COMMERCE DEPARTMENT

August 29, 2018

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 280
St. Paul, Minnesota 55101-2147

RE: **Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket No. E002/M-18-239

Dear Mr. Wolf:

Attached are the Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) in the following matter:

> 2017 *Annual Electric Service Quality Report* (Report) submitted by Northern States Power Company, d/b/a Xcel Energy (Xcel or the Company).

The 2017 petition was filed on March 30, 2018 by:

> Gail Baranko
> Manager, Regulatory Project Management
> Xcel Energy
> 414 Nicollet Mall
> Minneapolis, Minnesota 55401

The Department recommends that the Minnesota Public Utilities Commission (Commission) **accept Xcel's Report, approve the Company's proposed reliability goals for 2018, and specify continued reporting requirements**.

The Department is available to answer any questions that the Commission may have.

Sincerely,

/s/ DANIEL W. BECKETT
Public Utilities Rates Analyst

AB/ja
Attachment

COMMERCE DEPARTMENT

Before the Minnesota Public Utilities Commission

Comments of the Minnesota Department of Commerce Division of Energy Resources

Docket No. E002/M-18-239

I. BACKGROUND

Minnesota Rules, Chapter 7826 were developed as a means for the Minnesota Public Utilities Commission (Commission) to establish safety, reliability and service quality standards for utilities "engaged in the retail distribution of electric service to the public" and to monitor their performance as measured against those standards. There are three main annual reporting requirements set forth in the rule. These are:

- the annual safety report (Minnesota Rules, part 7826.0400);
- the annual reliability report (Minnesota Rules, parts 7826.0500, subp. 1 and 7826.0600, subp. 1); and
- the annual service quality report (Minnesota Rules, part 7826.1300).

In addition to the rule requirements, the Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249 directed Northern States Power Company, a Minnesota corporation (Xcel or the Company) to provide the following information in its next annual report:

A. The Company's data on benchmarking with national IEEE [Institute of Electrical and Electronics Engineers] Reliability Standards;
B. A qualitative discussion of ways the Commission looks at increased granularity;
C. An assessment of MAIFI [Momentary Average Interruption Frequency Index] data;
D. A summary of the Company's estimated response time to customers and steps the Company is taking to measure and communicate more accurately the Company's estimated response time to customers;
E. The Company's internal customer satisfaction goals and a comparison of the Company's actual performance to those

goals, as well as an explanation of the basis for those customer satisfaction goals;

F. With respect to the distribution feeder table identification provided in the report, Xcel shall include the appropriate locational labels, applicable substation name, and region to which the information relates;

G. The Company's additional thinking on CEMI [Customers Experiencing Multiple Interruptions] and CELI [Customers Experiencing Lengthy Interruptions] metrics after consultation with the DOC [Minnesota Department of Commerce] and other interested parties; and

H. Data on the number of applicants and participants in the Company's emergency medical accounts.

On March 30, 2018, Xcel filed a petition (2017 Report) to comply with Minnesota Rules Chapter 7826 and the Commission's February 9, 2018 Order.

On June 22, 2018, Xcel filed a supplemental filing to update data on incidents in which an injury requiring medical attention or property damage resulting in compensation occurred. The revised data (Updated Attachment B to the 2017 Report) includes 16 additional incidents that were inadvertently omitted from the originally filed Attachment B.

On July 27, 2018, Xcel filed an errata correcting meter reading data (Attachment F to the 2017 Report).

II. SUMMARY OF REPORT AND DEPARTMENT ANALYSIS

The Department reviewed Xcel's 2017 Report to assess compliance with Minnesota Rules Chapter 7826 and the Commission's 2018 Order. The Department used information from past annual reports to facilitate identification of issues and trends regarding Xcel's performance.

A. ANNUAL SAFETY REPORT

The annual safety report consists of two parts:[1]

[1] Minnesota Rules, part 7826.0400, available at: https://www.revisor.mn.gov/rules/?id=7826.0400

A. a summary of all reports filed with the United States Occupational Safety and Health Administration (OSHA) and the Occupational Safety and Health Division of the Minnesota Department of Labor and Industry (OSHD) during the calendar year; and

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.

Xcel provided summaries of 2017 data requested by the U.S. Department of Labor. This information reflects safety information on a random selection of the Company's plants and is therefore not necessarily comparable year to year.

Xcel reported no payments in compensation for injuries requiring medical attention resulting from downed wires or other electrical system failures in 2017.

Table 1 summarizes Xcel's most recent and past reports regarding property damage claims. [2]

Table 1: Property Damage Reimbursement

Year	Claims	Total Amount Paid
2003	212	$255,164.74
2004	108	$105,016.97
2005	184	$202,574.46
2006	122	$111,378.90
2007	132	$203,633.50
2008	61	$210,770.02
2009	85	$163,760.17
2010	107	$147,886.24
2011	128	$356,107.39
2012	88	$135,836.53
2013	110	$184,083.70
2014	92	$137,610.16
2015	90	$185,584.32
2016	47	$111,289.98
2017	50	$135,844.06

[2] Department's calculations based on data provided in Attachment B of the Report.

The Department notes that property damage due to overhead conductors has been the most costly category for eight of the last 15 years. Overall, the number of claims and the amounts paid have stayed within a relatively consistent range, and do not show any indication of systematic increases.

B. ANNUAL RELIABILITY REPORT

Minnesota Rules, part 7826.0500 requires each utility to file an annual report that includes the following information: [3]

1. reliability performance (subpart 1.A, 1.B and 1.C),
2. storm-normalization method (subpart 1.D),
3. action plan for remedying any failure to comply with reliability goals (subpart 1.E),
4. bulk power supply interruptions (subpart 1.F),
5. major service interruptions (subpart 1.G),
6. circuit interruption data (subpart 1.H),
7. known instances in which nominal voltages did not meet American National Standards Institute standards (subpart 1.I),
8. work center staffing levels (subpart 1.J), and
9. any other relevant information (subpart 1.K).

1. Reliability Performance

Xcel described the method it used to calculate reliability performance and provided a table showing its 2017 reliability performance in comparison with the goals the Commission set in Docket No. E002/M-17-249. [4]

[3] Minnesota Rules, part 7826.0500, available at: https://www.revisor.mn.gov/rules/?id=7826.0500

[4] The reliability indices (CAIDI = Customer Average Interruption Duration Index, SAIDI = System Average Interruption Duration Index, and SAIFI = System Average Interruption Frequency Index) used in this section are defined under Minnesota Rules, part 7826.0200, subparts 4, 10 and 11, available at: https://www.revisor.mn.gov/rules/?id=7826.0200

Table 2: Xcel's 2017 Reliability Performance Compared with Goals[5]

		2017 Performance	2017 Proposed Goals
Metro East	SAIDI	66.17	89.13
	SAIFI	0.69	0.87
	CAIDI	95.33	102.42
Metro West	SAIDI	69.51	92.06
	SAIFI	0.71	0.89
	CAIDI	97.84	103.98
Northwest	SAIDI	75.77	95.88
	SAIFI	0.76	0.81
	CAIDI	100.28	118.45
Southeast	SAIDI	87.67	99.16
	SAIFI	**0.80**	0.74
	CAIDI	109.73	134.40

The numbers in bold indicate performance that did not meet its respective goal. Xcel missed only one of its twelve goals in 2017.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subparts 1.A, 1.B, and 1.C.

