing trimming mileage, not decreasing it. The Company is not meeting their approved test year expenditures and lowering the number of tree trimming mileage, providing contracting rate increases and increased rain as reasoning. However, with room in the budget to absorb the impact of high quality Minnesota tree

[34] Department Initial Comments, p. 22

[35] Xcel Reply Comments, pp. 4-5

[36] Docket 24-320, *In the Matter of the Application of Xcel Energy for Authority to Increase Rates for Electric Service in Minnesota,* Direct Testimony of Ashley Uphus (Aug 22, 2025), p. 19

trimming jobs and a shift from a drought to non-drought year, tree trimming mileage should be maintained, not be decreasing.

C. Minnesota Power

Minnesota Power depicted Major Event Day (MED)-excluded SAIDI and SAIFI values by cause, which highlights the causes of outages on major event days that are excluded when normalizing SAIDI or SAIFI. To minimize these causes, MP discussed its TripSaver installations to clear temporary faults as well as its preventative maintenance program on substation and distribution equipment that includes replacement or refurbishment of switches, capacitor banks, reclosers, and voltage regulators.[37]

Figure 15a: Causes of MP Sustained Outages[38]

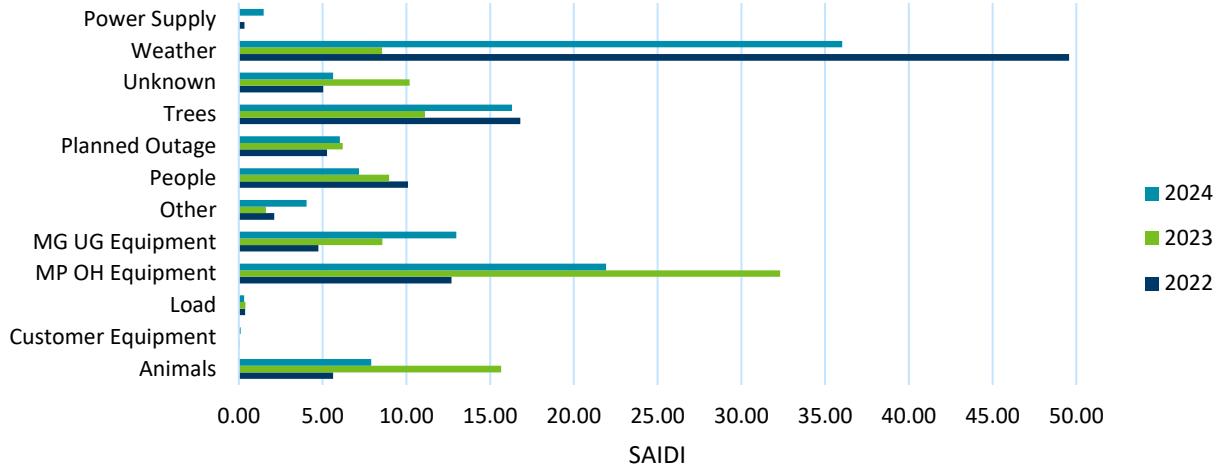
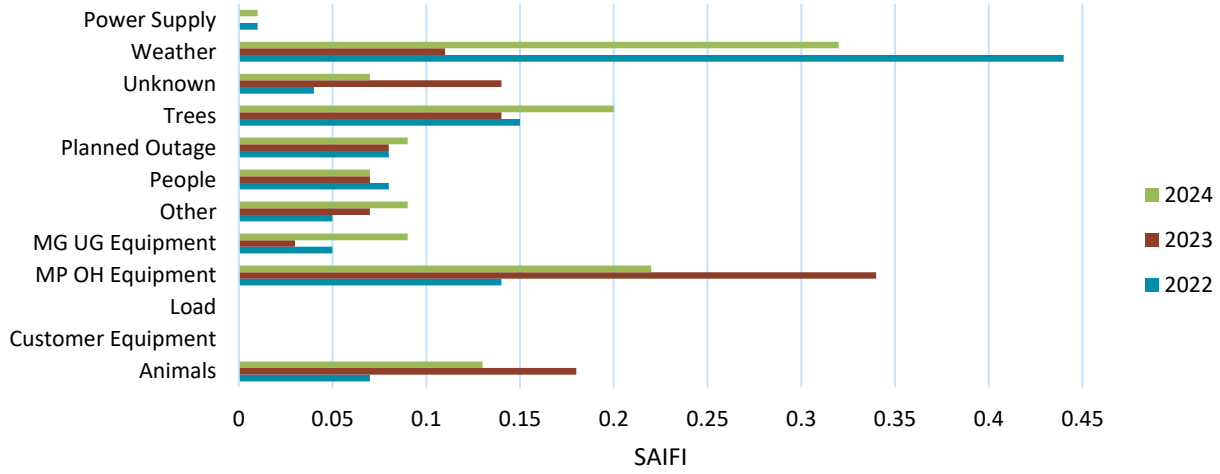


Figure 15b: Causes of MP Sustained Outages



[37] Docket 25-29, Initial Filing, pp. 19-20

[38] Docket 25-29, Initial Filing, pp. 21-22

VI. Work Center Staffing Levels

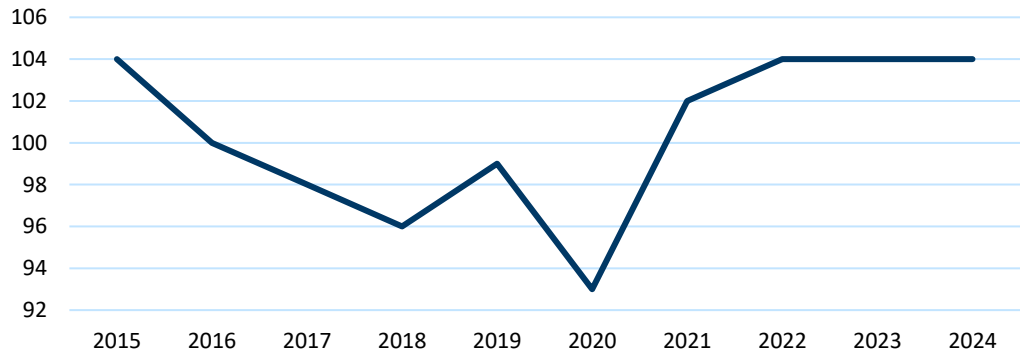
Minn. R. 7826.0500, Subp. 1(J), requires utilities to report "data on staffing levels at each work center, including the number of full-time equivalent positions held by field employees responsible for responding to trouble and for the operation and maintenance of distribution lines." The Department reviewed all three utilities' compliance with the rule.[39,40,41]

A. Minnesota Power

Minnesota Power reported 104 line worker positions, along with 44 full time equivalent (FTE) contractor positions.[42] MP had been seeing a decline in line worker positions that was exacerbated by the COVID-19 pandemic emergency response. However, MP has worked to reverse that trend. Figure 16 depicts the overall level of line worker positions.

The Department previously expressed concern about MP's ratio of line worker contractors to employees.[43] There was a significant increase in line contractors from 22 in 2021 and 25 in 2022, to 52 in 2023 and now 44 in 2024. The number of contractors serving the Company increased overall over the past few years. MP explained that these contractors assist with asset renewal, reliability, and grid modernization projects, filling difficult to hire positions across the organization.[44] Commission Staff will continue to monitor use of contractors and look forward to MP implementing their goal of eventually filling more of those positions internally.

Figure 16: MP Line Workers (FTE), 2015-2024

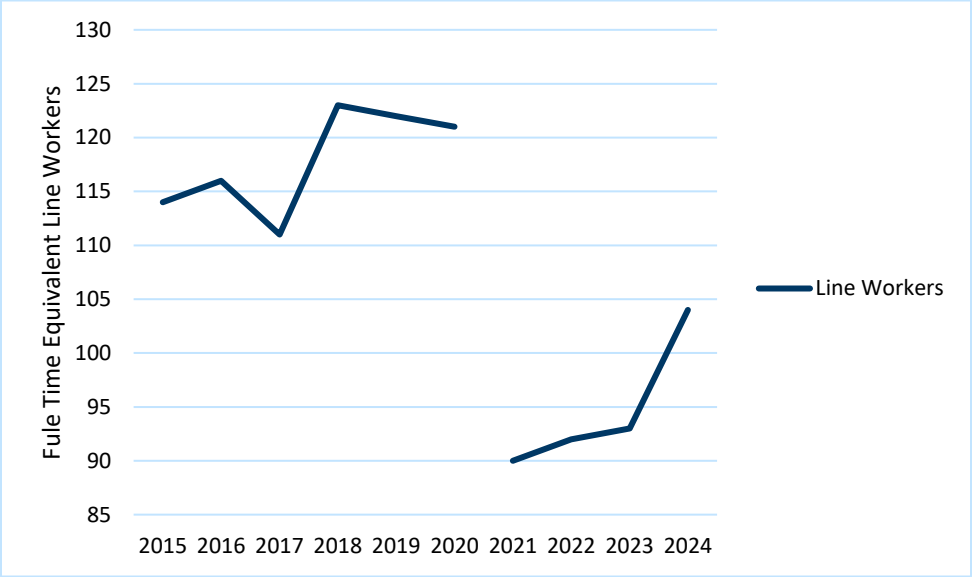


[39] Docket 25-27, Department Comment, p. 16
[40] Docket 25-29, Department Comment, Attachment 5, p. 1
[41] Docket 25-30, Department Comment, p. 11
[42] Docket 25-29, Initial Filing, p. 65
[43] Docket 24-29, Department Comments, pp. 16-17
[44] Docket 25-29, Department Comment, p. 13

B. Otter Tail Power

OTP provided the number of line workers, depicted in Figure 17. OTP stated that the decrease in work center staffing between 2020 and 2021 is the result of an accounting change, and that operationally, the number of staff available did not change.[45] OTP asserted that it made this accounting change to provide more accurate accounting of FTE line workers specifically in Minnesota, removing workers in its service territory that bordered Minnesota from the count.

Figure 17: OTP Line Workers (FTE), 2015-2024



C. Xcel Energy

In its compliance filing, Xcel provided updated line worker staffing levels. Based on the updated information, Xcel's staffing levels are currently above the historical average in most work centers and in total.

[45] Docket 22-159, Initial Filing, , pdf p. 12

Table 5: Xcel Energy Line Worker Staffing Levels, 2015-2024[46]

	Metro East	Metro West	Northwest	Southeast	Other*	Total
2015	128	176	33	53	46	436
2016	124	184	30	47	46	431
2017	119	176	31	46	46	418
2018	124	180	32	49	47	432
2019	123	177	30	49	45	424
2020	125	181	31	49	49	435
2021	132	171	33	51	52	439
2022	135	188	32	58	50	463
2023	135	193	29	50	56	463
2024	134	210	30	51	49	474
Historical Average	128	184	31	50	49	442

Xcel hires between zero and seven contractors per work center. While the Company stated that it also hires contractors to perform field and maintenance work, the Company's contracts with bargaining (union) employees contain agreements that include restrictions on the number of contractors not exceeding the number of internal field and maintenance personnel. The Company stated that it tends to use the most contractors during the summer months, mostly to assist with new service.[47]

Table 6: Xcel Energy Work Center Support (with Contractors) Staffing Levels, 2014-2023[48]

	Metro East	Metro West	Northwest	Southeast	Other*	Total
2015	60	63	22	34	35	214
2016	60	64	25	33	35	217
2017	64	75	21	34	35	229
2018	62	74	22	32	35	225
2019	59	79	22	31	35	226
2020	54	71	21	28	35	209
2021	55	83	22	32	36	228
2022	60	81	17	33	41	232
2023	53	76	16	40	25	210
2024	54	69	15	25	32	195
Historical Average	58	74	20	32	34	219

* Xcel Energy employees associated with the Fargo and Sioux Falls Service Centers respond to trouble in western Minnesota and the Dakotas.

[46] Docket 25-27, Initial Filing, p. 71

[47] Docket 25-27, Initial Filing, p. 71

[48] Docket 25-27, Initial Filing, p. 71

As shown in Table 5, Xcel has seen steady line worker employment since 2015 with this year's total being above the ten-year average. As shown in Table 6, Xcel has also seen steady employment for their Work Center Support with this year's total being slightly below the average, dipping below 200 for the first time.

D. Staff Analysis

After a challenging few years due to the COVID-19 pandemic impacting the employment market, all three utilities seem to have recovered to a reasonable staffing level when compared to their historical staffing levels. Commission Staff will continue to monitor staffing levels for safety and quality of service, including the concern raised regarding Minnesota Power's contractor to FTE line worker ratio.

VII. Reliability by Class

In its March 19, 2019 Order, the Commission required the utilities to provide information on how different customer classes are impacted by outages.[49]

A. Minnesota Power

Average Service Availability Index (ASAI) represents the percentage of time that power was available.[50] Minnesota Power reported the ASAI for each class. Minnesota Power's 2024 ASAI was similar to values in previous years.

