Public Service Commission
State of North Dakota

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

1 November 2021

Jill Grossman
Code Revisor
North Dakota Legislative Council
State Capitol
Bismarck, ND 58505-0360

Via hand delivery only

Re: Proposed Amendments to Administrative Rules
PSC Case Numbers PU-21-360

Dear Ms. Grossman:

Enclosed please find proposed amendments to the North Dakota Administrative Code by the North Dakota Public Service Commission. The proposed amendment to Article 69-06, Energy Conversion Facility Siting Criteria. In support of this filing, enclosed please find copies of:

1. The final revised Rules for the Administrative Rules Committee;
2. Copies of staff testimony and all other written comments;
3. The Commission's 21 October 2021 *Order Submitting Rules to Attorney General*, which includes a summary of all comments, including oral comments;
4. The 28 October 2021 letter from the Attorney General approving the proposed Rules as to their legality;
5. Statements on Regulatory Analysis, Small Entity Analysis, Small Entity Economic Impact Statement, and Takings Assessment;
6. A Fiscal Note; and
7. The 1 November 2021 Commission Motion to adopt proposed Rules and forward to Legislative Council.

The agency is now submitting the rules for publication in the North Dakota Administrative Code. Thank you for your attention to this matter. If you have any questions, please call 328-2421, or e-mail to jschuh@nd.gov.

Best regards,

Brian Johnson
Special Assistant Attorney General

attachments

Legislative Council Received
(date) NOV 01 2021

28 PU-21-360 Filed 11/01/2021 Pages: 52
Letter to Legislative Council enclosing proposed Rules as amended and attachments
Public Service Commission
Brian Johnson, Legal Counsel

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service - Electric
Rulemaking

Case No. PU-21-360

69-09-02-06. Continuity of Service.

1. An electric public utility is responsible for ensuring reliable service.

~~1.~~2. Each utility shall make every reasonable effort to prevent interruptions of service, and when such interruptions occur shall endeavor to reestablish service within the shortest possible time. Whenever the service is necessarily interrupted or curtailed for the purpose of working on equipment, it shall be done at a time which, if at all practicable, will cause the least inconvenience to customers, except in cases of emergency.

~~2.~~3. Each utility shall keep a record of all interruptions to service affecting the entire distribution system of any single community or an important division of a community, and include in the record the date and time of interruption, the date and time service was restored, and, if known, the cause of each interruption. Service interruption records shall be kept for a period of six years

4. If an electric public utility fails to meet its obligation to provide reliable service to customers, the commission may require action, assess disallowances or fines, or provide a penalty. A penalty, disallowance or fine, or action shall take into consideration the nature, circumstances, and gravity of the violation, degree of culpability, history of prior service interruptions, and good faith attempts to ensure reliability.

5. By May 1 each year, each electric public utility shall file with the Commission the records required by this section. The commission may at any time, upon notice to the electric public utility, require a filing of the records required by this section for a specified time period or specific interruption.

6. Each electric public utility shall include in its annual May 1 filing, reliability statistics for the previous calendar year including Institute of Electrical and Electronics Engineers Standard 1366 indices system average interruption frequency index (SAIFI), system average interruption duration index (SAIDI), Customer average interruption duration index (CAIDI), Each utility shall include with this filing the datapoints used to calculate each of the above indices and a detailed breakdown of

each major event day (MED). These statistics will be compiled by each electric public utility for its North Dakota distribution system.

General Authority: NDCC 49-02-11
Law Implemented: NDCC 49-02-11, 49-05-19

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service – Electric
Rulemaking

Case No. PU-21-360

PUBLIC SERVICE COMMISSION STAFF TESTIMONY

September 22, 2021

My name is Victor Schock. I am a Public Utility Analyst with the Public Utilities Division of the Public Service Commission.

The purpose of this testimony is to describe the proposed administrative rule changes to North Dakota Administrative Code article 69-09 pertaining to the standards for electric service and the requirement for reliable service. The proposed rule changes implement North Dakota Century Code chapter 49-05-19.

The proposed change to 69-09-02-06 Continuity of service establishes rules necessitated by the 2021 Legislated reliable service obligation under North Dakota Century Code chapter 49-05-19. The proposed rule adopts reliability measurements established by the Institute of Electrical and Electronics Engineers, Inc. as a way to assess reliable service.

This concludes my testimony.

Thank you.

215 South Cascade Street
PO Box 496
Fergus Falls, Minnesota 56538-0496
218 739-8200
www.otpco.com (web site)

October 4, 2021

Mr. Steve Kahl
Director of Administration/Executive Secretary
North Dakota Public Service Commission
State Capitol
600 East Boulevard, Dept. 408
Bismarck, ND 58505-0408

RE: In the Matter of the Public Service Commission Standards of Service – Electric Rulemaking
Case No. PU-21-360
Comments

Dear Mr. Kahl:

Enclosed please find an original and seven copies of Otter Tail Power Company's Comments in the above referenced rulemaking matter.

Please contact me at (218) 739-8657, or molsen@otpco.com should you have any questions regarding this filing.

Very truly yours,

/s/ MATTHEW J. OLSEN
Matthew J. Olsen
Manager Regulatory Proceedings and Compliance

kaw
Enclosures
By Email and USPS mail

STATE OF NORTH DAKOTA
BEFORE THE PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service – Electric
Rulemaking

Case No. PU-21-360

COMMENTS OF OTTER TAIL POWER COMPANY

I. BACKGROUND

On August 18, 2021, the North Dakota Public Service Commission (Commission) issued a Motion and a Notice of Intent to Adopt Administrative Rules and Notice of Public Hearing. The proposed adoption and revisions are to North Dakota Administrative Code Section 69-09-02-06.

The purpose of the proposed new section 69-09-02-06 is to establish rules and guidelines as directed by the Legislature for assessment of penalties, fines, or disallowances if an electric public utility fails to meet its obligation to provide reliable service to customers within the state. The Commission's proposed rules also clarify information required and the manner in which electric public utilities shall report records and statistics relating to reliable service to its customers.

A Public hearing was held on September 22, 2021. Otter Tail Power Company (Otter Tail or Company) participated in that hearing along with other utilities and stakeholders. Below are additional comments regarding the proposed rules.

II. COMMENTS

Otter Tail tracks and analyzes reliability on an on-going basis. The Company uses particular metrics that provide useful ways to assess the impacts on customers of reliability performance. This tracking allows the Company to focus or deploy maintenance and construction projects to improve reliability in the most effective manner.

The integrity of Otter Tail's entire transmission and distribution system is directly related to interruption frequency; thus, the accountability lies within our Asset Management area. Otter Tail's Asset Management area is accountable for the planning, engineering and design, execution, operation and on-going maintenance and reliability oversight to ensure that we provide reliable and affordable electric service to our customers. At Otter Tail, we employ a system of Key Performance Indicators (KPIs), for the purpose of providing additional focus on achievement in particular areas of our operations. Two of Asset Management's KPIs are reliability indices dealing with interruption frequency: the Momentary Average Interruption Frequency Index (MAIFI) and System Average Interruption Frequency Index (SAIFI).