2. Storm-Normalization Method

Xcel reported that its reliability data is normalized to account for major storms by removing outages that start on a storm day. Using the previous five years of outage history for each region, Xcel identifies "storm days" by:

- calculating the number of sustained outages per day;
- calculating the average number of sustained outages per day; and
- calculating the standard deviation of the number of sustained outages per day. Xcel thus defines a "storm day" as any day meeting or exceeding the average number of outages per day plus three standard deviations.

The Company noted that 2017 was a mild weather year and this fact is manifested in its reliability results.

[5] Table at page 7 of the 2017 Report.

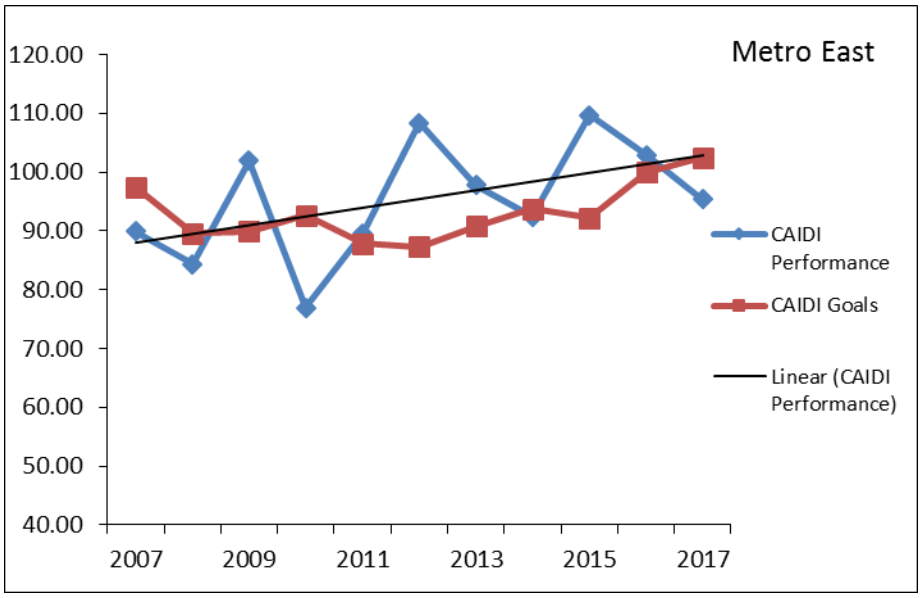
The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.D.

3. Action Plan to Improve Reliability

As shown in Table 2 above, Xcel met eleven of its twelve goals in its work centers in 2017. Additionally, performance in the Metro East work center improved significantly.

At this time, it appears that Xcel's SAIDI and SAIFI performances are holding steady or trending toward improvement; however, over previous years, there had been, and somewhat continues to be, a clear trend of a decline in CAIDI performance in all four work centers. Figures 1 through 4 below show CAIDI performance over the previous eleven years for each of Xcel's work centers.[6]

Figure 1: Metro East Historic CAIDI Performance



[6] As a reminder, declining numbers indicate improving performance, while increasing numbers indicate declining performance.