Table 7: Minnesota Power Reliability by Customer Class (ASAI)[51]

Customer Class	Residential	Commercial	Industrial
2018	99.97500%	99.99558%	99.99992%
2019	99.97387%	99.99527%	99.99987%
2020	99.97115%	99.99480%	99.99991%
2021	99.98%	99.99%	99.99%
2022	99.98%	99.99%	99.99%
2023	99.98%	99.99%	99.99%
2024	99.98%	99.99%	99.99%

[49] Docket E015/M-18-239, Order Point 3 and clarified in Docket E015/M-19-261, Order Point 2

[50] Docket 25-29, Initial Filing, p. 67

[51] Docket 25-29, Initial Filing, p. 67

B. Otter Tail Power

This was the second year OTP was able to provide reliability by class information due to the implementation of its OMS. The Department noted the Company has complied with the Commission order.[52]

Table 8: Otter Tail Power Reliability by Customer Class

	SAIDI	SAIFI	CAIDI
Commercial	123.23	1.05	117.05
Industrial	118.77	0.85	140.12
Residential	145.31	1.19	122.3

C. Xcel Energy

The 2023 reporting year is the second year Xcel Energy was able to provide reliability data by customer class in accordance with Commission Order. Xcel Energy theorized that the differences between customer classes are likely due to less vegetation in industrial and commercial areas along with shorter feeders due to higher load density and a higher percentage of customers with underground service.[53] Attachment L of Xcel's petition provided granular data on reliability and customer class information by feeder.[54]

Table 9: Xcel Energy Reliability by Customer Class[55]

	Residential	Commercial	Industrial	All
SAIDI	110.8	95.4	93.4	110.0
SAIFI	1.09	0.92	0.89	1.08
CAIDI	101	103	105	102

Xcel Energy noted that higher load density of commercial and industrial customers necessitates shorter feeder lengths, which reduces exposure to outage risks. The Company stated they expect their continued targeted undergrounding efforts to narrow the difference in reliability performance between customer classes but noted that longer distances involved with residential and rural feeders would limit the opportunity to fully match the reliability performance of commercial and industrial areas.[56]

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[52] Docket 25-30, Department Amended Supplemental, p. 5

[53] Docket 25-27, Initial Filing, p. 40

[54] Docket 25-27, Initial Filing, Attachment L (Trade Secret)

[55] Docket 25-27, Initial Filing, p. 40

[56] Docket 25-27, Initial Filing, p. 83

The Department reviewed the Company's response and concluded the Company complied with this reporting requirement.[57]

1. Staff Analysis

As indicated in last year's briefing papers, vegetation management, shorter feeders, and undergrounding are solutions that are not class dependent. Staff hope that continued investment will improve upon the difference in class performance.

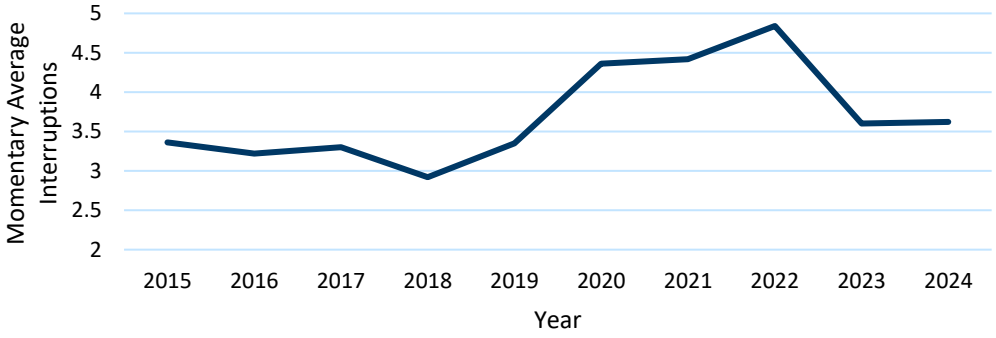
VIII. MAIFI Reporting

Momentary Average Interruption Frequency Index (MAIFI) consists of interruptions lasting less than five minutes, which are excluded from SAIDI, SAIFI, and CAIDI calculations. These types of interruptions tend to have a disproportionate impact on commercial and industrial customers for whom even a 30-second lapse in power can cause hours of lost productivity.

A. Minnesota Power

Below, Figure 8, is the most up to date normalized MAIFI data collected by MP.

Figure 18: Minnesota Power MAIFI 2014-2023



B. Otter Tail Power

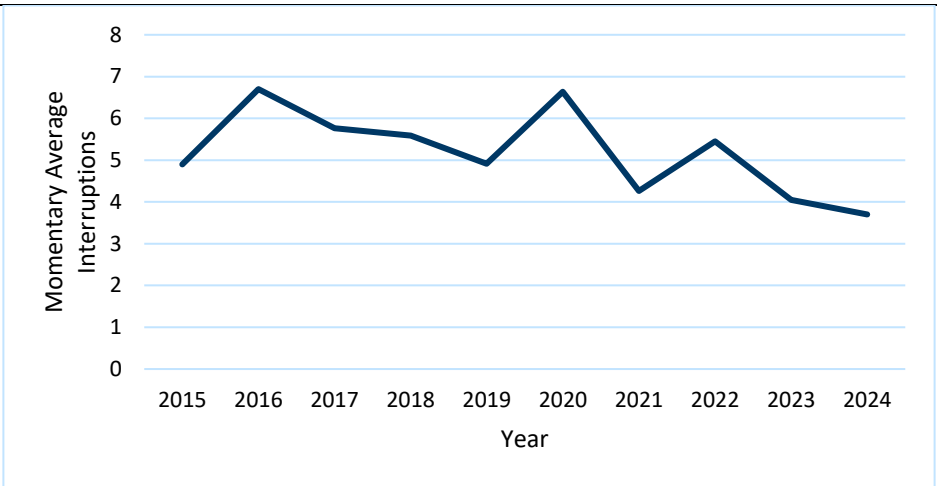
OTP indicated that it uses MAIFI as a predictor of future SAIDI values. This means OTP can utilize MAIFI values to seek out line sections with high MAIFI for additional vegetation management or infrastructure investments to reduce the risk of outages in the future.[58] Figure 19 depicts OTP's 2024 and historic MAIFI values.

[57] Docket 25-27, Department Comment, p. 28

[58] Docket 25-30, Initial Filing, p. 7

Figure 19: Otter Tail Power MAIFI (non-normalized)

Customer Service Center	MAIFI
Bemidji	3.21
Crookston	4.86
Fergus Falls	3.76
Morris	3.26
MN Total	3.70



C. Xcel Energy

Xcel provided MAIFI calculations for its feeders that are SCADA-enabled using the IEEE Momentary Interruption Event Definition, which is the aggregation of all momentary interruptions of one or more reclosing types of interrupting devices, completed in five minutes or less, that do not result in a sustained loss of power delivery to one or more customer.[59] Xcel noted that "momentary outage information is available at the Feeder-level and above, by Feeder circuit, and only on Feeders that are located in substations with Supervisory Control and Data Acquisition (SCADA) capability. With current distribution infrastructure, there is SCADA capacity at 77 percent of our substations and approximately 90 percent of our customers are served from these substations."[60]

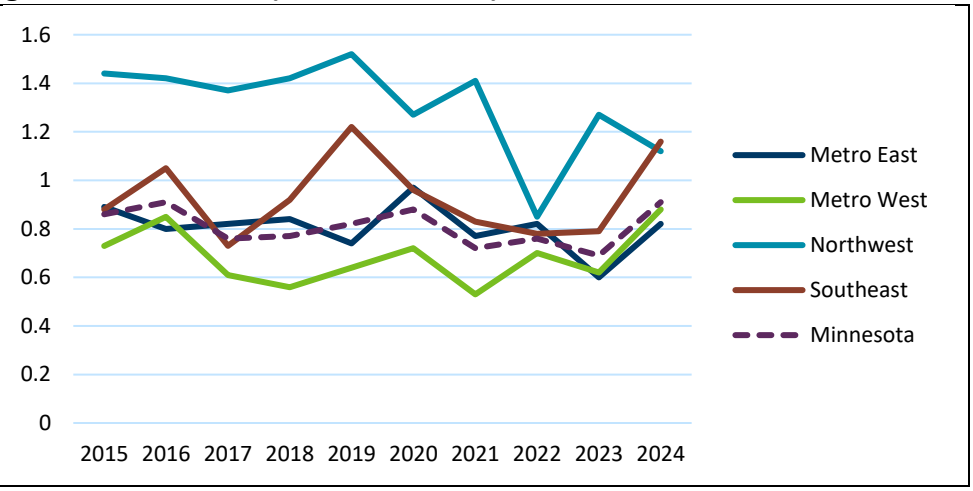
These calculations depended on which method the Company used: non-normalized, IEEE, or QSP method. Figure 20 depicts Xcel's non-normalized 2024 results.

[59] IEEE Guide for Electric Power Distribution Reliability Indices, definition 3.14

[60] Docket 25-27, Initial Filing, p. 72

Figure 20: Xcel MAIFI (non-normalized)[61]

Region	2024 MAIFI
Minnesota	0.91
Metro East	0.82
Metro West	0.88
Northwest	1.12
Southeast	1.16



IX. CEMI and CELI

Customers Experiencing Multiple Interruptions (CEMI) and Customers Experiencing Lengthy Interruptions (CELI) focus on customers who deal with repeated or longer-than-average outages.[62] The Commission required reporting at the following intervals:

CEMI – normalized and non-normalized, percent of customers experiencing more than 4, 5, or 6 outages in a year.

CELI –percent of customers experiencing outages lasting longer than 6 hours, 12 hours, and 24 hours.

The Commission also required utilities to report the longest interruption and the most interruptions experienced by any one customer (or feeder, if customer level data is not available).[63]

A. Minnesota Power

Figure 21 shows Minnesota Power's non-normalized CEMI performance over the past 10 years for customers experiencing 4, 5, or 6+ outages in a year while figure 22 depicts CELI over the same time period for interruptions of various lengths. The longest experienced interruption was by one customer in the Western Work Center, with an outage lasting 1,082 minutes (18 hours) due to strong winds that took down trees. The trees were removed and the overhead lines repaired.[64] The Central Work Center had the highest CEMI feeder with 6.43 outages.[65]

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[61] Docket 25-27, Initial Filing, p. 73

[62] The Commission required utilities to report on CEMI and CELI in its March 19, 2019 Order accepting the 2017 reports. Order Accepting Reports, Setting 2018 Reliability Standards, and Setting Future Reporting Requirements, Docket 18-250.

[63] Order Accepting Reports, Setting Reliability Standards, and Requiring Additional Filings, Docket Nos. 19-261, 19-260, 19-254

[64] Docket 25-29, Initial Filing, p. 67

[65] Docket 25-29, Initial Filing, p. 66

Figure 21: Minnesota Power Non-Normalized CEMI

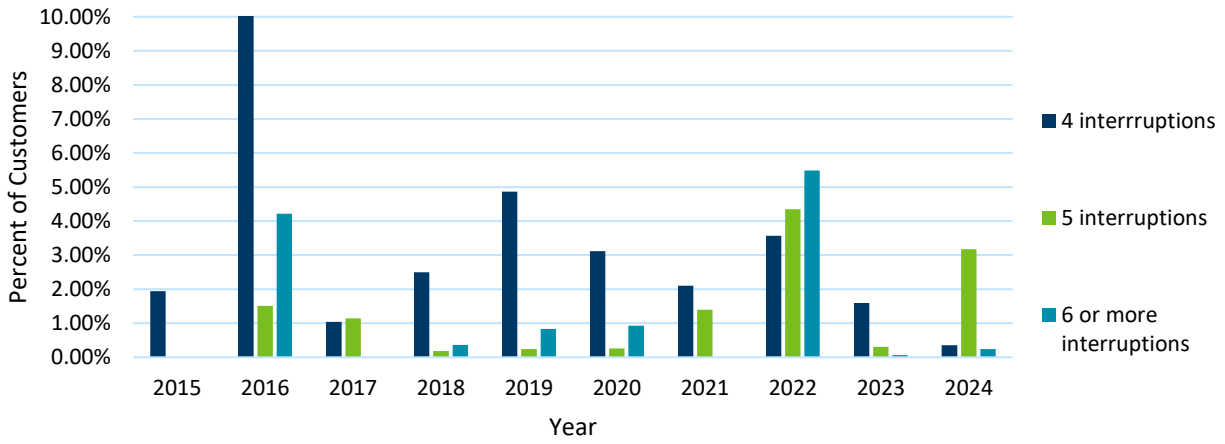
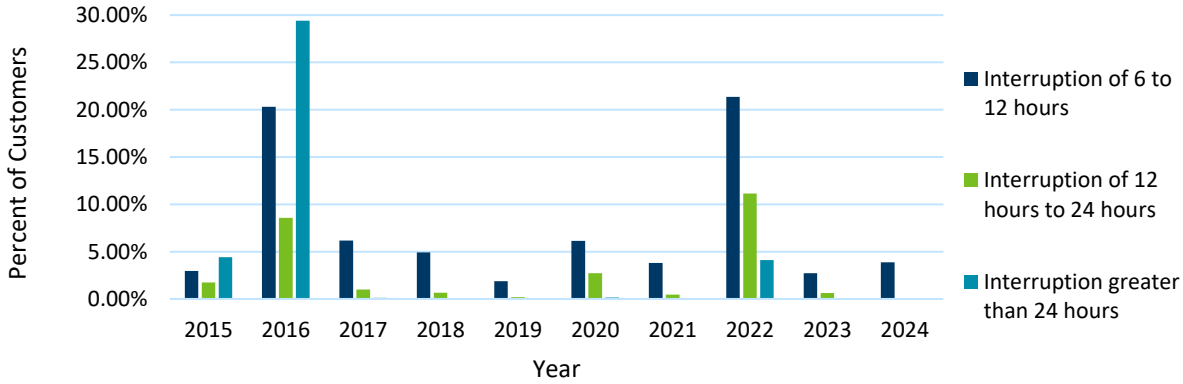


Figure 22: Minnesota Power Non-Normalized CELI



B. Otter Tail Power

Figure 23 shows Otter Tail's non-normalized CEMI performance over the past 10 years for customers experiencing 4, 5, or 6+ outages in a year.