Otter Tail's Customer Service area is accountable for responding to all interruptions. Thus, Otter Tail's Customer Service area is accountable for the cost effective and efficient deployment of field personnel, trucks, and equipment as quickly and safely as possible, necessary for restoring service to customers when interruptions occur. One of the Customer Service area's KPIs is Customer Average Interruption Duration Index (CAIDI). Additionally, the Reliability indices, SAIDI, SAIFI, CAIDI, and MAIFI are companywide KPI's. These indices are communicated and reviewed with all impacted employees, on a monthly basis, with the expectation that all employees remain cognizant of our company's reliability performance.

The Asset Management and Customer Service areas have a common goal, which is to improve the overall system reliability. Each area recognizes the overall system improvement cannot be accomplished without collaboratively working with the other area. Each area also recognizes system reliability improvements are based on cost effective decisions and overall system improvements over longer periods of time.

A. Metrics Currently Captured and Reporting Capabilities

Otter Tail currently tracks reliability using a specialized interruption monitoring system (IMS). The system utilizes meters placed on distribution feeders throughout the Company's system. The system has several reporting options available, though not all the metrics included in the proposed rules are included. Currently, OTP's system can report on the following metrics:

- system average interruption frequency index (SAIFI)
- system average interruption duration index (SAIDI)
- customer average interruption duration index (CAIDI)

- customer total average interruption duration index (CTAIDI)
- customer average interruption frequency index (CAIFI)
- momentary average interruption frequency index (MAIFI)
- average service availability index (ASAI)
- customers experiencing multiple interruptions (CEMI-5, which would report percentage of customers experiencing 5 or more sustained interruptions)
- customers experiencing long interruption durations (CELID-s60, which would report the percentage of customers experiencing interruption >60 minutes)
- customers experiencing multiple sustained and momentary interruptions (CEMSMI-5, reports customers experiencing 5 or more sustained or momentary interruptions)
- Otter Tail also assess Major Event Days to exclude such events from reliability metrics utilizing the IEEE 2.5 Beta Methodology.

Otter Tail currently reports some of these metrics in other jurisdictions and could provide them in a filing to the Commission as desired. Importantly, these metrics can be programed to be reported at the feeder, Customer Service Center, or state levels. Otter Tail's rural distribution system will have instances where multiple smaller towns may be served by a single feeder.

The Commission's proposal sought additional metrics that are beyond the Company's current reporting abilities as described below.

- customers experiencing multiple interruptions CEMI at levels other than 5 would have to be calculated manually.
- customers experiencing multiple sustained interruption and momentary interruption events (CEMSMI) at levels other than 5 would have to be calculated manually.
- average system interruption frequency index (ASIFI), **is not possible** based our company's available data collection systems.
- average system interruption duration index (ASIDI), **is not possible** based our company's available data collection systems.

For the above possible items that would require additional labor for manual calculations, the Company estimates 20 hours by an engineer for each additional metric.

B. Will Advanced Metering Infrastructure improve reporting capabilities?

The Commission approved an Advance Determination of Prudent for Otter Tail to deploy Advanced Metering Infrastructure (AMI) for our system. The AMI system will bring many great benefits to our system and ability to capture data. Once fully deployed (end of 2024), AMI will provide greater granularity to improve the speed and accuracy of a future Outage Management System as described below.

Otter Tail is currently working to select a vendor to provide an Outage Management System. The OMS provides both operational and customer engagement benefits. The main benefits are more quickly and safely restoring power to customers when there are interruptions as well as being able to communicate information about restoration efforts to customers. As it relates to this filing, the OMS will also replace the current IMS Otter Tail uses to calculate reliability metrics. The OMS will provide greater granularity in reliability reports vs the current feeder level report we are able to complete today with our IMS. The tracking and reporting with an OMS will be at the customer or location level. Pre-AMI, this information will come in the form of customer calls or texts during outages and post-AMI, the outage location information will be fed from the AMI system into OMS based on meter "power-off" notifications in addition to any calls and texts that come from customers. In addition to more granular reporting, the OMS will allow us to report on the same metrics we can report on today. However, it may not provide the additional metrics listed in the Commission's proposed rule which Otter Tail is unable to provide today. That won't be known until early 2022 as we finalize our OMS vendor.

C. Timing of an annual filing

After the close of a year, much of the first quarter of the following year is spent gathering and sorting data that is used for to compile these metrics. Otter Tail currently files a report to the Minnesota Public Utilities Commission on April 1 that includes several of the reliability metrics as described above. If additional manual calculations are required, the Company would request additional time beyond April 1 to prepare those calculations. For the metrics available through our software system as currently designed, we can achieve an April 1 filing. There may also, however, be efficiency in including these metrics with the Company's annual reports filed on or around May 1 of each year.

III. CONCLUSION

Otter Tail appreciates the opportunity to provide these comments for the Commission's consideration.

Dated: October 4, 2021.

Respectfully submitted,

OTTER TAIL POWER COMPANY

By: */s/ MATTHEW J. OLSEN*

Matthew J. Olsen
Manager, Regulatory Proceedings and Compliance
Otter Tail Power Company
215 South Cascade Street
Fergus Falls, MN 56538-0496

MONTANA-DAKOTA
UTILITIES CO.
A Subsidiary of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
701-222-7900

October 4, 2021

Executive Secretary
North Dakota Public Service Commission
State Capitol Building
Bismarck, ND 58505-0480

Re: Standards of Service – Electric Regulation
Case No. PU-21-360

Montana-Dakota Utilities Co. (Montana-Dakota) herewith electronically submits Comments in response to the North Dakota Public Service Commission's (Commission) Notice of Intent to Adopt Administrative Rules regarding the proposed Amended Section 69-09-02-06 – Standards of Service – Electric. Montana-Dakota will address Subsection 4, 5 and 6 in these Comments.

Subsection 4 states "If an electric public utility fails to meet its obligation to provide reliable service to customers, the commission may require action, assess disallowances or fines, or provide a penalty. A penalty, disallowance or fine, or action will take into consideration the nature, circumstances, and gravity of the violation, degree of culpability, history of prior service interruptions, and good faith attempts to ensure reliability."

Regarding proposed Subsection 4, Montana-Dakota recommends the following: (1) the Commission further define the amount of the penalty and the parameters or circumstances of when a penalty may be assessed; (2) the Commission should establish a reliability record on which to base any penalties prior to the first assessment of such penalties; and (3) the Commission should establish timelines for the implementation of any changes under Section 69-09-02-06.