Figure 2: Metro West Historic CAIDI Performance

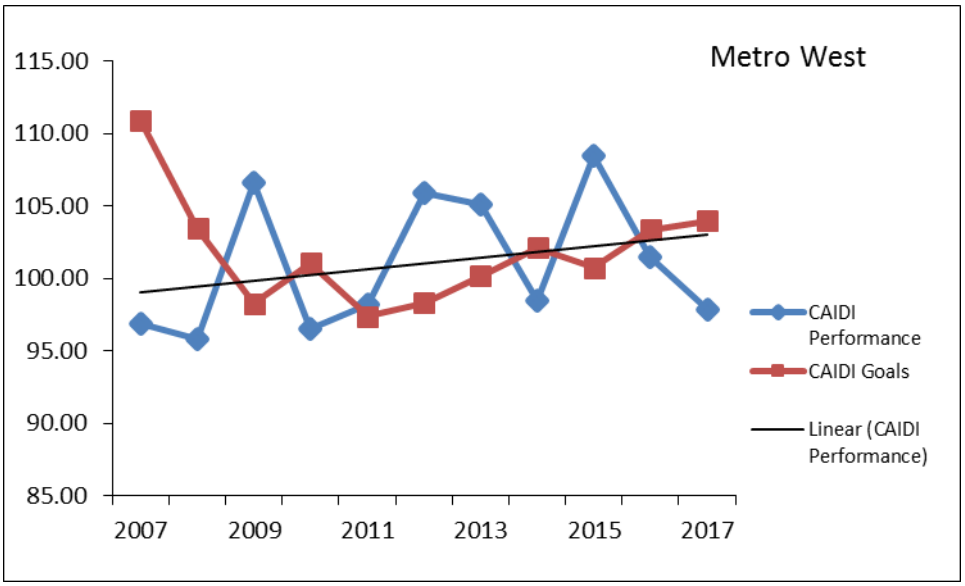


Figure 3: Northwest Historic CAIDI Performance

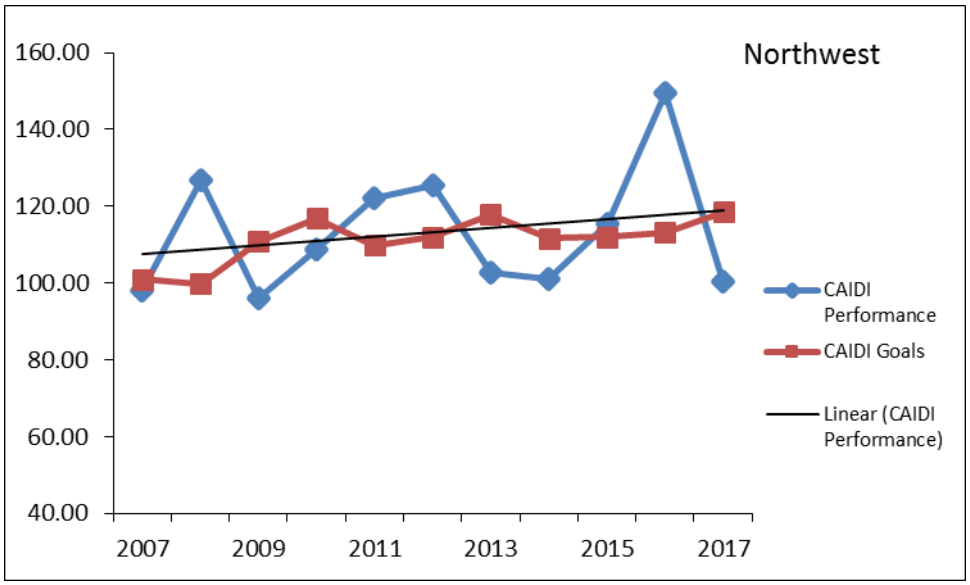
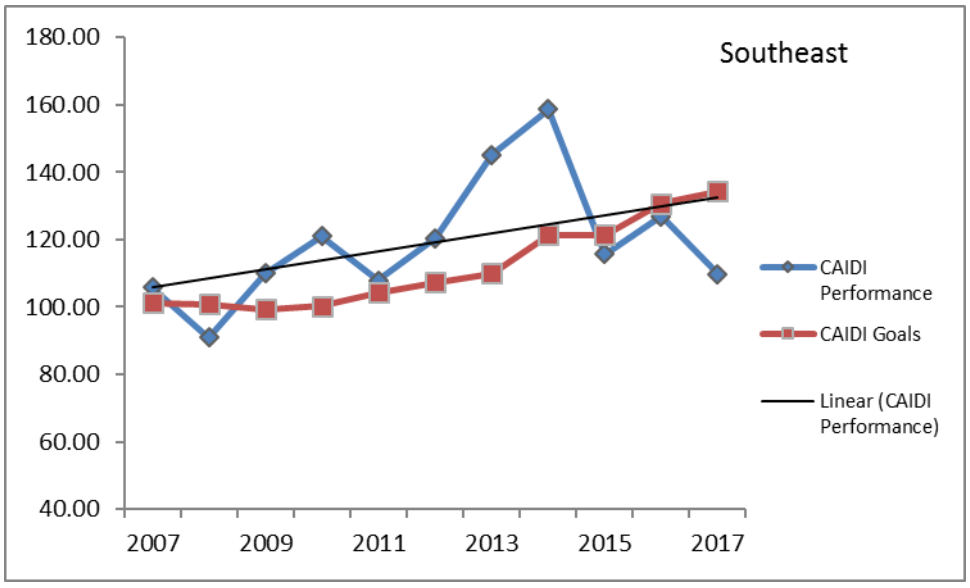


Figure 4: Southeast Historic CAIDI Performance



Evaluating this CAIDI trend against generally steady or improving SAIDI and SAIFI performance indicates that Xcel has reduced the number of overall outage minutes as well as the frequency of outages, but customers experiencing outages are without power for a longer period of time, on average. Improving SAIDI and SAIFI performances indicate improvement to the system as a whole.
Xcel has addressed its CAIDI performance over recent years in several previous dockets.

In its 2013 Annual Electric Service Quality Report (2013 Report), the Department requested that Xcel discuss its deteriorating CAIDI performance. In its Reply Comments,[7] the Company explained the creation of its CAIDI workgroup.

> We have formed a CAIDI improvement team made up of employees from the Engineering, Construction, Control Center and Trouble operations groups to examine causes and to develop solutions to improve CAIDI performance. The team began meeting monthly in the first quarter of 2014 and is developing a CAIDI reduction plan. We discuss some of the factors identified by the team which impact CAIDI improvement below.
>
> - Time Recording: When a crew has restored an outage, procedure dictates that they record the time at which the

[7] Docket No. E002/M-14-131, Xcel's Reply Comments, filed July 25, 2014.

line was restored. However, the team discovered that crew-recorded data does not precisely match the actual times the meters were energized according to the recorded automated meter reading (AMR) data. Some crews were rounding the restore time to the quarter or half hour closest to the energize time which resulted in some outages appearing to last longer, adversely affecting CAIDI metrics. To reduce inaccurate time recording, we implemented a "Restore Time Campaign" in April 2014 for all field forces that record restore time data following an outage. We stress to these crews that every second counts; if they restore power at 10:12, they should record 10:12. Crews are now better trained to record the restore time before finishing other post-outage tasks, whereas before they sometimes recorded the all-tasks completion time instead of the power restored time. We can continue to monitor improvements in crew data recording by crosschecking AMR times against restore times and working directly with crews who are not recording the appropriate restore time. An improvement in data collection can improve our CAIDI metrics.

- Restore before Repair: Over the past few years, we have not focused on making partial repairs to restore a portion of customers during an outage. The CAIDI improvement team identified that a stronger focus on this process could have a positive impact. In the "restore before repair" process, the Distribution Control Centers isolate the fault, restore as many customers as possible through switching, and then patrol the rest of the circuit to finish repairs for the remaining customers. For example, if a feeder locks out affecting 2,500 customers, we can use fault indication and other technology to isolate the fault and then instruct the troubleman to open a switch on either side of the fault and close switches to re-energize customers outside of the open switches. In this example, we restored 2,000 of the 2,500 customers quickly, but without this process, we would leave all 2,500 customers without power until we physically locate and repair the specific faulted section. With a renewed concentrated focus on restoring before repair, we

> should be able to make a positive impact on CAIDI performance.
>
> - Staffing Levels: When our usual crews are at a scheduled appointment with a customer, they cannot always get to an outage immediately and still maintain our high level of customer service. A delay in reaching an outage results in lower CAIDI performance. As a result, we have started to use contractors for some appointments so that our workforce remains at a steady level to meet non-outage customer expectations, while current specialized crews are available to respond to outages in a more timely fashion. We expect this practice to support our efforts of reducing CAIDI metrics, especially in our work centers with a large service territory to cover.
>
> …
>
> While we are committed to improving CAIDI performance across our work centers, we note that our primary focus continues to be on maintaining consistent SAIDI levels, which in turn can result in a lack of improvement for our CAIDI metrics.

In its 2014 Annual Electric Service Quality Report (2014 Report), Xcel stated:[8]

> Our CAIDI improvement team, made up of employees from the Engineering, Construction, Control Center and Trouble operations groups, continues to examine causes and develop solutions to improve CAIDI performance in this and all work centers. The Team began meetings monthly in the first quarter of 2014 and developed a CAIDI reduction plan to address identified issues such as time recording, restoring power before fully repairing, and staffing levels. The Southeast work center was the only work center not to meet the CAIDI metric in 2014, so we believe that our improvement efforts are overall having a positive impact.

In its Reply Comments in the proceeding related to the 2014 Report, Xcel stated:[9]

[8] Docket No. E002/M-15-324, filed April 1, 2015, page 10.
[9] Docket No. E002/M-15-324, Xcel's Reply Comments filed July 13, 2015, pages 4-5.

> As noted in our Reply Comments in Docket No. E002/M-14-131 and in our report in the present docket, we began to implement a CAIDI reduction plan in early 2014. We appreciate the Department's understanding that this plan may take time to produce results given that the plan is designed to cascade into the future. Many of the specific improvements we can implement today may only maintain performance at this time, rather than demonstrate concrete improvement reflected in the reliability metric results. We continue to implement processes to improve time recording, time management and training, to use contractors effectively, and to "restore before repair," which we believe will at a minimum help maintain CAIDI performance results. In order to see more immediate, real-time CAIDI improvement, we need to introduce new technology. By 2017, we should begin installing updated control center technology, so-called "system intelligence," that we expect will produce more immediate CAIDI improvement results.