The longest experienced interruption lasted over 15 hours and 7 minutes impacting 39 customers due to a bad underground. The Perham SE feeder experienced the most interruptions with 13 interruptions impacting 3 customers.[66]

[66] Docket 25-30, Initial Filing, pp. 35-36

Figure 23: Otter Tail Non-Normalized CEMI

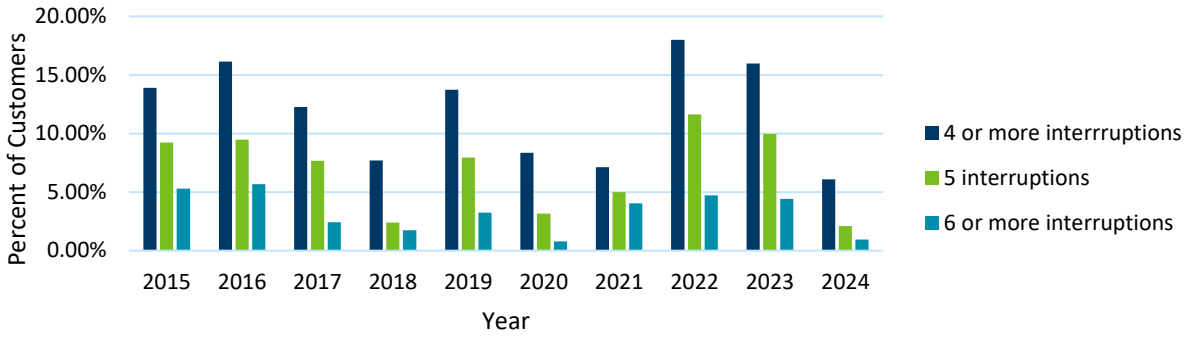
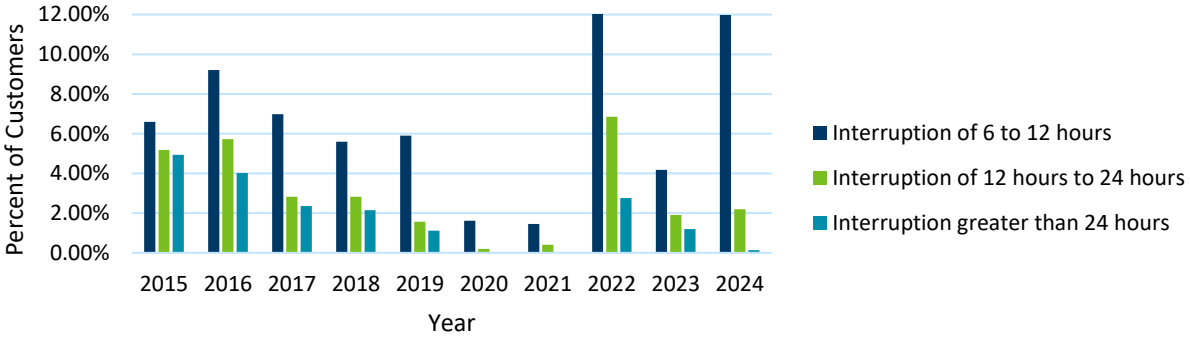


Figure 24 indicates the percentage of customers experiencing outages of 6, 12, or 24 hours or longer for 2015-2024.

Figure 24: Otter Tail Non-Normalized CELI

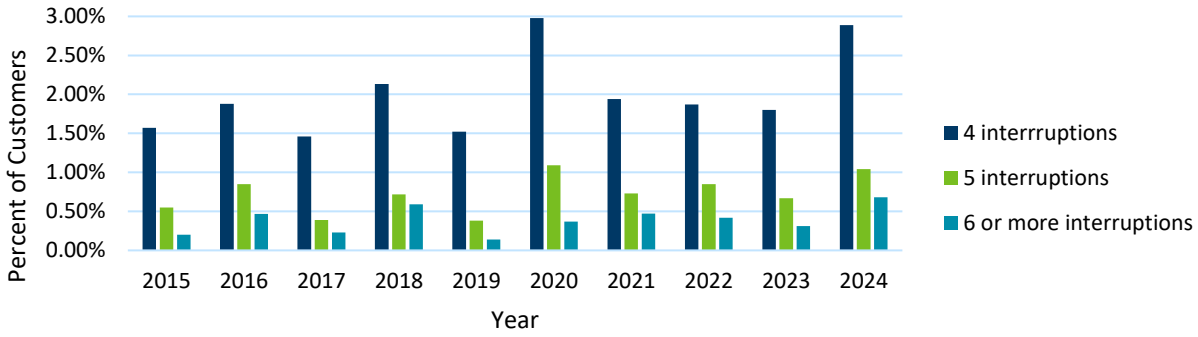


C. Xcel Energy

Figure 25 shows Xcel Energy's non-normalized CEMI performance over the past 10 years for customers. The most outages experienced was 18 (experienced by 14 customers in the Metro West region). A majority of these outages were animal contact related, equipment related, planned, vegetation related, lightning, damage from the public, human error, and an unknown cause.[67]

[67] Docket 25-27, Initial Filing, p. 79

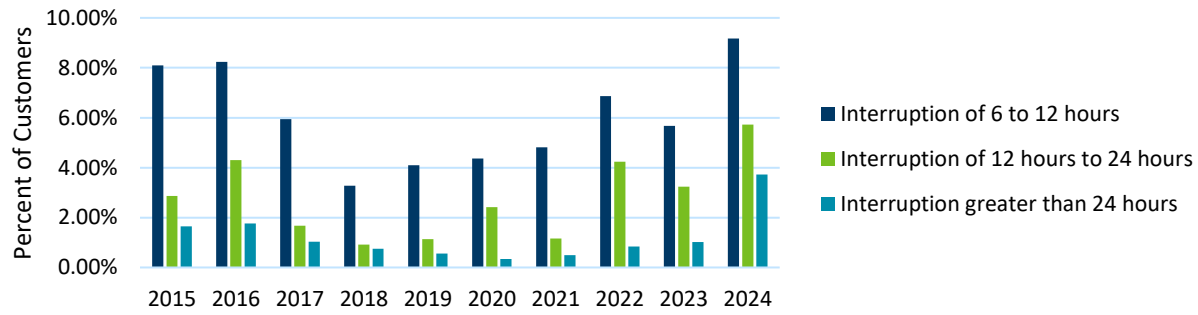
Figure 25: Xcel Non-Normalized CEMI[68]



In 2024 the longest normalized outage lasted four days and nine hours impacting two customers in the Metro East region. It was due to an overloaded fuse. The customers were out of town and unaware of the outage until their return. The Company used the customer meter to establish the actual outage start time.[69]

Xcel noted that Minnesota experienced increased weather and storm activity in 2024, which led to 15 Work Center MEDs (five more than experienced in 2023, and more than any of the prior 10 years).[70] The Department noted that these increased 2024 results appear consistent with weather patterns.[71]

Figure 26: Xcel Non-Normalized CELI[72]



The Department acknowledged that the increased results made sense given the number of MEDs, but also expressed some light concern with the trend, saying that "it appears that the Company's ratepayers not only experienced more outages than normal in 2024, but ratepayers

[68] Docket 25-27, Initial Filing, p. 79

[69] Docket 25-27, Initial Filing, p. 82

[70] Xcel Petition, Part 2, p. 77

[71] Department Initial Comments, p. 27

[72] Docket 25-27, Initial Filing, p. 81

also suffered for longer outages as well. These results are consistent with Xcel's other reliability metrics for 2024. The Department will continue to monitor this situation." The Department concluded Xcel complied with the reporting requirements.[73]

X. Estimated Restoration Times

In its March 2019 Order, the Commission required utilities to report on the accuracy of their estimates for when power will be restored to customers who have lost service.

A. Minnesota Power

Minnesota Power provided data indicating over 97.26% of estimated restoration times were met or exceeded, with 2.74% underestimating the amount of time to restore power by over 30 minutes. In 2024, the Company spent significant effort to review, implement process improvements, and integrate the estimated restoration time with their new OMS system, improving upon their results from last year.[74]

B. Otter Tail Power

70.34% of estimated restoration times were met or exceeded while 20.26% underestimated the amount of time to restore power by over 30 minutes.[75]

C. Xcel Energy

To measure estimated restoration time, Xcel uses a window beginning 90 minutes before the estimated restoration time and lasting up until the actual time (reported as -90 to 0). Xcel explained that it communicates three hours as a standard estimated restoration time to customers initially before the Company field personnel arrive and assess the outage cause and determine remedial action.[76] Xcel's restoration accuracy estimates for Minnesota increased slightly in 2024, from 49.5% of customers having their power restored either before or up to the stated restoration event time in 2023 to 60.6% in 2024. In its 2019 Order, the Commission requested Xcel provide the percent of outages restored 0 to 30 minutes after the estimated time, which was 17.6% in 2024, over twice as high compared to 2023.[77]

Staff created the figure below based on these metrics to visualize the trends, and notes that Xcel also calculates restorations within +1 to +90 minutes, in addition to the other two

[73] Docket 25-27, Department Initial Comments, p. 28

[74] Docket 25-29, Initial Filing, p. 68

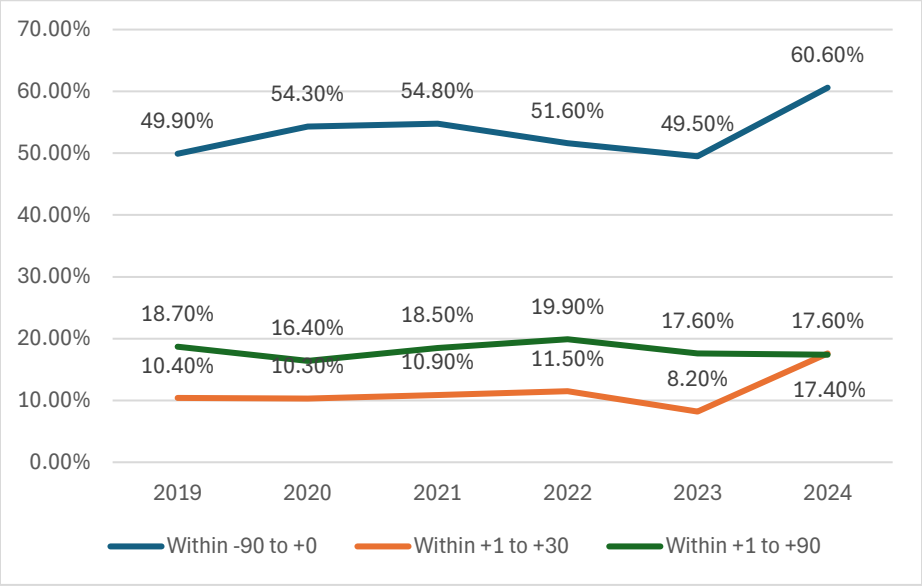
[75] Docket 25-30, Initial Filing, pp. 36-37

[76] Docket 25-27, Initial Filing, p. 67

[77] Docket 25-27, Initial Filing, p. 68

requirements. Overall, accuracy has increased in the -90 to 0 minute window.

Figure 27. Xcel's Estimated Restoration Time Accuracy (2019-2024)[78]



XI. Worst Performing Feeder

Minn. R. 7826.0500, Subp. 1(H), requires utilities to file, "to the extent technically feasible, circuit interruption data, including identifying the worst performing circuit in each work center, stating the criteria the utility used to identify the worst performing circuit, stating the circuit's SAIDI, SAIFI, and CAIDI, explaining the reasons that the circuit's performance is in last place, and describing any operational changes the utility has made, is considering, or intends to make to improve its performance."

A. Minnesota Power

Minnesota Power identified its four worst performing feeders, two urban and two rural for each of its three work centers (12 total).[79] The highest CAIDI was the Little Falls North Stepdown 1 which had outages impacting 596 customers in the Western Work Center. The highest SAIDI was in the Western Work Center at Cuyuna 1, impacting 115 customers. Weather, equipment failures, and vegetation were the leading causes of the poor performance. The Company has scheduled vegetation management for the Little Falls North Stepdown 1 for 2025.[80]

[78] Docket 25-27, Initial Filing, p. 68

[79] Docket 25-29, Initial Filing, p. 59-63

[80] Docket 25-29, Initial Filing, pp. 62-63

B. Otter Tail Power

The Company identified its worst performing feeders in each work center.[81] OTP's worst performing feeders included the Bemidji 25th St Substation North Feeder which experienced impacted 1235 customers on the feeder with the longest interruption being one hour and 54 minutes due a breaker opening from a squirrel. This feeder was trimmed in 2024 and will again be trimmed in 2025. The Company is considering animal guard installations at strategic locations associated with this feeder. Otter Tail stated they would continue to monitor and investigate upgrades to this feeder to ensure improved results into the future.[82]

C. Xcel Energy

Xcel Energy identified the five worst performing feeders for each of the four work centers, and the efforts taken to improve them, funded through its Feeder Performance Improvement Plan, which has increased in 2025. The improvement efforts included scheduled tree trimming, equipment and pole structure repair or replacement, if necessary, undergrounding, and installing or replacing reclosers. Uniquely at a Mankato substation and feeder, large flooding causes significant outages and the loss of a substation, causing the company to plan replacement and relocation of connecting line.[83]

XII. Major Service Interruptions

Minn. R. 7826.0500, Subp. 1(G), requires utilities to file copies of reports submitted to the Commission's Consumer Affairs Office under Minn. R. 7826.0700. Utilities must provide the following information on major service interruptions:

A. the location and cause of the interruption;
B. the number of customers affected;
C. the expected duration of the interruption; and
D. the utility's best estimate of when service will be restored, by geographical area.

In its December 18, 2020 Order the Commission varied Minn. R. 7826.0500, Subp. 1(G), to reduce contemporaneous reporting of major outages to the Commission's Consumer Affairs Office as well as with their SRSQ report.[84] With this variance, the utilities were not required to provide copies of the contemporaneous reporting with their annual reports, but they did provide a summary of major outage reporting.