Subsection 5 states "By April 1 each year, each electric public utility shall file with the Commission the records required by this section. The commission may at any time, upon notice to the electric public utility, require a filing of the records required by this section for a specified time period or specific interruption."

Montana-Dakota recommends that the Commission include any required reporting in its Electric Annual Report that is filed by May 1 each year in lieu of the April 1 date included in proposed Subsection 5. This would eliminate an additional report

and the Electric Annual Report already includes the system average interruption frequency index (SAIFI) and system average interruption duration index (SAIDI).

Subsection 6 states "Each electric public utility shall include in its annual April 1 filing, reliability statistics for the previous calendar year including Institute of Electric and Electronics Engineers Standard 1366 [IEEE] indices system average interruption frequency index (SAIFI), system average interruption duration index (SAIDI), Customer average interruption duration index (CAIDI), customer total average interruption duration index (CTAIDI), customer average interruption frequency index (CAIFI), average service availability index (ASAI), customers experiencing multiple interruptions (CEMI), average system interruption frequency index (ASIFI), average system interruption duration index (ASIDI), momentary average interruption frequency index (MAIFI), and customers experiencing multiple sustained interruption and momentary interruption events (CEMSMI). Each utility shall include with this filing the datapoints used to calculate each of the above indices, a detailed breakdown of each major event day (MED) and each of the indices listed above (SAIFI, SAIDI, CAIDI, CTAIDI, CAIFI, ASAI, ASIDI, MAIFI, and CEMSMI with and without MED). These statistics will be compiled by each electric public utility for its North Dakota distribution system for each single community, and for each important division of a community."

As previously noted, Montana-Dakota currently reports its North Dakota SAIFI and SAIDI in the Company's Electric Annual Report. CAIDI is also available to be reported. The Company's current process is a paper-based system with data collected in the field or district locations and provided to the Bismarck General Office for manual compilation on an annual basis. In the event additional indices are required, Montana-Dakota would likely need to supplement or replace this process with a computerized system.

Montana-Dakota is currently analyzing the implementation of an Outage Management System (OMS) for its Electric Distribution System (EDS). Over the last several years the Company has taken steps that will allow the implementation of an OMS and has established an estimate of the costs of implementation. The Company's estimate for the necessary system hardware and software is $4.0 million dollars, an annual software maintenance fee of approximately $100,000 and the implementation is expected to require an additional 10 full-time employees with an estimated cost of $1.5 million annually. These estimates represent the costs on a Company-wide basis of which North Dakota comprises approximately 70%. The OMS deployment would include an Electric Distribution Dispatcher deployment and would provide other benefits to the Company, including additional worker safety, quicker emergency outage response, improved outage information to customers, a real time outage statistic database, and better operational outage cause information. The OMS would also allow the reporting of the indices that Montana-Dakota does not currently report. If the Company does move forward with the

OMS, it is anticipated that the implementation would take until mid-2023, which means the first full year of reporting would be for calendar year 2024.

With regard to reporting for each single community, Montana-Dakota would note that it serves 117 communities in North Dakota so the volume of information reported would be significantly more than currently reported. Significant additional cost and effort would be required to determine an individual community-based IEEE defined, Major Event Day (MED) manually, and manually produce additional indices for each individual community. This process would likely necessitate hiring additional full-time employees. Montana-Dakota currently reports SAIFI, SAIDI, and CAIDI in both Montana and South Dakota annually on a statewide basis, consistent with that currently reported in North Dakota's Electric Annual Report. The Company believes that continuing to report SAIFI and SAIDI, and also reporting CAIDI would achieve the Commission's reliability reporting objective. MAIFI is another index that Montana-Dakota may be able to manually calculate with modest effort and cost. The Company does not currently gather the data across its system so a process would have to be implemented.

As noted earlier, the Company has taken steps that will allow the implementation of an OMS so there are no metering requirements necessary.

Finally, it should be noted that during the September 22, 2021 public hearing, Commission Staff indicated that Montana-Dakota already reports additional indices (including CTAIDI, CAIFI, ASAI, ASIDI, MAIFI, and CEMSMI with and without MED) in an U.S. Energy Information Administration (EIA) report; however, further discussion with Commission Staff indicated that Montana-Dakota does not report those indices in the EIA report.

Montana-Dakota appreciates the opportunity to participate in the September 22, 2021 public hearing and to provide these comments.

Please contact me at (701) 222-7855 if you have questions.

Sincerely,

/s/ Travis Jacobson

Travis R. Jacobson
Director of Regulatory Affairs

Attachment

cc: Allison Mann
Daryl Anderson
Rebecca Naslund

2302 Great Northern Drive
P O Box 2747
Fargo, ND 58108-2747
(701) 241-8632
dave.sederquist@xcelenergy.com

October 4, 2021

--Via Electronic Filing and UPS--

Steven M. Kahl, Executive Secretary
North Dakota Public Service Commission
State Capitol Building, Dept. 408
600 East Boulevard
Bismarck, ND 58505-0480

RE: ELECTRIC STANDARDS OF SERVICE RULEMAKING (RELIABILITY)
CASE NO. PU-21-360

Dear Mr. Kahl:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed original and three copies of the Company's comments regarding the Commission's rulemaking relative to *Section 69-09-02-06 Continuity of Service* of the Commission's administrative rules.

An electronic copy of this filing is also being sent to you for your convenience.

The Company appreciates the opportunity to provide input into this process. Please contact me if you have any questions about the enclosed information.

Sincerely,

David H Sederquist

DAVID H. SEDERQUIST
SR. CONSULTANT, REGULATION/FINANCE

c: Victor Schock

Enclosures

16 PU-21-360 Filed 10/04/2021 Pages: 24
Comments on proposed Rules
Northern States Power Company
David Sederquist

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

Julie Fedorchak	Chair
Randy Christmann	Commissioner
Brian Kroshus	Commissioner

COMMENTS OF NORTHERN STATES POWER COMPANY IN THE MATTER OF THE COMMISSION'S ELECTRIC STANDARDS OF SERVICE RULEMAKING

CASE NO. PU-21-360

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the North Dakota Public Service Commission these Comments in Case No. PU-21-360 regarding the Commission's Electric Standards of Service Rulemaking.

Xcel Energy is committed to providing safe and reliable service to our customers in North Dakota. Historically, the Company has had a strong track record of providing a high level of reliable service. In addition, as part of two separate reliability performance programs since 2001, the Company has provided the Commission with annual reliability reporting. This experience gives the Company a unique perspective on the proposed rulemaking which we hope will be useful in providing information and recommendations to the Commission.

These Comments address the proposed amendment to Article 69-09-02 of the North Dakota Administrative Code concerning electric continuity of service and also address various issues discussed at the September 22, 2001 Commission hearing on this matter. The Comments are organized as follows:

- *Section A – Reliability Performance and Historical Reporting* provides Xcel Energy's reliability performance over the past five years in North Dakota, the Company's historical reliability reporting in North Dakota, and Xcel Energy's reporting in its other jurisdictions.