In its 2015 and 2016 reports, the Company stated the following regarding its CAIDI performance in Reply Comments:[10]

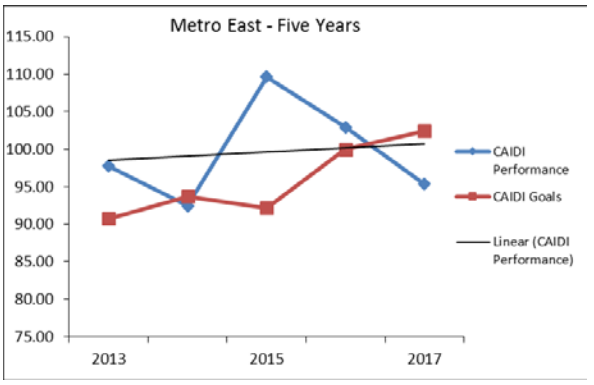
> In an effort to improve customer reliability, we have been steadily installing intelligent switches (Intelliteam devices, or something similar) on our Feeders. These devices reduce the number of outages, which is positive for customers – and both SAIDI and SAIFI – but they can cause our CAIDI performance to decline.
>
> CAIDI is a measure of the length of time the average customer can expect to be without power during an interruption. Intuitively, some might think declining CAIDI results means that the utility is doing a worse job of restoring power; however, it is more likely that a worsening CAIDI simply means that the utility is experiencing fewer short durations.
>
> Feeder level interruptions have always represented our shortest outages by a significant margin – and affect thousands of customers, so have a material effect on our metrics. CAIDI performance declines when the outages are more heavily concentrated on problems that take longer to correct. In our case,

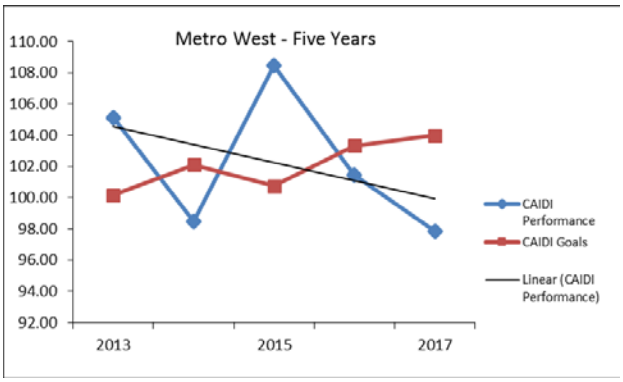
[10] Docket Nos. E002/M-16-281 and E002/M-17-249, Xcel's Reply Comments filed September 29, 2017, pp. 3-8.

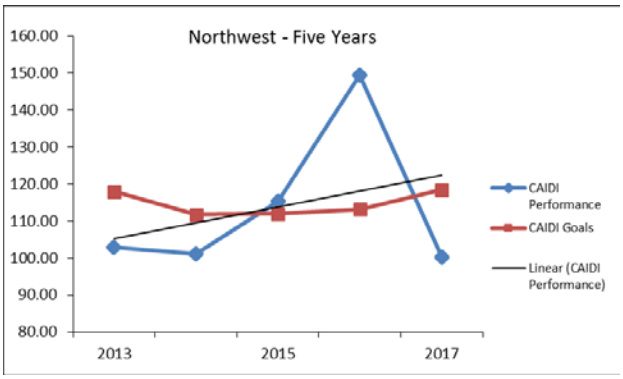
> the intelligent switches we are installing on feeders are reducing the number of short duration outages by isolating the fault and automatically healing a portion of the feeder – negating an outage for the majority of customers on the feeder. The resulting sustained outage thus affects a smaller number of customers – creating a negative effect on CAIDI, but a positive reliability experience for the greatest number of customers… While CAIDI continues to be an important metric internally as we examine it in context of our overall reliability performance, we continue to believe that CAIDI is a poor indicator of our customers' reliability experience. In acknowledging our CAIDI performance trend in Comments, the Department observed that CAIDI seems to add less value in pinpointing customer-level service issues than the system-wide picture SAIDI and SAIFI provide. We agree, and believe a better measure of the customer reliability experience is CEMI and CELID.

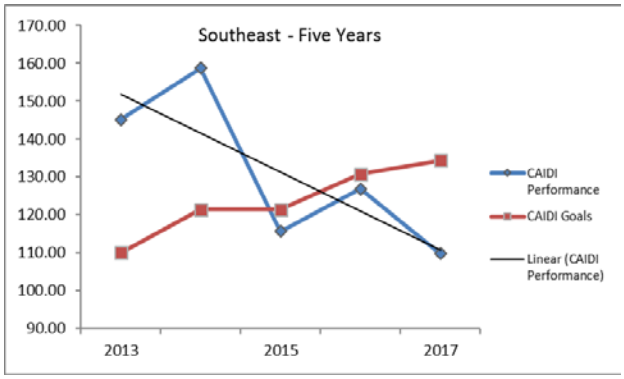
In its 2017 Report, Xcel did not provide any specific narrative addressing CAIDI, but the initiatives described by Xcel in previous dockets as quoted above were reflected in Attachment M of its Report.

The Department realizes that CAIDI can fluctuate in any given work center, due to extreme weather, accidents, and other events outside of the control of the Company. It can also be difficult to balance improvement in CAIDI with fluctuations in SAIDI and SAIFI performance. Since 2012, Xcel's CAIDI performance has remained mostly steady or improved in three of its four work centers.









These recent trends may indicate that the efforts instigated by Xcel's CAIDI improvement team since 2014 are improving the Company's CAIDI performance. The Department notes that SAIDI and SAIFI reflect Xcel's system reliability, while CAIDI is more customer-focused. Similar to CAIDI, CELI and CEMI are also customer-experience focused. Until CAIDI performance reflects solid stabilization or improvement, Xcel's reporting of CEMI and CELI provides some additional insight into customers' reliability experience. Therefore, the Department recommends that the Commission continue to require Xcel to report CELI and CEMI as discussed further below.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.E.

4. Bulk Power Supply Interruptions

Xcel reported that there were no generation outages on the Company's system that caused an interruption of service to firm electric customers in 2017. Xcel provided a table listing interruptions caused by transmission outages.[11] The table identifies the transmission line, date, time, duration, reasons for the interruption, comments, and remedial steps taken or planned.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.F.