[81] Docket 25-30, Initial Filing, pp. 18-19

[82] Docket 25-30, Initial Filing, p. 18

[83] Docket 25-27, Initial Filing Attachment M, pp.1-4

[84] Order Point 4, Docket Nos E002/M-20-406; E017/M-20-401; E015/M-20-404

A. Minnesota Power

MP identified 27 qualifying major service interruptions.[85] The Department highlighted an increase in outage events but a decrease in the average duration and average number of customers impacted. The Department acknowledged MP fulfilled their requirements.[86]

B. Otter Tail Power

Otter Tail Power reported 15 major service interruptions.[87] The Department noted a decrease in major service interruptions and highlighted OTP's comprehensive vegetation management program to minimize weather related interruptions.[88]

C. Xcel Energy

Xcel reported 492 major service interruptions for 2024. Xcel noted that it failed to provide email notice of 118 of these events to the CAO, due to human error of information not being transmitted from Xcel's Control Center to its Customer Advocate Group, who is responsible for transmitting to the CAO.[89] The Department expressed concern about the increase in reported and unreported major service interruptions in 2024, which were 78% and 900% higher, respectively, than the ten-year average.[90] Xcel offered broad proposals for how to mitigate these errors, including reviewing how it categorizes which outages must be reported, automating notification processes, and reviewing data.[91] In the Department's Supplemental response, the Department noted they would continue to monitor the situation.[92]

XIII. Bulk Power Interruptions

Minn. R. 7826.0500, Subp. 1(F), requires, "to the extent feasible, a report on each interruption of a bulk power supply facility during the calendar year, including the reasons for interruption, duration of interruption, and any remedial steps that have been taken or will be taken to prevent future interruption."

Otter Tail Power reported one bulk power supply interruption causing outages for 569

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85 Docket 25-29, Initial Filing, Appendix A

86 Docket 25-29, Department Comment, p. 10

87 Docket 25-30, Initial filing, Attachment 1

88 Docket 25-30, Department Comment, pp. 16-17

89 Docket 25-27, Xcel Reply Comments, p. 3

90 Docket 25-27, Department Comment, p. 15

91 Docket 25-27, Xcel Reply Comments, pp. 3-4

92 Docket 25-27, Department Supplemental Comment, p. 5

customers for 41 minutes.[93] The Department acknowledged OTP's fulfillment of the requirement.[94]

MP identified 5 bulk power interruptions, finding the interruptions occurred due to vegetation contact, a fallen guy wire, and lightning strikes.[95] The Department acknowledged MP's fulfillment of the requirement.[96]

Xcel reported no generation outages that caused an interruption of service to bulk power supply (firm electric) customers. Xcel stated that any curtailments were consistent with load management tariffs and Demand-Side Management programs in which the customer was enrolled.[97] Xcel did have 20 non-generation (transmission) outages to these customers, which are listed in Attachment N, and were overall lower than the five-year average.[98] Remedial steps taken included repair and replacement of poles, vegetation management, and issue isolation.[99]

XIV. Voltage Violations

Minn. R. 7826.0500, Subp. 1(I), requires utilities to submit "data on all known instances in which nominal electric service voltages on the utility's side of the meter did not meet the standards of the American National Standards Institute for nominal system voltages greater or less than voltage range B."

A. Minnesota Power

Minnesota Power reported 21 ANSI Voltage Range B violations in 2024 which were attributed to power supply issues, weather, and equipment failures.[100] The Department acknowledged MP's fulfillment of the requirement.[101]

B. Otter Tail Power

OTP provided a table listing the feeders and number of known occurrences where the voltage fell outside the American National Standards Institute (ANSI) voltage Range B in 2024. OTP noted that most of the feeders with numerous occurrences were feeders serving a single large

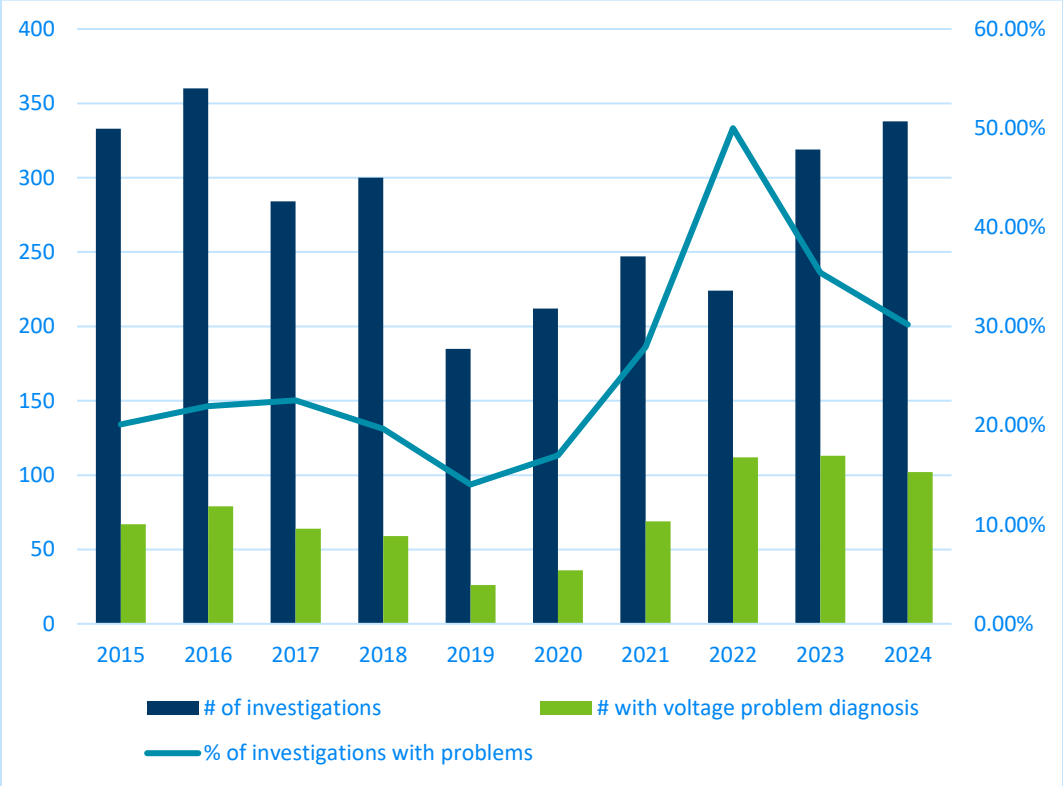
93 Docket 25-30, Initial filing, p. 17
94 Docket 25-29, Department Comment, p. 16
95 Docket 25-29, Initial Filing, pp. 58-60;
96 Docket 25-29, Department Comment, p. 10
97 Docket 25-27, Initial Filing, p. 64
98 Docket 25-27, Department Comments, p. 14
99 Docket 25-27, Initial Filing, Attachment N
100 Docket 25-29, Initial Filing, p. 63
101 Docket 25-29, Department Comment, p. 11

customer with a very large load.[102] The Department summarized the violations, noting an increase in events since 2020. OTP explained to the Department that moving forward, it will be utilizing data collected from its AMI systems. The Department acknowledged OTP's fulfillment of the requirements.[103]

C. Xcel Energy

During 2024, Xcel conducted 338 voltage investigations, 30% of which were caused by a specific voltage problem. The Department observed that violation instances have increased compared to the ten-year average,[104] and Xcel contended that the increase is due to "the penetration of solar generation, which can cause additional volt/var variance."[105]

Figure 28. Xcel Voltage Investigations and Violations (2015-2024)



XV. Grid Modernization Impacts on Reliability Metrics

In its March 19, 2019 Order, the Commission requested utilities discuss the impact of grid

[102] Docket 25-30, Initial Filing, pp. 20-25
[103] Docket 25-30, Department Comment, p. 18
[104] Docket 25-27, Department Comments, p. 16
[105] Docket 25-27, Initial Filing, p. 70

modernization investments on measures of reliability, along with investments that could improve tracking of outages or power quality issues. After reviewing utility responses in the 2018 reports, the Commission asked for input on a potential new comparison relating to grid modernization:

> *Provide a comparison of the reliability (SAIDI, SAIFI, CAIDI, MAIFI, normalized/non-normalized) of feeders with grid modernization investments such as Advanced Metering Infrastructure (AMI) or Fault Location Isolation and Service Restoration (FLISR), to the historic 5-year average reliability for the same feeders before grid modernization investments.*

Xcel Energy explained improvements from grid modernization are expected to be gradual, not immediate. The utility is working to expand its initial test area and feeders with its Open Loop FLISR . That deployment plan is expected to conclude in 2027. The Company also continued integration AMI efforts which will be used to enhance response to outages and improve reliability performance. Xcel noted that while performance is expected to increase, the increased granularity may reflect a decline in reported reliability metrics.[106]

OTP indicated any metric would not currently be applicable as OTP does not have FLISR or AMI installed. OTP expects to complete AMI installations in 2025.[107]

MP discussed continued implementation of TripSavers, use of FLISR, and strategic undergrounding as well as smart sensors and intelligent reclosers. As of 2024, MP has 350 TripSavers. Additionally, MP installed 15 IntelliRupters in 2024.[108] MP stated these improvements have already shown promise. For example, 6 faults were detected on a feeder that would previously have locked out. As a result, none of the 4,435 customers experienced a prolonged outage and MP estimated a savings of 11.4 SAIDI minutes (1.57 million customer outage minutes avoided).[109]

1. Staff Analysis

Commission Staff continues to recommend the comparison language above for utilities as grid modernization improvements continue to be implemented. Utilities continue to describe grid modernization improvements in detail in their Integrated Distribution Plans, but Staff wishes to see more directly how those improvements benefit the reliability metrics highlighted in these SRSQ reports. Commission Staff is aware of the potential for lengthy data reporting, and proposed for the purposes of the report that utilities provide aggregate comparisons of feeders—for example, the SAIDI of *all* feeders with grid modernization investments compared to the historic 5-year average SAIDI for the same set of feeders for the years preceding grid modernization improvements. This would also help assist in the variable nature when looking at

[106] Docket 25-27, Initial Filing, pp. 41-42

[107] Docket 25-30, Initial Filing, p. 37

[108] Docket 25-29, Initial Filing, p. 27

[109] Docket 25-29, Initial Filing, p. 30

feeder level reliability. Commission Staff continue to recommend utilities start including feeders in the calculations only after grid modernization improvements have been implemented for one full calendar year. Commission Staff will analyze effectiveness of these investments moving forward. For examples of the impact these investments have, see table 4 of MP's initial filing on page 29.

Staff notes that the Commission required Xcel to include feeder level reporting on its installation of Fault Location, Isolation, and Service Restoration (FLISR), a grid modernization initiative, in its 2021 Rate case. While the installation of FLISR is still ongoing, this is an example of how the Commission can track the impacts of grid modernization on reliability performance.

XVI. Safety

Utilities report two categories in their annual safety reports:

1. Occupational Illness and Injuries: summaries of all reports filed with the United States Occupational Safety and Health Administration (OSHA) and the Occupational Safety and Health Division (OSHD) of the Minnesota Department of Labor and Industry during the calendar year (Minn. R. 7826.0400, Part A)
2. Property Damage Claims: a description of all incidents during the calendar year in which an injury requiring medical attention or property damage resulting in compensation occurred as a result of downed wires or other electrical system failures and all remedial action taken as a result of any injuries or property damage described. (Minn. R. 7826.0400, Part B)

A. Minnesota Power

The Department noted an increase in 2024 cases compared to the 10-year average. The Company explained to the Department that one injury was a re-aggravation of a long standing medical condition, accounting for 60% of the lost time experienced due to the need for surgery and recovery. MP also reported 1 skin disorder injuries or illnesses in 2024 and 18 injuries.[110] The Company's paid out property damage claims were up from year to year and down from the 10-year average. The Department noted that approximately 49% of the value of 2024 claims were from crop damage. The Company noted to the Department these were necessary repairs from a weather related event impacting DC transmission line structures and were unavoidable due to the location of structures.[111]

B. Otter Tail Power

The Department provided tables showing OTP's historic incident rate, which indicated that 2024 saw a lower number of cases and days off of work.[112] The Department highlighted the

[110] Docket 25-29, Department Comment, pp. 3-4

[111] Docket 25-29, Department Comment, p. 4

[112] Docket 25-30, Department Comment, p. 7

Company had its lowest number of days off of work in the past 10 years. OTP had no property damage claims for 2024.[113]

C. Xcel Energy

The Department noted an increase in Xcel Energy employees days away from work and days of job transfers/restrictions in 2024 but that they were not outliers when compared to the 10 year average metrics. The Department concluded that Xcel complied with their reporting requirements.[114]

Xcel saw 81 property damage claims in 2024, slightly above their 10-year average of 72.6. To review the amount paid in claims compared to the 10-year average, review the Department's Trade Secret Comment.[115]

XVII. IEEE Reporting Issues

Over the past couple of years, IEEE data has been delayed with data removed that the Utilities employ to calculate their IEEE performance. This has caused concerns regarding statistical significance and confusion over Commission process and procedure. To confront these concerns, Staff requested in last year's Order that OTP and MP discuss options to alleviate concern regarding missing data. With that discussion, the comment process in this annual report proposed transferring to a standard using EIA 861 data, or an averaging technique to alleviate data concerns and process confusion. Below are each of the two Utilities proposals to confront poor data quality and the impact it has had on process and procedure.