- *Section B – Reporting Considerations and Company Recommendations* addresses the proposed reporting in the rule amendments, factors to consider regarding the

reporting requirements, industry benchmarking, and Xcel Energy's specific reporting recommendations.

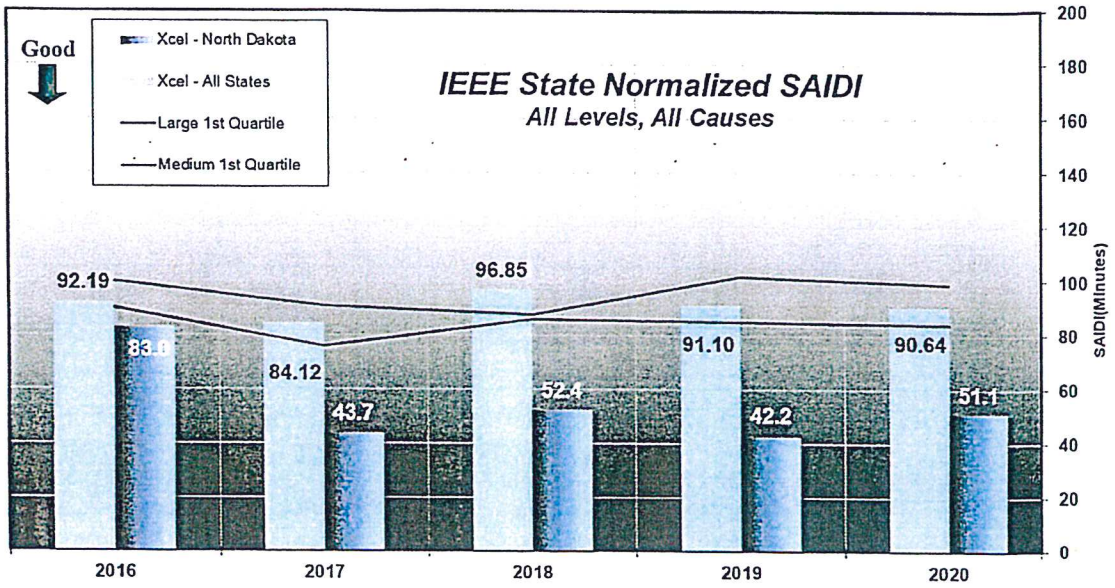
A. Reliability Performance and Historical Reporting

The Company has previously provided reporting on reliability metrics in North Dakota and complies with the current rules regarding outage records. The Company maintains a record of all interruptions to service including the date and time of interruption, the date and time service was restored, and, if known, the cause of each interruption. Below we provide the Company's North Dakota reliability performance over the past five years. We then discuss the Company's past reliability reporting in North Dakota and provide information on what Xcel Energy reports in its other jurisdictions. Throughout these Comments there is reference to various IEEE indices. For reference, Attachment A includes descriptions of these indices and formulas for calculation.

1. Xcel Energy's Historical Reliability Performance – North Dakota

Xcel Energy has provided best-in-Company reliability to our customers in North Dakota for several years. As Figure 1 and Attachment B, slide 2 shows, the Company's SAIDI results in North Dakota over the past five years is performing in the first quartile, or top 25 percent in the industry, in both the medium and large utility categories within the IEEE Distribution Reliability Working Group (DRWG). For reference, the medium category consists of utilities with greater than 100,000 customers, but less than 1,000,000 customers. The large category consists of utilities with 1,000,000 customers or more. We discuss IEEE benchmarking further in Section B. As shown in the bar chart below, reliability performance in North Dakota is also consistently better than Xcel Energy's reliability performance in the other states we serve.

Figure 1
Benchmarking Xcel Energy SAIDI in ND



The SAIDI shown above is calculated according to the IEEE standards for reliability indices found in IEEE standard 1366-2012.

2. Xcel Energy's Historical Reporting – North Dakota

Xcel Energy has reported reliability performance results in our annual North Dakota Electric Jurisdictional Reports during its *Performance Linking Utility Stakeholders* (PLUS) performance-based regulation plan from 2001 through 2005.[1] In addition, as part of our Reliability Performance Plan (RPP)[2], and shown in Attachment C, we provided comprehensive reliability metrics and information from 2013 through 2017 on the following:

- State-wide (normalized) key metrics
  - System Average Interruption Duration Index (SAIDI)
  - System Average Interruption Frequency Index (SAIFI)
  - Customer Average Interruption Duration Index (CAIDI)
- SAIFI, CAIDI for the Company's five largest substations (normalized)
- Top ten causes of actual and normalized outages

[1] Case No. PU-400-00-195
[2] The Reliability Performance Plan was established by the Settlement in Case No. PU-10-657.

- Top ten outage causes of most impactful outages (ranked by Customer-Minutes Out, or CMO)
- Customers Experiencing Multiple Interruptions (CEMI), categorized by 4, 5, and 6 or more outages during the year
- Number and total dollar amount of $50 CEMI customer credits issued
- Number of feeder-level outages and underground cable failures

The term *normalized* is used within the reliability metrics to indicate reliability results when the outages occurring on Major Event Days (MED) are excluded. A MED day is defined as any day when the daily SAIDI value is above the statistically defined IEEE threshold for the area. A MED represents a day when the "energy delivery system experienced stresses beyond that normally expected (such as during severe weather)."[3] The purpose of normalizing reliability results is to assess major events separately from daily operations and, ultimately, to reveal reliability trends in normal daily operations that can be hidden by the statistical effect of unusual and significant interruptions.

As indicated by the breadth of information included in our previous reliability reporting, industry standard indices do not provide the only way to monitor or gauge a utility's reliability performance. Other information may be equally meaningful and informative. For example, in addition to standard reliability metrics like SAIDI, SAIFI, and CAIDI, the Company's prior RPP reporting included the top ten causes of outages and the number of underground cable failures. This information provided another level of insight that may be indicative of how the Company addresses system operations and maintenance. In developing a robust reporting structure, it is important to consider the purpose of the reporting and what kinds of information is of specific interest to the Commission.