5. Major Service Interruptions

Xcel reported that, in 2017, there were 154 outages on its system that met the definition of "major service interruption." As required, the Company provided copies of the notifications sent to the Commission's Consumer Affairs Office (CAO) for these outages.[12] Xcel stated that it continues to monitor and improve its internal processes regarding outage notification to the CAO. The following table compiles the number of outages not reported to the CAO and the total number of major service interruptions reported by Xcel in recent years.[13]

[11] Attachment C of the Report.
[12] Attachment D of the Report.
[13] In its 2005 and 2006 Annual Reports (reflecting 2004 and 2005 performance), Xcel stated that there were instances in which the CAO may have been notified of a major service interruption, however, the Company was unable to provide a copy of the notification.

Table 3: Unreported Major Service Interruptions

Year	Unreported Major Service Interruptions	Number of Major Service Interruptions	Percent Unreported
2004	137	235	58%
2005	55	448	12%
2006	51	196	26%
2007	23	373	6%
2008	41	288	14%
2009	6	164	4%
2010	15	351	4%
2011	4	214	2%
2012	5	252	2%
2013	2	605	<1%
2014	11	233	5%
2015	27	259	10%
2016	12	310	4%
2017	6	154	4%

The Company noted that five of the six unreported major service interruptions were for a single heavy storm event that occurred on June 11.

Xcel reported that there were no major service interruptions in which ten percent or more of its Minnesota customers were without service for 24 hours or more in 2017.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.G.

6. Worst Performing Circuit

Xcel defines poor performing feeders as those with a System Average Interruption Frequency Index (SAIFI) exceeding three times the average feeder SAIFI value for the Company's Minnesota system or a SAIDI exceeding four times the average feeder SAIDI value. For this purpose, SAIDI and SAIFI are based on non-storm-normalized data and do not include planned outages or outages caused by public damage. Poor performing circuits are identified in September (based on data from the previous September through August time period) so that Xcel can complete construction projects before the spring storm season.

Using this method, Xcel identified four to five poor performing feeders in each work center. Xcel also identified 25 feeders with the highest SAIDI (based on calendar year data, and

including bulk power supply and planned outages) in each of its four work centers in compliance with the Commission's April 7, 2006 Order in Docket No. E002/M-05-551.

The Department used historical data to identify potential areas of concerns regarding any 2017 feeders that are identified multiple times for similar reasons as a worst performing feeder. The Department identified four different feeders through its historical tracking, each of which has been listed in the past as a poorly performing feeder. Of the four feeders Xcel mentioned from the four work centers, Feeder C from the Metro East work center has been identified as a poor performer each year since 2014. Xcel stated the following regarding the feeder:[14]

> This is a long feeder that is located on a hilltop in a rural and rustic area surrounded by rough terrain and trees. In addition, the area is sparsely populated without a tie to another source available. A combination of storms, tree contact and splice failures in main line feeder and taps have contributed to the outage history on this feeder. A portion of the feeder where most of tree contact had occurred was upgraded in 2016 with bigger and stronger conductor along with relocating a portion of the line to the opposite site [*sic*] of the road. In 2018, a section of the mainline that has many splices in it is being replaced with new conductor. Also in 2018, the feeder will have a portion of it transferred onto a new feeder out of the Baytown substation. This will reduce exposure and customer count affected by outages. Finally, this feeder is scheduled for its 5-year tree trimming cycle in 2018. The location of this feeder creates challenges to improvement; however, we will continue to monitor it and determine if other actions can improve its reliability.

For the remaining feeders on the worst performing list, Xcel's 2017 Report indicated that remedial actions were taken to improve the feeders' performance.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.H and of the Commission's April 7, 2006 Order.

7. Compliance with ANSI Voltage Standards

Xcel reported that it conducted 284 voltage investigations in 2017.[15] After investigation, approximately 22 percent of these instances were found to be caused by a specific voltage

[14] 2017 Report, p. 14
[15] 2017 Report, p. 12

problem. In cases where the Company finds that the voltage is not within the acceptable range, actions are taken such as swapping transformers, upgrading transformers, or checking capacitor banks.[16]

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.I.

8. Work Center Staffing Levels

Xcel reported its 2017 staffing levels by work center. Table 4 contains the Company's staffing levels for the past ten years.

Table 4: Xcel's Historical Work Center Staffing Levels[17]

Year	Metro East	Metro West	Northwest	Southeast	Other	Total
2008	136	183	37	65	57	478
2009	133	173	37	61	61	465
2010	139	189	32	64	46	470
2011	138	190	33	63	46	470
2012	134	190	34	58	44	460
2013	136	195	34	54	51	470
2014	129	197	25	57	56	464
2015	132	201	35	55	54	477
2016	129	202	32	50	55	468
2017	121	195	34	49	56	455

The Department notes that staffing levels declined by 13 full-time equivalents (FTEs) overall in 2017. In its 2017 Report, Xcel stated the following:[18]

> In addition to the attrition numbers we experienced in 2016, we also had a significant number of retirements during 2017. While our current staffing numbers have not had an impact on our day-to-day operations or performance levels, we do have a number of open positions currently posted (10ME, 2MW, and 2SE), which are expected to close the gap and bring the staffing levels in line with our past average. At the time of this filing we have filled 6 staffing

[16] As shown in Xcel's table at 16, Xcel's acceptable voltage range is slightly more restrictive than ANSI Voltage Range B.
[17] 2017 Report, p. 16
[18] *Ibid*

> positions with another 6 currently going through the final interview/hiring process. We expect to fill the remaining open positions later in 2018.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.0500, subp. 1.J.

C. PROPOSED RELIABILITY STANDARDS FOR 2018

Xcel proposed the following reliability goals for 2018:

Table 5: Xcel's Proposed 2018 Reliability Goals

Region	Metric	Proposed 2018 Goals
Metro East	SAIDI	82.69
	SAIFI	0.83
	CAIDI	99.93
Metro West	SAIDI	85.17
	SAIFI	0.83
	CAIDI	102.46
Northwest	SAIDI	89.82
	SAIFI	0.79
	CAIDI	113.45
Southeast	SAIDI	102.39
	SAIFI	0.78
	CAIDI	131.46

Xcel stated that these goals were calculated using the same methodology used to set the Company's 2017 goals. That is, the SAIDI and SAIFI goals reflect the average of 5 years of actual performance, while the CAIDI goals reflect the mathematical relationship between the indices.

The Department recommends approval of Xcel's proposed 2018 reliability goals.

D. ANNUAL SERVICE QUALITY REPORT

Minnesota Rules, part 7826.1300 requires each utility to file the following information on or before April 1 of each year:

- Meter Reading Performance (7826.1400);
- Involuntary Disconnection (7826.1500);
- Service Extension Request Response Time (7826.1600);
- Call Center Response Time (7826.1700);
- Emergency Medical Accounts Status (7826.1800);
- Customer Deposits (7826.1900); and
- Customer Complaints (7826.2000).

1. Meter Reading Performance

The following information is required for reporting on meter reading performance by customer class:

A. the number and percentage of customer meters read by utility personnel;
B. the number and percentage of customer meters self-read by customer;
C. the number and percentage of customer meters that have not been read by utility personnel for period of 6 to 12 months and for periods of longer than 12 months, and an explanation as to why they have not been read; and
D. data on monthly meter reading staffing levels by work center or geographical area.