A. OTP

OTP expressed an openness to utilizing EIA 861 benchmark data for reliability performance comparisons, while deferring to the Commission.[116]

B. MP

Minnesota Power requested the IEEE Benchmark be set to a five-year rolling average of the IEEE benchmark. Before 2017, the Company used a five-year rolling average for goal setting derived from their system data. The Company stated the Commission then set the goal between 2017 and 2020 off that data. However, questions arose regarding a comparison to the Company's peers as this data was siloed off from the industry as a whole. Due to this concern, IEEE benchmarking was discussed and decide upon to allow for industry peer comparison and better comparison over time with regards to changing weather and climate

[113] Docket 25-30, Department Comment, p. 8
[114] Docket 25-27, Department Comment, pp. 5-6
[115] Docket 25-27, Department Comment, p. 6
[116] Docket 25-30, Initial Filing, p. 42

impacts.[117] The Company also examined EIA 861 data which unlike IEEE Benchmarking, only requests annual totals. With an approach that is less standardized than IEEE, it also becomes harder to verify EIA data for accuracy and consistency.[118] Due to these issues of accuracy, consistency, and industry comparison, MP recommended setting goals based on a five-year average of IEEE benchmarking results for Small and Medium- sized utilities' 2nd quartile to provide a more stable and representative benchmark. The Company also notes this will help account for external factors impacting the distribution system (weather) and infrastructure investments that may not yield statistically significant improvements in a single year.[119] Importantly, this approach will eliminate the need for a supplemental filing after IEEE benchmark results are published.[120]

C. Department

The Department clarified MP's proposal of averaging five years of IEEE Benchmarking to mean for example, in the 2025 performance year, the Company's performance would be compared against IEEE Benchmark year 2021-2025 results for 2020 -2024 data.[121] The Department noted this approach would still not control for the possibility that IEEE data won't be available or reliable if insufficient reporting occurs given the voluntary nature of the reporting and that it is managed outside of the PUC's jurisdiction.

MP did suggest if there is missing data, that year could be thrown out of the average.[122] The Department noted that only 2023 results had a note from IEEE that the sample size was too small (at 4 participants) to be statistically significant. The Department also noted that the average number of small-sized utility participants from 2019 to 2023 was only 4.6. Given that participation of 4 is not atypical, the Department advised against excluding statistically insignificant results from MP's proposal if adopted.[123]

The Department reviewed EIA 861 benchmarking with OTP's proposal[124] and Minnesota Power's concerns with this standard. The Department agreed with the Minnesota Power regarding the completeness of the data to craft valid analysis and a complete annual review.[125]

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[117] Docket 25-29, Initial Filing, pp. 48-49

[118] Docket 25-29, Initial Filing, pp. 51-52

[119] Docket 25-29, Initial Filing, p. 53

[120] Docket 25-29, Initial Filing, p. 54

[121] Docket 25-29, Department Comment, p. 14

[122] Docket 25-29, Department Comment, Attachment 7, IR No. 6 at 3.

[123] Docket 25-29, Department Comment, p. 15

[124] Docket 25-30, Department Comment p. 20

[125] Docket 25-29, Department Comment, p. 15

The Department, considering the proposed 5 year averaging of data, support's MP's trend-based approach to benchmarking, along with the one-year lag in trend analysis to eliminate the need for a supplemental filing.[126]

In their review of OTP's proposal to transition to EIA 861, the Department requested a utilization of MP's five-year average of IEEE data (with a one-year reporting lag) instead to allow for greater detail and more informed conclusions. In IR 008, the Department asked if OTP was amenable to MP's proposal and OTP answered in the affirmative.[127]

D. Staff Analysis

Historically the Commission used a five-year rolling average of a utility's normalized SAIDI, SAIFI, and CAIDI data to set yearly reliability standards. However, this methodology had a fatal flaw: because it was based on the utility's own performance, if a utility had worsening performance, the standards matched that trend, meaning that customers could see a continual decline in reliability while a utility still "met" its standards at least some of the time. This led to the Commission "freezing" the standards at arbitrary levels when it felt like performance had declined too much.

In its March 19, 2019 Orders accepting the utility reports, the Commission required utilities to benchmark their performance to the IEEE reliability working group benchmarking study. In its January 28, 2020 Order, the Commission recognized some metrics, including the method by which it currently sets reliability goals, may need to be modified. Therefore, the Commission required utilities to "discuss transitioning from a five-year rolling average method of proposing SAIDI, SAIFI, and CAIDI standards, to standards that are similar to the second quartile rank of similarly sized investor-owned utilities under either the IEEE benchmarking study or using United States Energy Information Administration (EIA) reliability data." In their 2019 reports, all three utilities supported moving to benchmarking performance instead of the rolling five-year average, while the Department opposed the transition.

In the original discussion around the transition to benchmarking, Xcel noted that both the IEEE and EIA reliability data are not usually available until the third quarter of a calendar year, while the Commission's rules require annual reliability reports to be filed on April 1 of each year, which the Commission remedied by accepting Xcel's suggestion that utilities make a supplemental filing after the results are published.
Staff notes that using a five-year average of the IEEE working group results will mean the Commission is no longer comparing Minnesota utility performance to other utility performance for the same year. This somewhat diminishes the ability to compare performance based on the same year and same conditions. However, Staff believes that the lengthy delay in IEEE reporting

[126] Docket 25-29, Department Comment, pp. 16-17

[127] Docket 25-30, Department Comment, p. 21

outweighs the loss of this comparison moving to the five-year average will result in a timelier consideration of the annual SRSQ reports. Commission staff agree with the Department that the best course of action would be to maintain IEEE benchmarking and comparing against five years of results to the performance year. This will allow for streamlining of Commission processes, elimination of supplemental comment confusion and delay of recommendations by the Department during the initial and reply comment periods. It would also maintain a floating average to compare across the industry and across time, considering the impacts of industry and climate across the United States. Concerns about statistical significance itself is not a primary concern as we should not be removing performance data points due to statistical significance. The concern arises from no data points and allowing for a five-year averaging alleviates the concern. The added benefit is a smoother notice and comment period for staff.

XVIII. Staff Recommendations Discussion

Staff note that both OTP and MP are amenable to the shift in IEEE benchmarking to an averaging (Decision Options 2 and 3). To maintain consistency across all three utilities (OTP, MP, and Xcel) the Commission will want to apply the five-year average of IEEE benchmarking to Xcel as well (Decision Option 5). Xcel did not get a chance to confirm or deny if they would be amenable to this via the comment period. Staff recommend the Commissioners confirm Decision Option 5 is acceptable with Xcel during the agenda item.

To preserve the year-to-year comparison, Staff also recommends that utilities continue to report whether they met individual year quartile results in the *subsequent* year's report. For example, in the report for calendar year 2026 (filed April 1, 2027) a utility would report their results for calendar year 2025. Staff also agree with the Department that a year of statistical insignificance should not be removed as there is still value in that data.

If maintaining Xcel's current IEEE benchmarking standard (Decision Option 4), Staff note that MP and OTP's SRSQ reports may come up in an agenda item before and separate from Xcel's.

XIX. Decision Options

1. Accept Otter Tail Power's, Minnesota Power's, and Xcel Energy's 2023 Safety, Reliability, and Service Quality reports (*Xcel, MP, OTP, Department*).

Volume 1 Decision Options

Staff note: Classically a supplemental filing is required after the IEEE benchmarking data is posted, as that does not happen until after the April 1 filing deadline, however, this year, MP and OTP have proposed an alternative that removes the need for a supplemental filing

requirement. Decision Options 2-4 allows for this shift for OTP and MP while maintaining the same IEEE benchmarking comparisons (e.g. second quartile and utility size) for the utilities' reliability standards and a supplemental filing for Xcel. Decision option 5 would also negate the need for a Xcel supplemental filing, aligning with OTP and MP.

2. Set Minnesota Power's 2025 statewide Reliability Standard at a five-year mean of the IEEE benchmarking second quartile for medium utilities (2020-2024 data). Set Minnesota Power's work center reliability standards at a five-year mean of the IEEE benchmarking second quartile for small utilities (2020-2024 data). (*Minnesota Power, Department*)

3. Set Otter Tail Power's 2025 statewide Reliability Standard at a five-year mean of the IEEE benchmarking second quartile for medium utilities (2020-2024 data). Set Otter Tail's work center reliability standards at a five-year mean of the IEEE benchmarking second quartile for medium utilities (2020-2024 data). (*Otter Tail Power, Department*)

4. Set Xcel Energy's 2025 statewide Reliability Standard at the IEEE benchmarking second Quartile for large utilities. Set Xcel Energy's Southeast and Northwest work center reliability standards at the IEEE benchmarking second quartile for medium utilities. Set Xcel's Metro East and Metro West work center reliability center standards at the IEEE benchmarking second quartile for large utilities. Require Xcel Energy to file a supplement to its 2025 SRSQ report 30 days after IEEE publishes the 2025 benchmarking results, with an explanation for any standards the utility did not meet. (*Xcel, Department)*

   [OR]

5. Set Xcel Energy's 2025 statewide Reliability Standard at a five-year mean of the IEEE benchmarking second Quartile for large utilities (2020-2024 data). Set Xcel Energy's Southeast and Northwest work center reliability standards at a five-year mean of the IEEE benchmarking second quartile for medium utilities (2020-2024 data). Set Xcel's Metro East and Metro West work center reliability center standards at a five-year mean of the IEEE benchmarking second quartile for large utilities (2020-2024 data). (*Staff proposed alternative to above DO)*

Volume 2 Decision Options

6. Require Xcel Energy to file Call Center Response Time data in the format used in the July 11, 2025 Department of Commerce comments at page 40 in future safety, reliability, and service quality reports – broken out between agents (with subcategories), IVR (with subcategories), and totals. *(Staff recommendation)*

7. Require Xcel Energy, Minnesota Power, and Otter Tail Power to provide the following

information regarding electronic utility-customer interaction for the next three reporting cycles to build baselines for web-based service metrics, beginning in the 2025 safety, reliability, and service quality reports to be filed on April 1, 2026: *(Department)*

Percentage Uptime		[To second decimal]
	General Website	XX.XX%
	Payment Services	XX.XX%
	Outage map &/or Outage Info page	XX.XX%
Error Rate Percentage		[To third decimal]
	Payment Services*	XX.XXX%

*****If more granular data on Payment Services is available, the report shall break down the error rate for unexpected errors, errors outside of the customer's control (i.e. how often online payments fail for reasons other than insufficient funds or expired payment methods), and/or some other meaningful categorization.

[AND]

8. Require Xcel Energy, Minnesota Power, and Otter Tail Power to provide information on electronic utility-customer interaction for the next three reporting cycles, such that baseline data is collected on: *(Department)*
    a. Yearly total number of website visits.
    b. Yearly total number of logins via electronic customer communication platforms.
    c. Yearly total number of emails or other customer service electronic communications received.
    d. Categorization of email subject, and electronic customer service communications by subject, including categories for communications related to assistance programs and disconnections as part of reporting under Minn. Rule 7826.1700.
9. Require Xcel Energy, Minnesota Power, and Otter Tail Power to provide SRSQ data in .xslx format. *(Staff recommendation)*

Volume 3 Decision Options

<u>Variance to Minn. Rule 7820.2500</u>

10. Approve Xcel Energy's request for temporary extension of the variance to Minn. Rule 7820.2500 regarding AMI remote disconnection. *(Xcel, Department)*

[AND]

11. Extend Xcel Energy's variance until the Commission issues a decision on the variance request as presented in the 2025 Safety, Reliability, and Service Quality report to be filed on April 1, 2026 in Docket E-002/M-26-27. *(Xcel, Department)*

[If Decision Option 10 is not chosen, the Commission must choose Decision Option 12.]

12. Require Xcel Energy to revise its Manual Meter Reading Service Rider and Service Reconnection Tariff in its Electric Rate Book to the language in Xcel's Errata Letter to the August 30, 2022 Reply Comments in Docket E-002/M-22-233. *(Staff recommendation)*

Reporting Requirements from the Commission's Order in 24-27

13. Accept Xcel Energy's reporting as required by the Commission's January 13, 2025 Order in Docket No. E-002/M-24-27. *(Xcel, Department)*

Various Consumer Protections

14. Require Xcel Energy to evaluate whether the Company could allow a customer to complete its Medically Necessary Equipment & Emergency Certification form and indicate that Xcel Energy may reach out to the customer's medical provider to confirm their need for medically necessary service in its next annual SRSQ report, to be filed on April 1, 2026. *(Department)*

15. Require Xcel Energy to include stakeholder groups in any outreach related to its third-party evaluator's work. *(ELPC/CEF/VS)*

16. Require Xcel Energy to add layers to its ISQ map:
    a. Energy burden. (*Staff*)
    b. Distribution capital spending per customer.
    c. Households in a managed EV charging program.
    d. Age of distribution infrastructure.
    e. Outage response time and spending per customer/CBG.

XX. Attachment A – Xcel Reporting Matrix

Requirement	Item	Location
MINNESOTA RULE REQUIREMENTS		
7826.0400 ANNUAL SAFETY REPORT.		
	A. summaries of all reports filed with the United States Occupational Safety and Health Administration and the Occupational Safety and Health Division of the Minnesota Department of Labor and Industry during the calendar year	Section II.A

	B. a description of all incidents during the calendar year in which an injury requiring medical attention or property damage resulting in compensation occurred as a result of downed wires or other electrical system failures and all remedial action taken as a result of any injuries or property damage described.	Section II.B
7826.0500 RELIABILITY REPORTING REQUIREMENTS.		
	the utility's SAIDI for the calendar year, by work center and for its assigned service area as a whole; the utility's SAIFI for the calendar year, by work center and for its assigned service area as a whole; the utility's CAIDI for the calendar year, by work center and for its assigned service area as a whole; an explanation of how the utility normalize its reliability data to account for major storms	Section IV.B.1.a
	E. an action plan for remedying any failure to comply with the reliability standards set forth in part 7826.0600 or an explanation as to why noncompliance was unavoidable under the circumstances;	Section IV.B.2.a
	F. to the extent feasible, a report on each interruption of a bulk power supply facility during the calendar year, including the reasons for interruption, duration of interruption, and any remedial steps that have been taken or will be taken to prevent future interruption;	Section IV.B.3
	G. a copy of each report filed under part 7826.0700;	Section IV.B.4.a
	H. to the extent technically feasible, circuit interruption data, including identifying the worst performing circuit in each work center, stating the criteria the utility used to identify the worst performing circuit, stating the circuit's SAIDI, SAIFI, and CAIDI, explaining the reasons that the circuit's performance is in last place, and describing any operational changes the utility has made, is considering, or intends to make to improve its performance;	Section IV.B.2.b
	I. data on all known instances in which nominal electric service voltages on the utility's side of the meter did not meet the standards of the American National Standards Institute for nominal system voltages greater or less than voltage range B.	Section IV.B.5 Table 21
	J. data on staffing levels at each work center, including the number of full-time equivalent positions held by field employees responsible for responding to trouble and for the operation and maintenance of distribution lines;	Section IV.B.6
	K. Any other information the utility considers relevant in evaluating its reliability performance	
7826.0600 RELIABILITY STANDARDS.		
	Subpart 1. Annually proposed individual reliability standards. On or before April 1 of each year, each utility shall file proposed reliability performance standards in the form of proposed numerical values for the SAIDI, SAIFI, and CAIDI for each of its work centers. These filings shall be treated as "miscellaneous tariff filings" under the commission's rules of practice and procedure, part 7829.0100, subpart 11.	Section IV
7826.0700 REPORTING MAJOR SERVICE INTERRUPTIONS.		
	Subpart 1. Contemporaneous reporting. A utility shall promptly inform the commission's Consumer Affairs Office of any major service interruption. At that time, the utility shall provide the following information, to the extent known: A. the location and cause of the interruption; B. the number of customers affected; C. the expected duration of the interruption; and D. the utility's best estimate of when service will be restored, by geographical area. Subpart 2. Written report. Within 30 days, a utility shall file a written report on any major service interruption in which ten percent or more of its Minnesota customers were out of service for 24 hours or more. This report must include at least a description of: A. the steps the utility took to restore service; and B. any operational changes the utility has made, is considering, or intends to make, to prevent similar interruptions in the future or to restore service more quickly in the future.	Section IV.B.4.a
7826.1200 CALL CENTER RESPONSE TIME.		