3. *Xcel Energy's Reliability Reporting in Other States*

To provide additional context on IEEE 1366-2012 reporting in other states, Figure 2 below shows the reliability metrics the Company reports on in the other states we serve. Table 2 indicates whether reliability statistics are provided at the state, work center/region, and feeder level. A work center or region is an area or division within a state. Each state has its own definition of these areas with populations ranging from approximately 20,000 to over 1,000,000. The Company currently does not report on

[3] IEEE Guide for Electric Power Distribution Reliability Indices (Standard 1366-2012). According to this standard, the daily SAIDI value is assumed to follow a log-normal distribution. After taking the natural logarithm transformation of the daily SAIDI values, the days falling beyond 2.5 standard deviations to the right of the mean are classified as MEDs. This method is also known as the Beta method or IEEE 2.5 Beta.

any areas smaller than these defined work centers/regions. Further, we note that we report very limited IEEE reliability metrics at the federal level. On an annual basis, we report to the Energy Information Administration (EIA) only SAIFI and SAIDI along with the customer count for each state in our entire service territory

Figure 2
IEEE 1366-2012 Xcel Energy Reporting in Other States

Xcel Energy IEEE 1366 Reporting Indices by State

State	Reporting Level	SAIDI	SAIFI	CAIDI	CEMI	ASAI	CELI	MAIFIe[2]
Colorado	State				X[1]		X	
	Work Center/Region	X	X	X	X		X	
	Feeder	X	X	X				
Michigan	State				X[1]			
	Work Center/Region							
	Feeder				X[1]			
Minnesota	State	X	X	X	X	X	X	X
	Work Center/Region	X	X	X		X		
	Feeder	X	X	X				
New Mexico	State	X	X	X		X		
	Work Center/Region							
	Feeder							
North Dakota[3]	State	X	X	X	X			
	Work Center/Region							
	Feeder							
South Dakota	State	X	X	X				
	Work Center/Region							
	Feeder							
Texas	State	X	X					
	Work Center/Region							
	Feeder	X	X					
Wisconsin	State	X	X	X				
	Work Center/Region	X	X	X				
	Feeder	X	X	X				
Energy Information Administration (EIA)	State	X	X					
	Work Center/Region							
	Feeder							

Note 1: Modified CEMI

Note 2: Partial reporting with incomplete data

Note 3: Reliability Performance Plan 2015-2017

Customer outage data on our system is maintained and reported by distribution device, meaning at the feeder level, and each feeder is in one of our three operating divisions in North Dakota: Fargo, Grand Forks, and Minot. As a result, we are readily able to report reliability metrics for our North Dakota service territory at the state,

divisional, and feeder level. Feeder level metrics would provide reliability data for the subset of customers served by a single feeder. However, feeders are not assigned in our system to a particular community or neighborhood area; a single feeder may serve customers in adjacent communities (depending on the definition of "community"). Community is not a defined term relative to reliability reporting within IEEE or across our system and could mean any subdivision at a smaller level than the division. We discuss our system reliability data and reporting capabilities further in Section B.

As the table illustrates, limited IEEE metrics are reported across the states we serve, and we do not periodically report reliability statistics or metrics at a "community" level in any of our states. While we do maintain the required outage data on our system and could manually compile or extract specific information on an outage within a specific community upon Commission request, we are not readily able to calculate and report all IEEE reliability metric results in an automated or systematic fashion by community or other subdivision across the entire service territory. For these reasons, if adopted, the proposed rule amendments would be a significant departure from current reliability tracking and reporting requirements.

B. Reporting Considerations and Company Recommendations

In this section, we address the proposed reporting in the rule amendments, discussing reporting requirement considerations, industry benchmarking, and Xcel Energy's specific reporting recommendations.

The proposed additions to section 69-09-02-06 of the rules specify certain reliability indices required to be calculated and reported, and they specify a level of granularity for that reporting. The IEEE standard 1366-2012 was referenced for all the proposed reporting indices. As discussed above, the 1366-2012 standard provides a wide range of definitions and indices, but not all are applicable or meant to be used and reported on for all systems. Additionally, the value of a particular metric should be explored to ensure it will provide meaningful information. We believe the metrics chosen, IEEE or otherwise, should be tailored to meet the objectives of the Commission. The Company will present reliability performance reporting recommendations for the Commission's consideration based on what aspects of reliability the Commission wishes to focus on, what information can most effectively address those objectives, and what information can be provided without significantly increased complexity or cost. To that end, the Company respectfully suggests that the Commission adopt rules that provide the flexibility needed to accommodate not only the reliability practices of the different utilities in North Dakota, but also evolving or changing objectives over time. We welcome additional conversations with the Commission and

Staff to better understand the Commission's objectives and which metrics can be leveraged to achieve them.

1. *Reporting Requirement Considerations*

For IEEE metrics that include normalized results, we recommend reporting performance results at the divisional level (Fargo, Grand Fork, Minot) and/or feeder level. This level of detail can be accommodated with the current reliability tracking systems at Xcel Energy. The Company does keep a record of all interruptions to service affecting the entire distribution system of any single community or an important division of a community and is therefore in compliance with the current rules. However, record keeping on the community level is different than systematic reporting on multiple reliability metrics at that level. The Company would be able to provide outage-specific reporting at the community level on an event-by-event basis if requested but calculating and systematically reporting on multiple IEEE metrics across various communities or important divisions of communities is not within our current system capabilities. The cost and effort required to obtain that capability would depend on the metric reporting requirements required by the Commission, but the Company does not believe it is necessary to expend additional resources to provide the Commission with meaningful reliability information from which to provide effective oversight.

Beyond cost, reporting at the divisional or feeder level will still provide improved granularity. It would also be consistent with the higher end of the granularity provided in other states the Company serves. Feeder customer counts in North Dakota range from 1 customer to approximately 4,800. Therefore, the Commission would be able to monitor reliability performance on a smaller scale. Further discussion may be warranted to determine if state, divisional, or feeder level reporting is best for a certain metric. The goal is to provide useful data to the Commission while avoiding having to manually process large amounts of data.

2. *Industry Benchmarking*

The proposed rules require reporting of 11 metrics defined by the *IEEE Guide for Electric Power Distribution Reliability Indices, IEEE Std 1366-2012.* However, of those, only SAIDI, CAIDI, and SAIFI are broadly utilized in industry reporting and benchmarking. Xcel Energy participates in the IEEE Distribution Reliability Working Group which performs an annual benchmarking study. That study collects the three-key metrics of SAIDI, SAIFI, and CAIDI from the participating utilities. These are generally viewed throughout the industry as the most useful in assessing, trending, and comparing electric service reliability.

The other metrics defined in IEEE Std 1366-2012 are largely intended to reveal details that may be obscured in the larger system averages such as customers experiencing substantially more interruptions than average. However, many of the metrics are not commonly used due to their limited value and the difficulty in collecting the required data. In particular, the metrics based on load or including momentary interruptions are only available with any meaningful accuracy through advanced technology investments such as Advanced Metering Infrastructure (AMI) systems, and remote communication enabled distribution equipment.

Based on IEEE benchmarking and reporting across all our jurisdictions, the list of metrics proposed for inclusion in the rule goes beyond typical or standard reliability reporting.