An annual average of 96.71 percent of customer meters were read by utility personnel and 0.0005 percent were read by the customer in 2017.[19]

Table 6 summarizes the number of meters not read by utility personnel for 6-12 months, according to Xcel's past annual and supplemental reports.

[19] The Department's calculations are based on data provided in Tables A and B, Attachment F, pp. 1-7 of the Company's errata filing on July 27, 2018. On page 3 of the Department's *Comments* filed on July 27, 2012 in Docket No. G002/M-12-440, Xcel's 2012 Gas Service Quality Report, the Department requested that Xcel provide, in all future reports, the total number of meters to be read each month. The Department notes that the Company files combined electric and gas service quality metrics when appropriate (*e.g.*, for its meter reading statistics).

Table 6: Meters Not Read for 6-12 Months[20]

Year	Residential	Commercial	Industrial	Other	Total
2009	3,021	2,330	467	288	6,106
2010	3,506	1,076	338	100	5,020
2011	2,346	967	244	183	3,740
2012	3,967	1,232	248	106	5,553
2013	2,600	822	177	79	3,678
2014	5,237	1,178	260	123	6,798
2015	2,508	942	387	113	3,950
2016	2,268	772	167	75	3,282
2017	1,938	1,118	306	50	3,412

Table 7 summarizes the number of meters not read by utility personnel for longer than 12 months, according to Xcel's past annual and supplemental reports.

Table 7: Meters Not Read for Longer than 12 Months[21]

Year	Residential	Commercial	Industrial	Other	Total
2007	2,970	1,409	415	302	5,096
2008	3,604	1,776	440	263	6,083
2009	3,170	974	291	248	4,683
2010	1,149	366	263	71	1,849
2011	637	403	181	94	1,315
2012	661	450	112	89	1,312
2013	602	335	131	64	1,132
2014	620	304	92	68	1,084
2015	764	310	134	90	1,298
2016	551	240	109	63	963
2017	531	260	135	48	974

The Department notes that, in general, Xcel has continued to reduce the total number of meters not read for longer than 12 months.

Minnesota Rules, part 7826.0900, subp. 1 requires that at least 90 percent of all meters be read during the months of April through November and at least 80 percent be read during the months of December through March. Xcel attained those requirements in all months of 2017.

[20] Table C-1, Attachment F, pp. 2-4 of 7 of the July 27, 2018 errata filing.
[21] Table C-2, Attachment F, pp. 5-7 of 7 of the July 27, 2018 errata filing.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.1400 and 7826.0900.

2. Involuntary Disconnections

The following information is required for reporting on involuntary disconnection of service by customer class and calendar month:

A. the number of customers who received disconnection notices;
B. the number of customers who sought cold weather rule (CWR) 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.

Table 8 summarizes residential customer disconnection statistics reported by Xcel in its annual Report.

Table 8: Residential Customer Involuntary Disconnection Information[22]

Year	Customers Receiving Disconnect Notice	Customers Seeking CWR Protection	Customers Granted CWR Protection	% Granted	Customers Disconnected Involuntarily	Customers Restored within 24 Hours	Customers Restored by Entering Payment Plan
2003	516,982	19,745	19,199	97%	27,004	6,303	1,350
2004	562,455	27,128	26,736	99%	28,172	5,912	1,240
2005	459,824	42,099	40,549	96%	18,846	3,596	309
2006	603,679	21,537	20,234	94%	22,684	10,498	479
2007	895,152	16,848	15,746	93%	27,427	9,578	827
2008	1,175,953	86,092	86,092	100%	28,863	11,449	727
2009	1,186,057	140,862	140,862	100%	29,612	11,214	1,253
2010	1,218,073	173,440	173,440	100%	29,592	12,121	1,265
2011	1,282,576	188,091	188,271	100%	27,120	11,273	1,446
2012	1,207,842	279,713	279,713	100%	27,132	11,010	1,047
2013	1,217,049	126,477	126,477	100%	23,493	9,221	882
2014	1,166,978	105,561	105,561	100%	25,532	10,283	1,250
2015	1,042,775	151,956	151,956	100%	26,756	11,556	1,201
2016	870,665	130,052	130,052	100%	20,574	7,698	1,512
2017	747,409	140,943	140,943	100%	19,212	6,564	1,251

Xcel also reported information on commercial involuntary disconnections. The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.1500.

3. Service Extension Requests

The following information is required for reporting on service extension request response times by customer class and 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.

[22] Attachment G of the Report.

Xcel stated that 305,792 customers requested service to a location previously served in 2017 and that such requests were responded to the next business day.[23] Xcel reported that 4,079 residential and 268 commercial customers requested service to a location not previously served by the Company in 2017.[24] The average interval between request/readiness date and installation date was 2.6 days for residential and 6.6 days for commercial customers.

The Department looks for any trends in overall response times and inquires as needed. At this time, response times for residential and commercial customers in 2017 were relatively consistent with data from 2009 - 2016.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.1600.

4. Call Center Response Time

The annual service quality report must include a detailed report on monthly call center response times, including calls to the business office and calls regarding service interruptions. Minnesota Rules, part 7826.1200 requires utilities to answer 80 percent of calls made to the business office during regular business hours and 80 percent of all outage calls within 20 seconds.

Xcel provided monthly call volume and response time information. In 2017, an average of 89.38 percent of calls to the Company were answered within 20 seconds.[25]

The Company assumes that all calls handled by its Interactive Voice Response (IVR) system are answered within 20 seconds. For calls handled by Xcel's Agents, an average of 76.44 percent were answered within 20 seconds in 2017.

Additionally, in compliance with the Commission's November 2, 2017 Order in Docket No. E002/M-17-553,[26] the Company provided the following update regarding its changes to the non-emergency call center hours:

> On January 1, 2018, we changed our hours of operation for non-emergency calls to Monday through Friday from 7:00 a.m. to 7:00 p.m. and Saturdays from 9:00 a.m. to 5:00 p.m. Call Center

[23] 2017 Report, p. 19
[24] Attachment H of the 2017 Report.
[25] Department's calculations are based on data provided in Attachment I, pp. 1-2 of the Report.
[26] *In the Matter of the Petition of Northern States Power Company for Approval of Tariff Modifications and a Variance from Commission Rules to Implement Customer-Driven Operational Changes and Other Tariff Changes*.

> Representatives continue to be available to interact with customers calling regarding electric and natural gas outage and emergency calls 24/7. We have not encountered any technical or other issues.
>
> Overall call volumes are very similar to one year ago, but we have seen a five percent increase in IVR utilization that we believe is reasonable to attribute to the change in our general business hours. Total Minnesota call volume during the January 1 through March 15, 2018 period was approximately 335 per weekday and 630 per weekend. Of these callers, 22 percent returned to the main menu; 63 percent hung up; 15 percent completed, and selected to end the call Of the weekday callers that did not utilize the IVR, approximately 19 percent called the Company back the same business day; 27 percent called back the next business day. Approximately 29 percent of weekend callers called back the next business day. The remaining customers are choosing to self-serve through other channels, including utilization of our IVR system – thus the noted increase.