	Subpart 1. Calls to business office. On an annual basis, utilities shall answer 80 percent of calls made to the business office during regular business hours within 20 seconds. "Answer" means that an operator or representative is ready to render assistance or accept the information to handle the call. Acknowledging that the customer is waiting on the line and will be served in turn is not an answer. If the utility uses an automated call-processing system, the 20-second period begins when the customer has selected a menu option to speak to a live operator or representative. Utilities using automatic call-processing systems must provide that option, and they must not delay connecting the caller to a live operator or representative for purposes of playing promotional announcements.	Section III.E
	Subpart 2. Calls regarding service interruptions. On an annual basis, utilities shall answer 80 percent of calls directed to the telephone number for reporting service interruptions within 20 seconds. "Answer" may mean connecting the caller to a recording providing, to the extent practicable, at least the following information: the number of customers affected by the interruption; the cause of the interruption; the location of the interruption; and the utility's best estimate of when service will be restored, by geographical area.	Section III.E
7826.1400 REPORTING METER-READING PERFORMANCE.		
	The annual service quality report must include a detailed report on the utility's meter-reading performance, including, for each customer class and for each calendar month: the number and percentage of customer meters read by utility personnel; the number and percentage of customer meters self-read by customers; the number and percentage of customer meters that have not been read by utility personnel for periods of six to 12 months and for periods of longer than 12 months, and an explanation as to why they have not been read; and	Section III.A.1
	D. data on monthly meter-reading staffing levels, by work center or geographical area	Section III.A.1
7826.1500 REPORTING INVOLUNTARY DISCONNECTIONS.		
	The annual service quality report must include a detailed report on involuntary disconnections of service, including, for each customer class and each calendar month: A. the number of customers who received disconnection notices; B. the number of customers who sought cold weather rule protection under Minnesota Statutes, sections 216B.096 and 216B.097, and the number who were granted cold weather rule protection; C. the total number of customers whose service was disconnected involuntarily and the number of these customers restored to service within 24 hours; and D. the number of disconnected customers restored to service by entering into a payment plan	Section III.C
7826.1600 REPORTING SERVICE EXTENSION REQUEST RESPONSE TIMES.		
	The annual service quality report must include a report on service extension request response times, including, for each customer class and each calendar month: A. the number of customers requesting service to a location not previously served by the utility and the intervals between the date service was installed and the later of the in-service date requested by the customer or the date the premises were ready for service; and B. the number of customers requesting service to a location previously served by the utility, but not served at the time of the request, and the intervals between the date service was installed and the later of the in-service date requested by the customer or the date the premises were ready for service.	Section III.D
7826.1700 REPORTING CALL CENTER RESPONSE TIMES.		
	The annual service quality report must include a detailed report on call center response times, including calls to the business office and calls regarding service interruptions. The report must include a month-by-month breakdown of this information.	Section III.E
7826.1800 REPORTING EMERGENCY MEDICAL ACCOUNT STATUS.		
And Commission Order in Docket No. E002/M-22-162, Dated October 20, 2023.	The annual service quality report must include the number of customers who requested emergency medical account status under Minnesota Statutes, section 216B.098, subdivision 5, the number whose applications were granted, and the number whose applications were denied and the reasons for each denial.	Section III.F
7826.1900 REPORTING CUSTOMER DEPOSITS.		

	The annual service quality report must include the number of customers who were required to make a deposit as a condition of receiving service.	Section III.G
7826.2000 REPORTING CUSTOMER COMPLAINTS.		
	The annual service quality report must include a detailed report on complaints by customer class and calendar month, including at least the following information: the number of complaints received; the number and percentage of complaints alleging billing errors, inaccurate metering, wrongful disconnection, high bills, inadequate service, and the number involving service- extension intervals, service-restoration intervals, and any other identifiable subject matter involved in five percent or more of customer complaints; the number and percentage of complaints resolved upon initial inquiry, within ten days, and longer than ten days; the number and percentage of all complaints resolved by taking any of the following actions: taking the action the customer requested; taking an action the customer and the utility agree is an acceptable compromise; providing the customer with information that demonstrates that the situation complained of is not reasonably within the control of the utility; or refusing to take the action the customer requested; and E. the number of complaints forwarded to the utility by the commission's Consumer Affairs Office for further investigation and action.	Section III.H
COMMISSION ORDERS		
Docket E002/M-23-73 December 5, 2023	6. Required Xcel to discuss how to lower the difference in SAIDI, SAIFI, and CAIDI between feeders associated with the different customer classes in their 2024 filing, including costs and benefits to implementation. This requirement ends on December 31, 2024, unless the Commission changes or extends it.	Section V.A
Docket No. E002/M-22-233 March 22, 2023	1. The Commission grants the petition of Northern States Power Company d/b/a Xcel Energy for a temporary variance to Minn. R. 7820.2500 for customers subscribed to Residential Service, Residential Time-of-Day Service, Small General Service, or Small General Time of Day Service. The variance may commence within 30 days, and shall be reevaluated annually in the Company's service quality reporting dockets until the variance is made permanent or terminated.	Section III.J

Requirement	Item	Location
Docket No. E002/M-22-233 March 22, 2023	Xcel Energy shall file a report on the following evaluation metrics in its service quality reports for 2023, 2024 and 2025: Meter-related complaints for advanced metering infrastructure. The percentage of customers flagged for disconnection who pay their disconnection amount in full in the current process versus after the variance has been implemented. The number of field visits required when the Company is unable to reach the customer (speaking to the customer or leaving a voicemail). The length of time for reconnecting each customer, and the method for reconnecting the customer. Re-analysis of actual costs for disconnection/reconnection requiring in-person visits and those performed remotely. Detailed cost information and subsequent analysis of costs as opposed to the Company's proposed language stating adjustments to costs can be following the first year of reporting. Progress exploring texting capabilities for customer contact and progress on an automated process for reconnection. Progress adding a direct link on its website to submit the Medically Necessary Equipment & Emergency Certification Form. Feedback from the Department of Commerce, Energy Assistance Unit regarding remote disconnection. Compliance with all consumer protection measures ordered in this proceeding. Detailed information on the number of customers opting out of AMI meter installation and demand-billed customers compared to customers with AMI meters installed. A proposal for using the capacity of its advanced metering infrastructure to restore electric service to customers during periods of extreme heat.	Section III.J
Docket No. E002/M-22-233 March 22, 2023	Within 30 days of filing its 2023, 2024, and 2025 service quality reports, Xcel Energy shall engage stakeholders to discuss the evaluation metrics requirements established in this docket. Complaints related to AMI meters. The percentage of customers flagged for disconnection who pay their disconnection amount in full under the current process, and the percentage under the new process. The number of field visits required when the Company is unable to reach the customer (speaking to the customer or leaving a voicemail). The length of time for reconnecting each customer, and the method for reconnecting the customer. Updated calculation of the Company's costs to disconnect and reconnect a customer remotely, and the costs to disconnect and reconnect a customer in person when a site visit is required. Detailed cost information and subsequent analysis of costs. The Company's progress in developing the capacity to contact customers via text, and in developing an automated process for reconnection. The Company's progress adding a direct link on the Company's website to submit the Medically Necessary Equipment & Emergency Certification Form. Feedback from the Department's Energy Assistance Unit regarding remote disconnection. Compliance with all consumer protection measures ordered in this proceeding.	Section III.J
Docket E,G-999/PR-22-13 Docket E002/M-22-162 January 18, 2023	Eliminated the standalone Annual Summary of Customer Complaints docket (YY-13). Required utilities to include customer complaint data from Minn. Rules 7820.0500 in their Annual Service Quality reports with data filed as part of Minn. Rules 7826.2000.	Section III.H
Docket E002/M-22-162 November 9, 2022	6. Require Xcel Energy to provide, beginning with its April 1, 2023 service quality filing, an additional data set that reports discreet meters unread for 6-12 months and 12+ months, with a single meter listed in the longest appropriate category only, in Xcel Energy's reporting under MN Rules Section 7826.1400. To the extent possible, include historic data in this format as well, with the past five years being optimal.	Section III.A.1; Attachment C
Docket E002/M-22-162 November 9, 2022	7. Required Xcel Energy to document response duration in days, beginning from the date of initial customer contact to the date of Company reply, for inquiries, complaints, or disputes related to DERs and/or the interconnection process that are received through Xcel's call center, email, or otherwise. Information shall be shared in a .xlsx format in the Company's 2023 service quality filing and in the temporary annual report in Docket No. E-999/CI-16-521.	Section III.H.4 Attachment G-2
Docket E002/M-22-162 November 9, 2022	8. Required Xcel, MP, OTP to each display, either directly or via a link to a PDF file, the utility's public facing summary, as shown in Attachment A, on the utility's website placed such that the summary is available to a website user after a single click away from the home page.	Section IV.A

Requirement	Item	Location
DOCKET E002/M-21-237 December 2, 2021	Required Xcel, MP, OTP to provide the following new information regarding electronic utility- customer interaction beginning with the reports filed in April 2023 Percentage Uptime to second decimal: General Website xx.xx% Payment Services xx.xx% Outage map &/or Outage Info page xx.xx% Error Rate Percentage to the third decimal Payment Services* xx.xxx% *if more granular data is available, please break down the error rate for unexpected errors, errors outside of the customer's control (i.e. how often to online payments fail for reasons other than insufficient funds or expired payment methods), and/or some other meaningful categorization." XE, MP and OTP provide percentage uptime and error rate percentage information in their annual reports for the next three reporting cycles, to build baselines for web-based service metrics (for 2021, 2022, 2023 annual reports)	Section III.I
DOCKET E002/M-21-237 December 2, 2021	XE, MP and OTP continue to provide information on electronic utility-customer interaction such that baseline data are collected: Yearly total number of website visits Yearly total number of logins via electronic customer communication platforms; Yearly total number of emails or other customer service electronic communications received; and Categorization of email subject, and electronic customer service communications by subject, including categories for communications related to assistance programs and disconnections as part of reporting under Minn. R. 7826.1700	Section III.I
DOCKET E002/M-21-237 December 2, 2021	6. Xcel to add in the upcoming and subsequent reports a "DER Complaint" reporting subcategory, following discussion with an input from the Complaint working group	Section III.H
Docket E002/M-20-406; December 18, 2020 Order	4. The Commission grants a variance to Minn. R. 7826.0500, subp.1, item G, applicable to MP, OTP and Xcel. The utilities must file a summary table that includes the information contained in the reports, similar to Att G of Xcel's filing	Section IV.B.4.a
Docket E002/M-20-406; December 18, 2020 Order	5. Utilities must file the reliability (SAIDI, SAIFI, CAIDI, MAIFI, normalized/non-normalized) for feeders with grid modernization investments such as Advanced Metering Infrastructure or Fault Location Isolation and Service Restoration to the historic five-year average reliability for the same feeders before grid modernization investments.	Section IV B.1.d
Docket E002/M-22-162; Order Date October 20, 2023	Xcel must file the information listed below with its future SRSQ reports until such time as the Commission modifies the reporting requirem2. Xcel must file the information listed below with its future SRSQ reports until such time as the Commission modifies the reporting requirement. Xcel shall provide the following information, as a downloadable .csv or .xlsx file, by feeder, for the calendar year. Xcel may exclude feeders that meet the 15/15 aggregation standard. Reliability reporting region where the feeder is located The substation the feeder is on, with its full name The zip code in which the feeder is primarily located The number of customers on the feeder, including the proportion of residential to commercial and industrial Whether the feeder is overhead or underground SAIDI, SAIFI, and CAIDI, normalized (IEEE 1366 Standard) and with Major Event Days Number of outages, total customer outages, and total customer-minutes-out for the following situations: All levels, All Causes included Bulk Power Supply - All causes, distribution, substation, transmission substation, and transmission line levels; All levels, no "planned" cause, includes bulk power supply All levels, "planned" cause only, includes bulk power supply. Xcel shall provide the following information, as a downloadable .csv or .xlsx file, by feeder, for the calendar year. Xcel may exclude feeders that meet the 15/15 aggregation standard. Reliability reporting region where the feeder is located The substation the feeder is on, with its full name The zip code in which the feeder is primarily located The number of customers on the feeder, including the proportion of residential to commercial and industrial Whether the feeder is overhead or underground SAIDI, SAIFI, and CAIDI, normalized (IEEE 1366 Standard) and with Major Event Days Number of outages, total customer outages, and total customer-minutes-out for the following situations: All levels, All Causes included Bulk Power Supply - All causes, distribution, substation, transmission substation, and transmission line levels; All levels, no "planned" cause, includes bulk power supply All levels, "planned" cause only, includes bulk power supply	Section IV.B.1.b