3. The Company's Reporting Recommendations

Based on the Company's previous reporting in North Dakota, we recommend continuing to utilize previously reported metrics based on IEEE 1366-2012, and we recommend inclusion of some additional information. These metrics are all within the Company's current reporting systems and the proposed additions to the historical reporting can be accomplished with little additional effort. The metrics within the proposed rules that are not included in the recommendation are also briefly discussed below, providing the reasons the Company does not believe they should be included in the required reporting. We also note that not all utilities are similarly situated. As such, we believe it may be appropriate for the Commission to consider requirements separately for each utility based on current reporting capabilities and plans.

Recommended Reliability Metrics and Statistics to Report

- System Average Interruption Duration Index (SAIDI)
- System Average Interruption Frequency Index (SAIFI)
- Customer Average Interruption Duration Index (CAIDI)
- Average Service Availability Index (ASAI)
- Top Ten Outage Causes
- Customers Experiencing Multiple Interruptions (CEMI) at 4, 5, and 6+ outage thresholds
- Underground Cable Failures
- Top 10 Worst Performing Feeder List (69 feeders total in North Dakota)
- Major Event Days (MEDs) and Details

To accommodate these recommended metrics, and to provide the Commission flexibility in determining the appropriate metrics over time and for each utility in general, the Company proposes the following language for Parts 5 and 6. of 69-09-02-06:

5. *By May 1 of each year, each electric public utility shall file with the Commission the records required by this section. The commission may at any time, upon notice to the electric public utility, require a filing of the records required by this section for a specified time period or specific interruption.*

6. *Each electric public utility shall include in its annual May 1 filing selected reliability indices and statistics for the previous calendar year. The indices will include the System Average Interruption Duration Index (SAIDI), the System Average Interruption Frequency Index (SAIFI), the Customer Average Interruption Duration Index (CAIDI), and other Institute of Electrical and Electronics Engineers Standard 1366 metrics or supplementary data as requested by the Commission that is reasonably within the capability of each public utility. Each utility shall include with its May 1 filing 1) all supporting data used to calculate each of the reported indices, 2) a detailed breakdown of each major event day (MED) and 3) the results of each index reported with and without all MEDs. These statistics will be compiled by each electric public utility for its North Dakota state-wide electric distribution system, each operating division within the state, and/or each feeder, as determined by the Commission.*

4. Reliability Metrics the Company Does Not Recommend

Below, we discuss reliability metrics that are included in the proposed rule amendments that the Company does not recommend for inclusion in reporting requirements and the reasons for the Company's recommendations.

- Customer Total Average Interruption Duration Index (CTAIDI) and Customer average interruption frequency index (CAIFI)

  CTAIDI and CAIFI are not currently utilized in any of the Company's other states and there are currently no information systems developed for automated reporting of this metric. These metrics are somewhat redundant with CAIDI and CEMI and therefore have limited incremental value. Development of reporting will require a full-time employee working at least four weeks each year.

- Average system interruption frequency index (ASIFI) and Average system interruption duration index (ASIDI)

  These metrics are not currently within Company's reporting capability and have not been investigated for use in the past. The equipment and technology required to derive these load-based indices would include, at a minimum, wide-spread remote equipment communication, AMI, and additional advanced data-analytic tools and software that are not yet utilized by the Company. Therefore, it is difficult at this time to determine the total cost and timeframe it would require to be able to accurately report on these metrics.

- Momentary average interruption frequency index (MAIFI), and customers experiencing multiple sustained interruption and momentary interruption events (CEMSMI)

  The Company currently is very limited in its ability to track and report on momentary interruptions. This limitation is due in part to the lack of equipment such as customer meters with AMI, substation metering, and distribution reclosers that have remote communication abilities. Reporting at this time would therefore be incomplete and would provide only partial data. Without the addition of AMI technology, remote communication upgrades, and other advanced data analytics tools, it is premature to adequately implement this type of reporting.

CONCLUSION

The Company appreciates the opportunity to provide comments and recommendations on the proposed rule amendments. The goal of our recommendation is to provide adequate reporting to meet the Commission's oversight objectives without providing an overwhelming number of statistics that may not be completely valuable or meaningful. We remain committed to providing reliable service to our customers in the state of North Dakota and we will continue to update the Commission as we deploy AMI and/or develop additional reliability tracking and reporting capabilities. We look forward to working with the Commission Staff to determine the most efficient and meaningful ways to report on the Company's reliability performance.

Summary of IEEE 1366™ Reliability Indices

Below is a summary of the IEEE 1366-2012 indices included in the proposed rule. For each, we provide a brief description and the formula used for the calculations. Following that, we provide the definitions used for the calculations. All indices are calculated over a specified period, typically a month or year.

IEEE 1366 Indices and Definitions

SAIDI - System Average Interruption Duration Index

Indicates the average total duration (in minutes) of interruption a customer experiences.

- Formula: $\frac{\text{Customer Minutes of Interruption}}{\text{Total Number of Customers Served}}$

SAIFI - System Average Interruption Frequency Index

Indicates the average number of sustained interruptions a customer experiences.

- Formula: $\frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Customers Served}}$

CAIDI - Customer Average Interruption Duration Index

Indicates the average time (in minutes) to restore service during a sustained outage.

- Formula: $\frac{\text{Customer Minutes of Interruption}}{\text{Total Number of Customer Interruptions}}$

CTAIDI - Customer Total Average Interruption Duration Index

Indicates the average total duration (in minutes) of interruption to customers who experienced a sustained interruption.

  - Hybrid of CAIDI: Similarly calculated except that customers with multiple interruptions are only counted once in the Customers Interrupted count
  - Effectively a SAIDI value that excludes any customers that did not experience sustained interruptions

- Formula: $\frac{\text{Customer Minutes of Interruption}}{\text{Total Number of Distinct Customers Interrupted}}$

CAIFI - Customer Average Interruption Frequency Index
Indicates the average number of sustained interruptions to customers who experienced a sustained interruption.

- Hybrid of SAIFI: Similarly calculated except that customers with multiple interruptions are only counted once in the Customers Interrupted count
- Effectively a SAIFI value that excludes any customers that did not experience sustained interruptions

- Formula: $\frac{\text{Total Number of Customer Interruptions}}{\text{Total Number of Distinct Customers Interrupted}}$

ASAI - Average Service Availability Index
Indicates the ratio of time customers were receiving power.

- Formula: $\frac{\text{Customer Hours Possible} - \text{Customer Hours Outage}}{\text{Customer Hours Possible}}$

$CEMI_n$ – Customers Experiencing Multiple Interruptions
Indicates the ratio of individual customers experiencing *n* or more sustained interruptions to the total number of customers served.

- Formula: $\frac{\text{Number of Customers that experienced } n \text{ or more sustained interruptions}}{\text{Total number of Customers Served}}$

ASIFI – Average System Interruption Frequency Index
Similar to SAIFI but based on load rather than customers affected.

- Effectively a SAIFI value weighted relative to customer load size.