The Department acknowledges that Xcel has fulfilled the requirements of Minnesota Rules, part 7826.1700 and, in 2017, complied with the standard set in Minnesota Rules, part 7826.1200, as wells as ordering paragraph 1 in the Commission's November 2, 2017 Order in Docket No. E002/M-17-553.

5. Emergency Medical Accounts[27]

Reporting on emergency medical accounts must include the number of customers who requested medical account status under Minnesota Statutes, section 216B.098, subd. 5, the number of applications granted, the number of applications denied, and the reasons for each denial.

Xcel reported that 3,150 Minnesota customers requested Emergency Medical Account Status in 2017.[28] Approximately 75.8 percent of these customers were granted this status.

Table 9 below shows the historical numbers regarding Medical Accounts.

[27] Included in this section is the necessary information to adhere to the Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249.
[28] Attachment G of the Report.

Table 9: Residential Customers Requesting Emergency Medical Account Status

Year	Requested Medical Acct. Status	Granted Medical Acct. Status	Percent Granted
2008	1,847	1,460	79.0%
2009	1,783	1,292	72.5%
2010	1,762	1,162	65.9%
2011	1,572	716	45.5%
2012	1,508	679	45.0%
2013	1,562	832	53.3%
2014	1,780	1,012	56.9%
2015	3,333	2,557	76.7%
2016	3,427	2,713	79.2%
2017	3,150	2,388	75.8%

The Department notes that in Reply Comments filed on September 9, 2017, in Docket No. E002/M-17-249 (Xcel's last service quality report), the Company, stated that it expects the higher numbers to be the new normal as the customer base continues to age.

The Department acknowledges that Xcel has fulfilled the requirements of Minnesota Rules, part 7826.1800.

6. Customer Deposits

Reporting on customer deposits must include the number of customers who were required to make a deposit as a condition of receiving service.

Table 10 summarizes the number of accounts that Xcel has reported required deposits. The Department notes that the Company requests these deposits from residential customers that have filed for bankruptcy.

Table 10: Customer Deposits Required

Year	Number of Deposits
2003	884
2004	704
2005	1,181
2006	587
2007	821
2008	805
2009	798
2010	657
2011	655
2012	622
2013	652
2014	606
2015	561
2016	362
2017	314

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.1900.

7. Customer Complaints

Reporting on customer complaints must include the following information by customer class and calendar month:

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;
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; and

E. the number of complaints forwarded to the utility by the Commission's Consumer Affairs Office (CAO) for further investigation and action.

Xcel reported that 572 complaints were handled by the Company's Customer Advocate Group in 2017, 113 of which were forwarded by the CAO.[29] Data provided by the Company showed that 18 percent of complaints in 2017 handled by Xcel's Customer Advocate Group were resolved upon inquiry.[30] The most frequent complaint category was "inadequate service." Xcel reported that 27.10 percent of these complaints in 2017 were resolved by taking the action the customer requested.[31]

Xcel also received 665,739 complaints in 2017 that were handled upon initial inquiry in the Company's Call Centers. Xcel reported that approximately 96 percent of these complaints were resolved by taking the action the customer requested. The complaint category with the largest volume for all customers was "billing errors."

Xcel's report on customer complaints includes the required information. Table 11 contains a limited summary of Xcel's customer complaint history as received through the Company's Customer Advocate Group.

Table 11: Selected Summary of Customer Complaints[32]

Year	Number of Complaints	Inadequate Service	Wrongful Disconnect	Billing Error	Resolved Upon Initial Inquiry	Took Action Customer Requested
2010	693	44.90%	21.90%	18.20%	17.00%	29.10%
2011	627	49.10%	17.20%	16.70%	13.20%	28.20%
2012	613	53.50%	19.70%	17.30%	18.60%	27.41%
2013	745	55.80%	15.60%	13.80%	18.90%	38.26%
2014	770	53.20%	19.70%	14.80%	16.80%	51.30%
2015	789	52.50%	23.40%	13.30%	14.30%	29.50%
2016	547	52.10%	19.00%	14.60%	16.30%	32.70%
2017	572	53.50%	24.50%	10.50%	18.00%	27.10%

[29] Attachment J of the Report, pp. 1-4.
[30] *Id*
[31] *Id*
[32] Attachment J of the Report, p. 2.

The Department acknowledges Xcel's fulfillment of the requirements of Minnesota Rules, part 7826.2000.

E. COMPLIANCE WITH FEBRUARY 9, 2018 ORDER

In its February 9, 2018 Order, the Commission required Xcel to provide the following in its next annual service quality filing:[33]

A. The Company's data on benchmarking with national IEEE Reliability Standards;

B. A qualitative discussion of ways the Commission looks at increased granularity;

C. An assessment of MAIFI [Momentary Average Interruption Frequency Index] data;

D. A summary of the Company's estimated response time to customers and steps the Company is taking to measure and communicate more accurately the Company's estimated response time to customers;

E. The Company's internal customer satisfaction goals and a comparison of the Company's actual performance to those goals, as well as an explanation of the basis for those customer satisfaction goals;

F. With respect to the distribution feeder table identification provided in the report, Xcel shall include the appropriate locational labels, applicable substation name, and region to which the information relates;

G. The Company's additional thinking on CEMI and CELI metrics after consultation with the DOC and other interested parties; and

[33] Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249.

H. Data on the number of applicants and participants in the Company's emergency medical accounts.

In accordance with ordering paragraph 3A regarding the Company's data on benchmarking with the national IEEE Reliability Standards, the Company provided these data, by operating company, in Attachment Q of its Report. In terms of SAIDI, Northern States Power – Minnesota (NSPM) performed within the second quartile in 2012, 2013, and 2016, and at or within the first quartile in 2014 and 2015. In terms of SAIFI, NSP-M performed within the second quartile in 2012-2014, and at or within the first quartile in 2015-2016.

In accordance with ordering paragraph 3B, the Company included in its Report additional information regarding its worst performing feeders, namely a column in Attachment E that includes the city where the feeder's substation is located. Additionally, the Company provided color-coded maps that plot feeder SAIDI. These maps are included as Attachments S-1 and S-2 to the Report.

Xcel stated the following regarding its attempt to provide a view of reliability by customer class:[34]

> Presently, we do not track customer class data by feeder. We did attempt to segregate feeders that were predominantly residential compared to feeders that were predominantly commercial. We did find that feeders primarily serving commercial customers in general had a SAIDI value that was significantly better than the feeders serving primarily residential customers. Although not studied, this is likely due to several items including: less vegetation in industrial and commercial areas, shorter feeders due to higher load density resulting in less exposure to the environment, higher percentage of customers with underground service.