Requirement	Item	Location
Docket E002/M-22-162; Order Date October 20, 2023	2. Cont'd h. Number of outages, total customer outages, and total customer-minutes-out in the following primary outage cause categories, normalized and non-normalized i. Equipment - OH ii. Equipment - UG III. Lightning Other Power Supply Planned Public Unknown Vegetation Weather - non-lightning Wildlife	Section IV.B.1.b`
Docket E002/M-22-162 Order Date: October 20, 2023	4.(a) Non-normalized SAIDI, SAIFI and CAIDI values	Section IV.B.1.b
Docket E002/M-22-162 Order Date: October 20, 2023	4.(b) SAIDI, SAIFI, and CAIDI, MAIFI, CEMI, and CELI normalized values calculated using the 2.5 base method.	Section IV.B.1.b
Docket E002/M-22-162 Order Date: October 20, 2023	4.(c) MAIFI – normalized and non-normalized.	Section IV.C.1
Docket E002/M-22-162 Order Date: October 20, 2023	4. (e) CEMI – at normalized and non-normalized outage levels of 4, 5, and 6 interruptions.	Section IV.C.2
Docket E002/M-22-162 Order Date: October 20, 2023	4.(f) The highest number of interruptions experienced by any one customer (or feeder, if customer level is not available).	Section IV.C.2
Docket E002/M-22-162 Order Date: October 20, 2023	4.(g) CELI – at normalized and non-normalized intervals of greater than 6 hours, 12 hours, and 24 hours.	Section IV.C.3
Docket E002/M-22-162 Order Date: October 20, 2023	4.(h) The longest experienced interruption by any one customer (or feeder, if customer level is not available).	Section IV.C.3
Docket E002/M-22-162 Order Date: October 20, 2023	4.(j) A breakdown of field versus office staff as required Minn. Rules 7826.0500 Subp. 1, J, including separate information on the number of contractors for each work center.	Section IV.B.6
Docket E002/M-22-162 Order Date: October 20, 2023	4. (d) Estimated restoration time accuracy, using the following windows: a. Within -90 minutes to 0 of estimated restoration time	Section IV.B.4.b
Docket E002/M-22-162 Order Date: October 20, 2023	4.(i) Performance by customer class, If reporting by class is not yet possible, an explanation of when the utility will have this capability.	Section IV.B.1.b
Docket E002/M-22-162 Order Date: October 20, 2023	4.(k) Causes of sustained customer outages, by work center.	Section IV.B.2.a
Docket E002/M-14-131 December 12, 2014	Required Xcel to augment its next filing to include a description of the policies, procedures and actions that it has implemented, and plans to implement, to assure reliability, including information on how it is demonstrating pro-active management of the system as a whole, increased reliability, and active contingency planning. Required Xcel to incorporate into its next filing a summary table that allows the reader to more easily assess the overall reliability of the system and identify the main factors that affect reliability.	Section IV.A Section IV.B.1.b
Docket G002/CI-08-871 Docket E,G002/M-09-224 November 30, 2010	Direct Xcel to file the following information with its annual electric service quality reports filed pursuant to Minn. Rules, Part 7826.0500 and its annual gas service quality reports established in Docket No. G-999/CI-09-409 starting in 2013: Volume of Investigate and Remediate Field orders; Volume of Investigate and Refer Field orders; Volume of Remediate Upon Referral Field orders; Average response time for each of the above categories by month and year; Minimum days, maximum days, and standard deviations for each category; and Volume of excluded field orders.	Section III.B
Docket E002/M-05-551 April 7, 2006	3. In its annual safety, reliability, and service quality report due on or before April 1, 2007, Xcel Energy shall report on the 25 worst performing circuits in each of its four work centers.	Section IV.B.2.b
Docket E002/M-04-511 November 3, 2004	6. Xcel shall include, on a going forward basis, data regarding credit calls but not calls from C&I customers in its calculation of call center response times	Section III.E

Requirement	Item	Location
Docket E002/GR-21-630 July 17, 2023	27(a) A 2022 Electric Rate Case requirement that "Prior to seeking future cost recovery for any incremental FLISR investments, Xcel must propose a mechanism by which to base cost recovery for FLISR investments on reliability improvements: a. Xcel must track and report, beginning in its next Service Quality, Safety, and Reliability report due April 2024, on reliability performance for circuits equipped with FLISR investments approved in the present rate case as recommended by the Department, indicating in the Company's safety, reliability, and service quality filings which circuits have been equipped with FLISR. Allow Xcel to modify the requirements on circuit level performance reporting in its annual Service Quality, Safety, and Reliability reports to align with the Department's recommendation."	Section IV.A
24-27 January 13, 2025 Order		
Docket No. E002/M-24-27, January 13, 2025	6. Xcel's 2024 statewide Reliability Standard is set at the IEEE benchmarking second Quartile for large utilities. Xcel's Southeast and Northwest work center reliability standards are set at the IEEE benchmarking second quartile for medium utilities. Xcel's Metro East and Metro West work center reliability center standards are set at the IEEE benchmarking second quartile for large utilities.	Section V.B. [2025 Standards]
Docket No. E002/M-24-27, January 13, 2025	7. Xcel must file a supplement to its 2024 safety, reliability, and service quality report 30 days after IEEE publishes the 2024 benchmarking results, with an explanation for any standards the utility did not meet.	Section V.B. [2025 Standards]
Docket No. E002/M-24-27, January 13, 2025	Xcel must include an analysis and summary data based on the data points below for 2024 with its next safety, reliability, and service quality report due April 1, 2025 report to better determine if there are areas for improvement in shortening service timelines. Type of new service request (based on Request Type such as Service, Extension, Relocate/Lower Facilities, etc. and Value Characteristic such as Commercial Retail, Other Building, etc.) Date of new service request Requested new in-service date Date of meter installation Date of service connection	Section VI.B.1.
Docket No. E002/M-24-27, January 13, 2025	15. Xcel must report service extension timelines by work center in future safety, reliability, and service quality reports.	Section VI.B.1.
Docket No. E002/M-24-27, January 13, 2025	16. The Commission grants Xcel's request for a temporary extension of the variance to Minn. Rule 7820.2500 regarding AMI disconnection as approved in the Commission's March 22, 2023, order in Docket No. E-002/M-22-233.	Section VI.B.2.
Docket No. E002/M-24-27, January 13, 2025	17. The Commission extends the variance until the Commission issues a decision on the variance request as presented in the 2024 safety, reliability, and service quality report.	Section VI.B.2.
Docket No. E002/M-24-27, January 13, 2025	18. The extended variance is retroactively effective starting from the expiration of the previous variance on April 22, 2024.	Section VI.B.2.
Docket No. E002/M-24-27, January 13, 2025	19. The Commission increases the existing threshold of final contact for disconnection by requiring Xcel to use two methods of electronic communication, including either text message or email in addition to voicemail where the Company has received customer consent to do so.	Section VI.B.3.
Docket No. E002/M-24-27, January 13, 2025	20. The Commission approves Xcel's proposal to identify customers throughout its service territory that have not received LIHEAP assistance and are carrying past due balances and approve the Company's proposal to perform targeted outreach to the identified customers.	Section VI.B.4.
Docket No. E002/M-24-27, January 13, 2025	21. Xcel must perform additional outreach throughout its service territory with the goal of increasing participation in affordability programs that reduce bad debt.	Section VI.B.4.
Docket No. E002/M-24-27, January 13, 2025	22. Xcel must publish its disconnection and payment agreement policies and practices on its website. Subject to technical feasibility, Xcel shall make the edits discussed in ECC/CUB's September 12, 2024 comments to its payment agreement webpage.	Section VI.B.5.
Docket No. E002/M-24-27, January 13, 2025	23. Xcel must make a filing in the instant docket and Docket E,G-999/PR-24-02 detailing its current disconnection policies and practices, and require Xcel to submit additional filings in Docket E,G-999/PRYR-02 when there are changes to those policies and practices within 20 days of the Order.	Section VI.B.5.

Requirement	Item	Location
Docket No. E002/M-24-27, January 13, 2025	24. Xcel must propose a plan, in its 2024 safety, reliability, and service quality report due April 1, 2025, to restore power for involuntarily disconnected customers with AMI during a heat advisory or excessive heat warning, issued by the National Weather Service and to inform the Commission's consumer affairs office and customers of its plans to restore power for involuntarily disconnected customers with AMI during extreme heat events.	Section VI.B.6.
Docket No. E002/M-24-27, January 13, 2025	25. Xcel must conduct additional outreach and provide customers with information about how to request medical protections if they are particularly vulnerable to poor air quality.	Section VI.B.7.
Docket No. E002/M-24-27, January 13, 2025	26. Xcel must reduce its down payment requirements and modify its disconnection and payment agreement practices to include consideration of individual household financial circumstances. Xcel must offer the down payment percentage amounts as shown in the table above but may offer lower down payment plans as warranted by consideration of individual household circumstances.	Section VI.B.8.
Docket No. E002/M-24-27, January 13, 2025	27. Xcel must detail in its annual safety, reliability, and service quality report the average down-payment amount received from customers—both as a percentage of arrears and as a total dollar value—during CWR and non-CWR months. Xcel shall also explain how it has implemented the statutorily required consideration of both financial and extenuating circumstances during CWR and non-CWR months.	Section VI.B.9.
Docket No. E002/M-24-27, January 13, 2025	28. Xcel must not send disconnection notices until a customer's balance reaches $180 past due.	Section VI.B.8.
Docket No. E002/M-24-27, January 13, 2025	29. Xcel must not disconnect customers with a past due balance below $300.	Section VI.B.8.
Docket No. E002/M-24-27, January 13, 2025	30. Xcel must wait at least 10 days after sending a disconnection notice before disconnecting a customer.	Section VI.B.8.
Docket No. E002/M-24-27, January 13, 2025	Xcel must evaluate implementing the following policies and to file the evaluation by April 1, 2025 in its 2024 safety, reliability, and service quality report. Setting the reconnection fee at $0. The evaluation shall include an estimate of the costs of waiving reconnection fees and how the Company would propose to recover those costs. A proposal to increase the number of customers receiving pre-weatherization, weatherization, and energy efficiency improvements, including deep retrofits to create greater energy savings, in areas within the Company's service territory with high energy burden. The proposal should include year over year targets designed to increase the number of people receiving energy efficiency measures. A more robust hot-weather rule to prevent disconnections in months with the highest cooling energy burden. Creating an off-season LIHEAP program to help income-qualified residents clear their arrears by self-attesting to their income level.	Section VI.B.10.
Docket No. E002/M-24-27, January 13, 2025	32. Xcel must propose a plan, as part of its with its 2024 safety, reliability, and service quality report due on April 1, 2025, to restore power for involuntarily disconnected customers with AMI when high air quality index alerts have been issued.	Section VI.B.6.
Docket No. E002/M-24-27, January 13, 2025	33. Xcel must file in supplemental direct testimony to its rate case filed November 1, 2024 in Docket E002/GR-24-320 a program similar to its offering in Colorado where interest payments and fees from late bill payments are donated to low-income customer assistance programs or the elimination of late fees and interest.	Section VI.B.11.
Docket No. E002/M-24-27, January 13, 2025	34. Xcel must provide a discussion in its next safety, reliability, and service quality report on how it manages disconnections due to a landlord's failure to pay, consistent with the requirements in Minn. R. 7820.1400.	Section VI.B.12.
Docket No. E002/M-24-27, January 13, 2025	35. Xcel must inform affected personnel of racial disparities in electric service.	Section VI.B.13.
Docket No. E002/M-24-27, January 13, 2025	36. Xcel must file a compliance report with its annual safety, reliability, and service quality filing on which employees received the training and what information was provided.	Section VI.B.13.
Docket No. E002/M-24-27, January 13, 2025	37. Where not otherwise noted, Xcel must file any necessary revised tariff changes within 30 days of the date of this order.	Section VI.B.14.
Docket No. E002/M-24-27, January 13, 2025	38. Xcel must perform additional analysis as outlined in decision options below prior to developing a proposal for targeted undergrounding or enhanced vegetation management.	Section VI.B.18.

Requirement	Item	Location
Docket No. E002/M-24-27, January 13, 2025	Xcel must add the following data to its interactive service quality map by census block group by April 1, 2025: Municipal Boundaries Premise counts by census block group Percentage of underground electric assets Percent of electric premises disconnected for 24 hours or more Average age of arrears for disconnected premises Per premises energy costs	Section VI.B.15.
Docket No. E002/M-24-27, January 13, 2025	40. Xcel must add to its interactive service quality map the average age of homes by Census Block Group by April 1, 2025.	Section VI.B.15.
Docket No. E002/M-24-27, January 13, 2025	41. Xcel must add to its interactive service quality map the average amount of arrears for disconnected premises by April 1, 2025.	Section VI.B.15.
Docket No. E002/M-24-27, January 13, 2025	42. The Commission delegates authority to the Executive Secretary to work with Xcel and stakeholders to develop a proposal for what affordability and associated service quality data is reported in safety, reliability, and service quality report and what data continues to be reported in other dockets.	Section VI.B.16.
Docket No. E002/M-24-27, January 13, 2025	43. Xcel must conduct a study similar to the TRC Service Quality and Demographics Analysis on a three-year cycle with the next report due on April 1, 2027, with its safety, reliability, and service quality report. Xcel must use five years of data for future analyses.	Section VI.B.17.
Docket No. E002/M-24-27, January 13, 2025	44. Xcel must develop its data collected on causes of CELI-12 outages to inform which causes predominantly affect CBGs currently showing increased CELI-12. Xcel must to then analyze whether the primary causes emerging in census block groups with increased CELI-12 are caused by overhead assets.	Section VI.B.18.
Docket No. E002/M-24-27, January 13, 2025	45. Xcel must provide an analysis of distribution equipment vintages in the affected CELI-12 communities and analyze whether upgrading this equipment would be cost effective.	Section VI.B.18.
Docket No. E002/M-24-27, January 13, 2025	46. Xcel must hire an independent third-party evaluator with expertise in evaluating racial disparities to conduct a one-year study that will evaluate Xcel's practices and policies related to capital investment planning, outage restoration practices, and shutoff practices to better understand the causes of these discrepancies in shutoff rates and service reliability. Xcel must engage interested stakeholders to participate and collaborate with the independent third-party evaluator.	Section VI.B.19.