- Formula: $\frac{\text{Total Connected kVA of Load Interrupted}}{\text{Total Connected kVA Served}}$

ASIDI – Average System Interruption Duration Index
Similar to SAIDI but based on load rather than customers affected.

- Effectively a SAIDI value weighted relative to customer load size.

- Formula: $\frac{\text{Connected kVA Duration of Load Interrupted}}{\text{Total Connected kVA Served}}$

MAIFI – Momentary Average Interruption Frequency Index
Indicates the average number of momentary interruptions a customer experiences.

- Formula: $\frac{\text{Total Number of Customer Momentary Interruptions}}{\text{Total Number of Customers Served}}$

$MAIFI_e$ – Momentary Average Interruption Event Frequency
Indicates the average number of momentary interruption events a customer experiences. Events immediately preceding a sustained interruption are excluded.

- Formula: $\frac{\text{Total Number of Customer Momentary Interruption Events}}{\text{Total Number of Customers Served}}$

$CEMSMI_n$ – Customers Experiencing Multiple Sustained and Momentary Interruption Events
Indicates the ratio of individual customers experiencing *n* or more of both sustained interruptions and momentary interruption events to the total customers served.

- Formula: $\frac{\text{Number of Customers that experienced } n \text{ or more interruptions}}{\text{Total number of Customers Served}}$

IEEE Calculation Definitions

Customer Minutes of Interruption: A Summation of [Number of Customers Affected by each outage x Length (in Minutes) of each outage]

Customer Interruptions: A Summation of [Number of Customers Affected by each outage]

Customers Served: Total number of customers served for the area

Distinct Customer Interruptions: A Summation of [Number of Distinct Customers Affected by a Sustained Outage

Customer Hours Possible: Total Number of Customers Served x Period Hours

Customer Hours Outage: A Summation of [Number of Customers Affected by each outage x Length (in Hours) of each outage]

Period Hours: Number of Hours per Specified Unit of Time (Example: 8,760 hours per 365-day year)

Connected kVA Load Interrupted: A Summation of [kVA load interrupted for each event]

Connected kVA Served: Total connected load served for the area

Connected kVA Duration of Load Interrupted: A Summation of [kVA load affected by each outage x Length (in Minutes) of each outage]

Connected kVA Served: Total connected load served for the area

Customer Momentary Interruptions: A Summation of [Number of Customers Affected by each Momentary interruption]

Customer Momentary Interruption Events: A Summation of [Number of Customers Affected by each Momentary Event]

Momentary Event: One or more Momentary Interruptions within a 5-minute period

Momentary Interruption: Brief loss of power 5 minutes or less in length impacting 1 or more customers

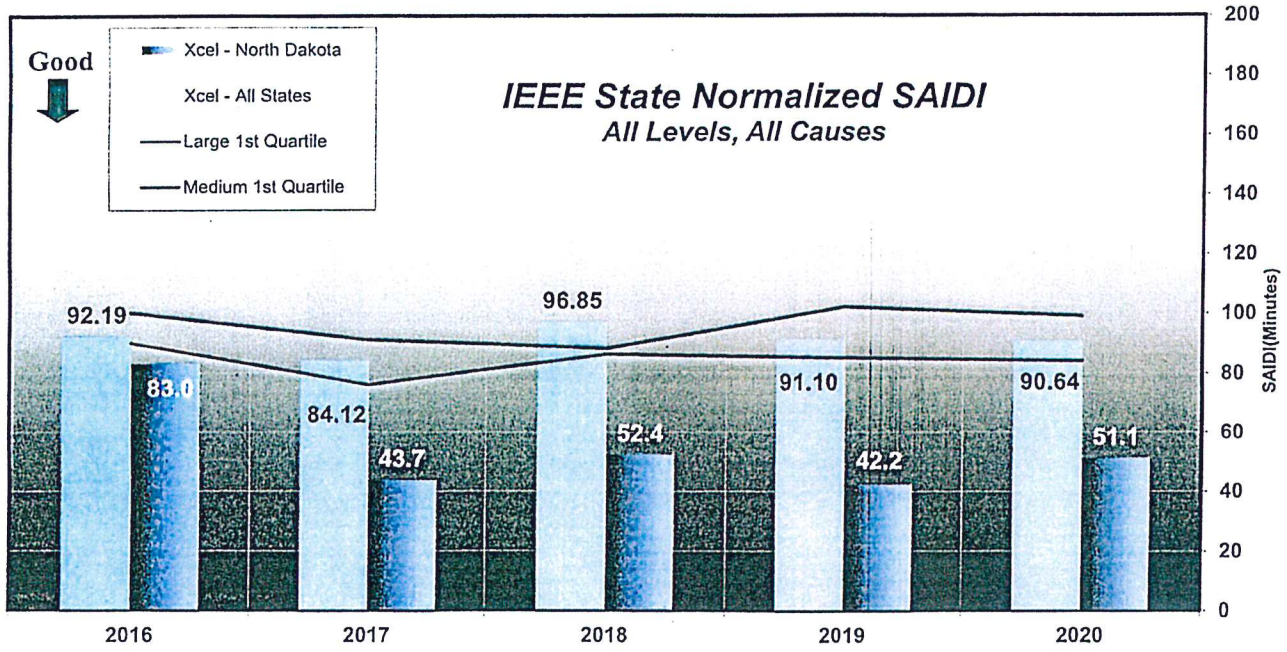
Sustained Interruption: Interruption duration of more than 5 minutes impacting 1 or more customers

Xcel Energy®

PROPOSED ELECTRIC CONTINUITY OF SERVICE RULES 69-09-02-06

Xcel Energy SAIDI – Five Year History

System Average Interruption Duration Index (SAIDI):
The Amount of Minutes a Typical Customer is Without Power During the Year



Based on sustained outages only (> 5 minutes), Meter-Based customer counts, All Levels and All Causes, IEEE State Normalized
All results based on State Only

Reliability Performance Plan (2015 – 2017)

- SAIFI, CAIDI (state-wide, normalized)
- SAIFI, CAIDI for the Company's 5 largest substations (normalized)
- Top 10 causes of outages (actual and normalized)
- Top 10 outage causes by customer-minutes out
- Customers Experiencing Multiple Interruptions (CEMI), totals by 4, 5, and 6 or more
- CEMI customer credits issued
- Number of feeder-level outages and underground cable failures
- RPP financial award calculation

Reliability Metric Recommendations

- SAIDI, SAIFI, CAIDI
- ASAI (Average Service Availability Index)
- CEMI (Customer Experiencing Multiple Interruptions) with defined threshold(s)
- Detailed breakdown of each MED (Major Event Day) used for normalization