In accordance with ordering paragraph 3C, the Company provided its MAIFI data in Attachment N1 to its Report. Xcel clarified that its MAIFI data reflect approximately 92 percent of its retail customers (those connected to feeders with Supervisory Control and Data Acquisition (SCADA) capability). Xcel's reported MAIFI for 2017 ranged from a high of 1.37 for the Northwest work center based on non-normalized data, to a low of 0.37 for the Southeast work center based on normalized data as calculated consistent with the Company's service quality tariff.

[34] 2017 Report, p. 29

In accordance with ordering paragraph 3D, the Company provided a discussion of estimated restoration times (ERTs) and the Company's efforts in measuring these, along with communication it has provided to its customers. In terms of measuring ERTs, the Company provided the following:

> The current draft metric measures actual restoration times which occurred within 90 minutes prior to the published ERT up to 0 minutes after the published ERT. On a monthly basis, the Company pulls year-to-date data from its Network Management System (NMS) that itemizes each outage along with associated outage data such as: (i) time of outage; (ii) number of customers impacted, interrupting device; (iii) level of outage; (iv) estimated restoration time (ERT) pre-determined by the Company; and (v) actual restoration time. The information is used to analyze the accuracy of our estimated restoration times when compared to the actual restoration time…
>
> …As we have previously indicated, the ERT accuracy measurement is a work in progress and we have made some refinements for 2018. Our 2014 to 2017 performance includes the "initial" ERTs which is the standard 3 hour estimate used when an outage is reported until we have better information. For 2018, we have removed the initial ERTs from the calc. The metric will include ERTs generated by our model (which is based on the impacted device(s) and algorithms) and ERTs entered by field and control center personnel. The model usually provides an estimate within 15 minutes after notification of an outage. The 0 to 90 minute window of accuracy will still be used.

Table 12 below shows the Company's performance related to its ERTs over the past four years.

Table 12: ERT Accuracy

Entity	Accuracy Criteria	2014	2015	2016	2017
NSPM	Within -90 to +0	34.7%	36.7%	39.7%	38.9%
MN Only	Within -90 to +0	35.6%	36.2%	39.2%	38.6%

Additionally, the Company provided a discussion of its communication efforts with customers regarding ERTs. The Company has received feedback from customers and found that the two most important pieces of information customers want to know during an outage is "when will my lights be back on?" and "what was the cause of the outage?" The Company is presently working on its ERT2.0 training for employees which intends to improve ERT accuracy. The Company stated that the training is intended to educate field employees on a new process and how their mobile data terminals trigger notifications to customers.

In accordance with ordering paragraph 3E, the Company provided a discussion of its customer service transaction satisfaction data in Attachment R of its Report. The Company sets annual goals for itself that include gauging customer transaction satisfaction related to customer service representatives, the Company's IVR system, and its website. The Company's data in Attachment R, which have been marked as Non-Public, indicate that it has achieved its goal in three of five categories. Additionally, the Company stated that it has subscribed to J.D. Power to access utility benchmarking results to help various internal work groups identify and focus on improvements. Beginning in 2018, Xcel will use the J.D. Power residential study to set and measure metrics for (1) overall residential satisfaction; (2) satisfaction with total monthly cost of electric bill; (3) keeping customers informed about an outage; and (4) percentage of customers recalling Company communications over past three months.

The Department notes that Xcel complied with ordering paragraph 3F, by providing the name of the substation and the city in which it is located in Attachment E to its Report, which is arranged by work center.

In accordance with ordering paragraph 3G, the Company provided a discussion of potential CEMI and CELI metrics. The Company stated that the IEEE Distribution Reliability Working Group does not benchmark CEMI or CELI and that Edison Electric Institute benchmark information is proprietary and, thus, cannot be shared. However, the Company did provide its CEMI and CELI performance for 2013 to 2017 in Attachment P of its Report.

The CEMI figures reported reflect three outage levels - customers experiencing 4, 5, and 6 or more events. Internally, Xcel tracks customers experiencing four or more outages on a 12-month rolling average.

The CELI figures the Company reported show the percentage of Minnesota customers experiencing an outage of 12 hours or more. The Company noted that CELI measuring for 24-hour outages is used for the purposes of its service quality tariff. In 2017, approximately 0.40 percent of Xcel's Minnesota customers experienced an outage of 12 hours or more.

The Company provided the necessary information related to ordering paragraph 3H regarding Xcel's Medical Affordability Program. The Company stated that the new bill payment assistance program, which is exclusively for Minnesota electric customers with certified chronic or severe medical conditions and an income level up to 50 percent of the state median income guidelines (SMI), has seen 512 new applications since implementation on January 15, 2018. Furthermore, the Company stated that if funds remain, Xcel will enroll additional customers up to 60 percent SMI. The total number of customers on the Medical Affordability Program was 900, as of March 15, 2018.

In summary the Department appreciates the additional data provided by Xcel pursuant to the February 9, 2018 Order. When taken with the information already contained in the Company's Report, the additional data help to paint a more descriptive picture of the Company's service quality performance. As noted above, the Department concludes that the CEMI and CELI metrics are useful for helping to interpret overall performance related to outages as they provide additional context to SAIDI, SAIFI, and particularly to CAIDI. Further, the maps provided by Xcel regarding outages by feeder location provide an additional layer of understanding. The Emergency Response Time data provided by Xcel were also useful in that they help the Department to understand what steps the Company takes when an outage occurs and how the Company is working to improve their estimated restoration times that are communicated to customers. The Department recommends that the Commission require the Company to continue to provide refreshed information responsive to Ordering Paragraphs 3A – 3H from the Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249.

III. CONCLUSIONS AND RECOMMENDATIONS

The Department recommends that the Commission accept Xcel's filing in fulfillment of the requirements of Minnesota Rules, Chapter 7826, and the Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249 and recommends approval of Xcel's proposed reliability goals for 2018.

Additionally, the Department recommends that the Commission require Xcel to provide refreshed information responsive to Ordering Paragraphs 3A – 3H from the Commission's February 9, 2018 Order in Docket Nos. E002/M-16-281 and E002/M-17-249, as restated below:

1. The Company's data on benchmarking with national IEEE Reliability Standards;

2. An assessment of MAIFI data;

3. A summary of the Company's estimated response time to customers and steps the Company is taking to measure and communicate more accurately the Company's estimated response time to customers;

4. The Company's internal customer satisfaction goals and a comparison of the Company's actual performance to those goals, as well as an explanation of the basis for those customer satisfaction goals;

5. With respect to the distribution feeder table identification provided in the report, Xcel shall include the appropriate locational labels, applicable substation name, and region to which the information relates, and include color-coded maps that plot feeder SAIDI;

6. The Company's CEMI for customers experiencing 4, 5, and 6 or more events;

7. The Company's CELI for 12-hour outages; and

8. Data on the number of applicants and participants in the Company's Medical Affordability Program.

/ja

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

Minnesota Department of Commerce
Comments

Docket No. E002/M-18-239

Dated this 29th day of August 2018

/s/Sharon Ferguson

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