XXI. Attachment B – MP Reporting Matrix

NEW REPORTING REQUIREMENTS		
2023 SRSQ Report Order Dated January 13, 2025 in Docket No. E015/M-24-29		
Order Pt 2	Set Minnesota Power's 2024 statewide Reliability Standard at the IEEE benchmarking 2nd Quartile for medium utilities. Set Minnesota Power's work center reliability standards at the IEEE benchmarking 2nd quartile for small utilities.	Section IX Pg. 111
Order Pt 3	Required Minnesota Power to file a supplement to its 2024 SQSR report 30 days after IEEE publishes the 2023 benchmarking results, with an explanation for any standards the utility did not meet.	Anticipated to be filed Q3 2025
Order Pt 8	Minnesota Power must include a discussion on alternative approaches to reliability standard setting in their 2024 safety, reliability, and service quality reports.	Section V Pg. 48-54

Order Pt 9	Minnesota Power must include a discussion on the IEEE reporting sample size and data exclusion challenges from this year.	Section V Pg. 48-54
Order Pt 10	Minnesota Power must include a discussion of using the EIA 861 data to benchmark utility reliability performance.	Section V Pg. 48-54
Order Pt 12	Minnesota Power must include a discussion on the impact of its new OMS on reporting metrics and a comparison of data from its existing OMS system and its new OMS data, as available, in its 2024 safety, reliability, and service quality report.	Section V Pg. 68-69
ON-GOING REPORTING REQUIREMENTS		
2022SRSQ Report Order Dated December 5, 2023 in Docket No. E015/M-23-75		
Order Pt 7	Minnesota Power is required to provide CEMI (3, 4, 5, 6) and CELI (6, 12, 24), storm included, and storm excluded, for their overall system, as well as their individual service regions, until such time the Commission changes or rescinds this requirement.	Section V Pg. 66-67
2021SRSQ Report Order Dated November 9, 2022 in Docket No. E015/M-22-163		
Order Pt 8	Required Xcel Energy, Minnesota Power, and Otter Tail Power to each display, either directly or via a link to a PDF file, the utility's public facing summary, as shown in Attachment A, on the utility's website placed such that the summary is available to a website user after a single click away from the home page.	Section I Pg. 13-14
Annual Summary of Customer Complaints Pursuant to Minn. R. 7820.0500 Order Dated January 18, 2023 in Docket No. E, G-999/PR-22-13		
Order Pt 2	Required utilities to include customer complaint data from Minnesota Rules 7820.0500 in their Annual Service Quality reports with data filed as part of Minnesota Rules 7826.2000.	Section VIII Pg. 105-110
2020 SRSQ Report Orders Dated December 2, 2021 & March 2, 2022 in Docket No. E015/M-21-230		
Order Pt 4 (3/2/22)	Establish three work centers for Minnesota Power, as described on pages 25-26 of the Company's 2020 Safety, Reliability, and Service Quality Report.	Section V Pg. 46-47
Order Pt 2 (12/2/21)	Provide the following new information regarding electronic utility-customer interaction beginning with the reports filed in April 2023: Percentage Uptime [to second decimal] General Website XX.XX% Payment Services XX.XX% Outage map &/or Outage Info page XX.XX% Error Rate Percentage [to third decimal] Payment Services* XX.XXX% *If more granular data is available, please break down the error rate for unexpected errors, errors outside of the customer's control (i.e. how often to online payments fail for reasons other than insufficient funds or expired payment methods), and/or some other meaningful categorization."	Section VII Pg.81-82
Order Pt 3 (12/2/21)	Provide percentage uptime and error rate percentage information in their annual reports for the next three reporting cycles, to build baselines for web-based service metrics.	Section VII Pg.81-82

Order Pt 4 (12/2/21)	Continue to provide information on electronic utility-customer interaction such that baseline data are collected: a. Yearly total number of website visits; . Yearly total number of logins via electronic customer communication platforms; c. Yearly total number of emails or other customer service electronic	Section VII Pg.79-81
	communications received; and d. Categorization of email subject, and electronic customer service communications by subject, including categories for communications related to assistance programs and disconnections as part of reporting under Minn. R. 7826.1700.	
Order Pt 7 (12/2/21)	File public facing summaries with their annual Safety, Reliability, and Service Quality reports. Utilities shall work with the Executive Secretary to publish those summaries in locations visible to consumers.	Section I Pg. 13-14
2019 SRSQ Report Order Dated December 18, 2020 in Docket No. E015/M-20-404		
Order Pt. 5	File the reliability (SAIDI, SAIFI, CAIDI, MAIFI, normalized/non-normalized) for feeders with grid modernization investments such as Advanced Metering Infrastructure or Fault Location Isolation and Service Restoration to the historic five-year average reliability for the same feeders before grid modernization investments.	Section III Pg. 28-30
2018 SRSQ Report Order Dated January 28, 2020 in Docket No. E015/M-19-254		
Order Pt. 2	The Commission clarifies the reporting requirements from the Commission's March 19, 2019 order, as specified in Attachment B: 1. Non-normalized SAIDI, SAIFI, and CAIDI values. 2. SAIDI, SAIFI, and CAIDI, MAIFI, CEMI, and CELI normalized values calculated using the IEEE 1366 Standard. 3. MAIFI – normalized and non-normalized. 4. CEMI – at normalized and non-normalized outage levels of 4, 5, and 6 interruptions. 5. The highest number of interruptions experienced by any one customer (or feeder, if customer level is not available). 6. CELI – at normalized and non-normalized intervals of greater than 6 hours, 12 hours, and 24 hours. 7. The longest experienced interruption by any one customer (or feeder, if customer level is not available). 8. A breakdown of field versus office staff as required Minn. Rules 7826.0500 Subp. 1, J, including separate information on the number of contractors for each work center. 9. Estimated restoration time accuracy, using the following windows: a. Within -90 minutes to 0 of estimated restoration time b. Within 0 to +30 minutes of estimated restoration time 10. IEEE benchmarking results for SAIDI, SAIFI, CAIDI, and MAIFI from the IEEE benchmarking working group. 11. Performance by customer class: ASAI, SAIDI, SAIFI, CAIDI, MAIFI Residential Non-normalized & Normalized, Commercial Non-normalized & Normalized; Industrial Non-normalized & Normalized. If reporting by class is not yet possible, an explanation of when the utility will have this capability. 12. Causes of sustained customer outages, by work center.	Section V Pg. 55
Reconnect Pilot Program Orders Dated December 9, 2020 and January 9, 2024 in Docket No. E015/M-19-766		

	The Company committed to providing specific data related to its remote-reconnect pilot program (Reconnect Program) 1. Number of customers participating in the remote-reconnect program; 2. Total number of Minnesota Power customers receiving low-income home energy assistance; 3. Number of remote-reconnect participants receiving low-income assistance; 4. Number of customers who have opted out of the remote-reconnect program;	Section VIII Pg. 86-90
	5. Estimated annual cost savings from the remote-reconnect program; 6. Average time to reconnect using the remote-reconnect program compared to the standard reconnection process; and 7. Number of reconnections restored within 24 hours of disconnection, distinguishing between standard and remote reconnections.	
Minnesota Rules 7826.0400 – 7826.2000		
Annual Safety Report 7826.0400		
Summaries of all reports filed with United States Occupational Safety and Health Administration and the Occupational Safety and Health Division of the Minnesota Department of Labor and Industry during the calendar year.		Section IV Pg. 42-44
A description of all incidents during the calendar year in which an injury requiring medical attention or property damage resulting in compensation occurred as a result of downed wires or other electrical system failures and all remedial action taken as a result of any injuries or property damage described.		Section IV Pg. 42-44
Reliability Reporting Requirements 7826.0500		
The utility's SAIDI for the calendar year by work center and for its assigned service area as a whole.		Section V Pg. 55
The utility's SAIFI for the calendar year by work center and for its assigned service area as a whole.		Section V Pg. 55
The utility's CAIDI for the calendar year by work center and for its assigned service area as a whole.		Section V Pg. 55
An explanation of how the utility normalizes its reliability data to account for major storms.		Section V Pg. 56-57
An action plan for remedying any failure to comply with the reliability standards set forth at part 7826.0600 or an explanation as to why non-compliance was unavoidable under the circumstances.		Section V Pg. 56-57
To the extent technically and administratively feasible, a report on each interruption of a bulk power supply facility during the calendar year, including the reasons for interruption, duration of interruption, and any remedial steps that have been taken.		Section V Pg. 58
A copy of each report filed under part 7826.0700 REPORTING MAJOR SERVICE INTERRUPTIONS.		Appendix A
To the extent technically feasible, circuit interruption data, including identifying the worst performing circuit in each work center, stating the criteria the utility used to identify the worst performing circuit, stating the circuit's SAIDI, SAIFI, and CAIDI, explaining the reasons that the circuit's performance is in last place, and describing any operational changes the utility has made, is considering, or intends to make to improve its performance.		Section V Pg. 60-63
Data on all known instances in which nominal electric service voltages on the utility's side of the meter did not meet the standards of the American National Standards Institute for nominal system voltages greater or less than voltage range B.		Section V Pg. 63

Data on staffing levels at each work center, including the number of full-time equivalent positions held by field employees responsible for responding to trouble and for the operation and maintenance of distribution lines.	Section V Pg. 64-65
Any other information the utility considers relevant in evaluating its reliability performance over the calendar year.	Section V Pg. 66-68
RELIABILITY STANDARDS 7826.0600; Subpart 1	
On or before April 1 of each year, each utility shall file proposed reliability performance standards in the form of proposed numerical values for the SAIDI, SAIFI, and CAIDI for each of its work centers. These filings shall be treated as "miscellaneous tariff filings" under the Commission's rules of practice and procedure, part 7829.0100, subp. 11.	Section IX Pg. 111
REPORTING METER-READING PERFORMANCE 7826.1400	
The annual service quality report shall include a detailed report on the utility's meter reading performance, including, for each customer class and for each calendar month: A. The numbers and percentages of customer meters read by utility personnel. B. The numbers and percentages of customer meters self-read by customers. C. The number and percentage of customer meters that have not been read by utility personnel for periods of six to twelve months and for periods of longer than twelve months, and an explanation as to why they have not been read. D. Data on monthly meter-reading staffing levels, by work center or geographical area.	Section VI Pg. 70-76
REPORTING INVOLUNTARY DISCONNECTIONS 7826.1500	
The annual service quality report must include a detailed report on involuntary disconnections of service, including, for each customer class and each calendar month: A. the number of customers who received disconnection notices; B. the number of customers who sought cold weather rule protection under chapter 7820 and the number who were granted cold weather rule protection; C. the total number of customers whose service was disconnected involuntarily and the number of these customers restored to service within 24 hours; and D. the number of disconnected customers restored to service by entering into a payment plan.	Section VIII Pg. 83-90
REPORTING SERVICE EXTENSION REQUEST RESPONSE TIMES 7826.1600	
The annual service quality report must include a detailed report on service extension request response times, including, for each customer class and each calendar month: A. The number of customers requesting service to a location not previously served by Minnesota Power and the intervals between the date service was installed and the later of the in-service date requested by the customer or the date the premises were reads for service. B. The number of customers requesting service to a location previously served by Minnesota Power, but not served at the time of the request, and the intervals between the date service was installed and the later of the in-service date requested by the customer or the date the premises were ready for service.	Section VIII Pg. 90-97
REPORTING CALL CENTER RESPONSE TIMES 7826.1700	
The annual service quality report must include a detailed report on call center response times, including calls to the business office and calls regarding service interruptions. The report must include a month-by-month breakdown of this information.	Section VIII Pg. 97-103
REPORTING EMERGENCY MEDICAL ACCOUNT STATUS 7826.1800	
The annual service quality report must include the number of customers who requested emergency medical account status under Minn. Stat. §216B.098, subd. 5, the number whose applications were granted, and the number whose applications were denied, and the reasons for each denial.	Section VIII Pg. 104-105

REPORTING CUSTOMER DEPOSITS 7826.1900	
The annual service quality report must include the number of customers who were required to make a deposit as a condition of receiving service.	Section VIII Pg. 105
REPORTING CUSTOMER COMPLAINTS 7826.2000	
The annual service quality report must include a detailed report on complaints by customer class and calendar month, including at least the following information: A. The number of complaints received; B. The number and percentage of complaints alleging billing errors, inaccurate metering, wrongful disconnection, high bills, inadequate service, and the number involving service extension intervals, service restoration intervals, and any other identifiable subject matter involved in five percent or more of customer complaints;	Section VIII Pg. 105-110

C. the number and percentage of complaints resolved upon initial inquiry, within ten days, and longer than ten days; D. The number and percentage of all complaints resolved by taking any of the following actions: (1) taking the action the customer requested; (2) taking an action the customer and the utility agree is an acceptable compromise, (3) providing the customer with information that demonstrates that the situation complained of is not reasonably within the control of the utility; or (4) refusing to take the action the customer requested. E. The number of complaints forwarded to the utility by the Commission's Consumer Affairs Office for further investigation and action.	