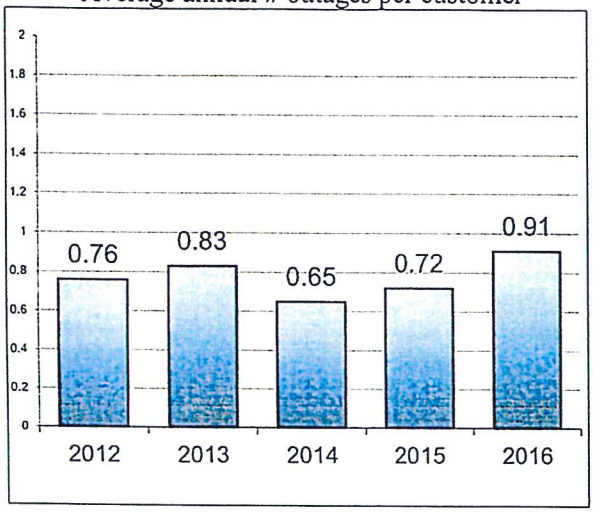
Difficulties of Certain Reliability Metrics

Other Considerations

Northern States Power Company
Electric Utility - North Dakota
Outage Frequency and Duration Indices - 2016

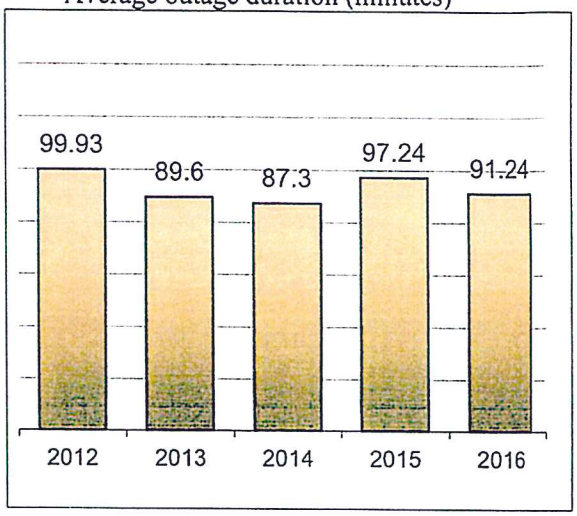
System Avg Interruption Frequency Index
(SAIFI)

Average annual # outages per customer



Customer Avg Interruption Duration Index
(CAIDI)

Average outage duration (minutes)



SAIFI (Interruption Frequency) - Largest Five Substations

	2012	2013	2014	2015	2016	5 Yr. Avg
Cass County (Fgo)	0.71	0.90	0.36	0.42	0.56	0.59
Souris (Mnt)	0.36	1.08	0.40	0.44	0.75	0.61
Nordic (GF)	1.01	0.58	0.41	0.88	0.51	0.68
Red River (Fgo)	0.70	0.86	0.78	0.93	1.29	0.91
Gateway (GF)	0.59	0.54	1.74	0.62	1.60	1.02

CAIDI (Interruption Duration) - Largest Five Substations

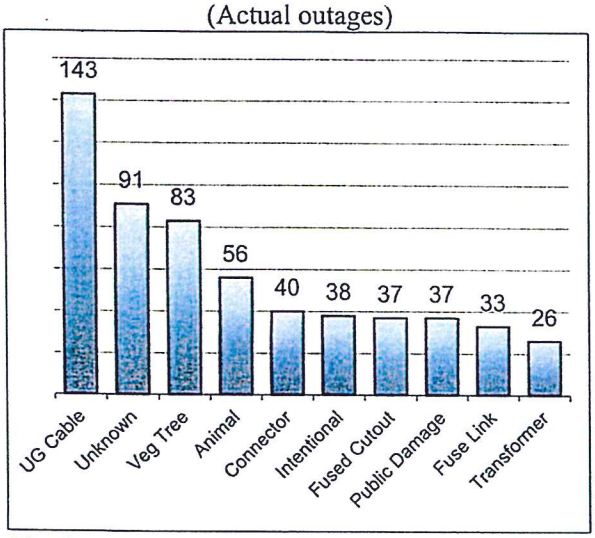
	2012	2013	2014	2015	2016	5 Yr. Avg
Gateway (GF)	89.1	100.3	54.9	75.1	71.5	78.2
Red River (Fgo)	110.1	88.7	88.7	75.8	98.2	92.3
Nordic (GF)	74.1	104.7	97.6	98.8	115.0	98.0
Souris (Mnt)	105.8	72.4	80.5	166.3	67.1	98.4
Cass County (Fgo)	78.6	109.3	158.7	104.7	120.9	114.4

Data reflects normalized outages lasting 5 minutes or longer. In 2016 one Major Event Day (May 22) was excluded.

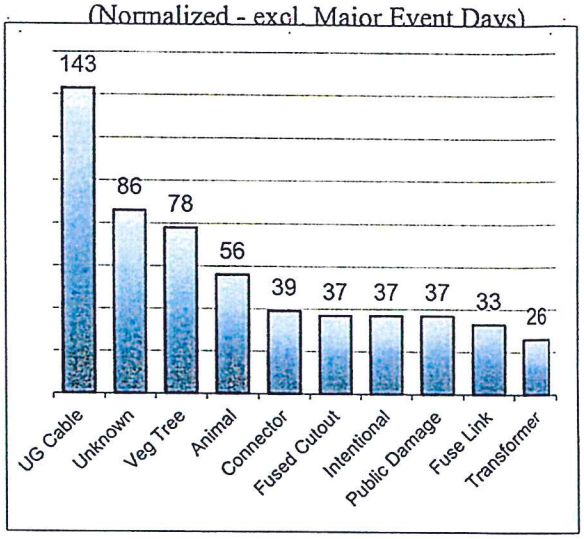
Northern States Power Company
Electric Utility - North Dakota
Most Common Outage Causes - 2016

Top 10 Outage Causes

(Actual outages)



(Normalized - excl. Major Event Days)

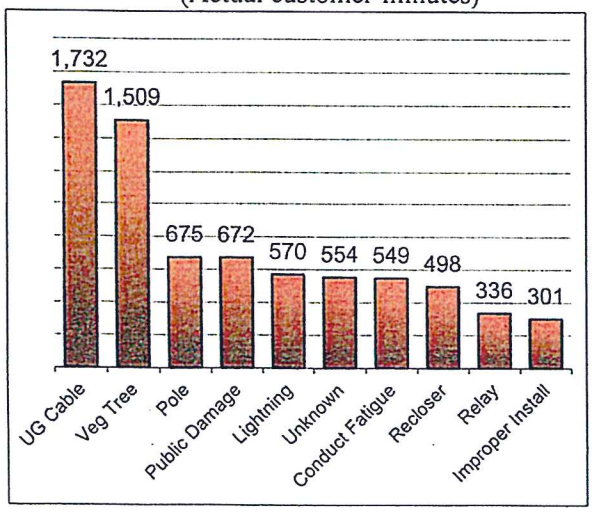


Total outage events: 665

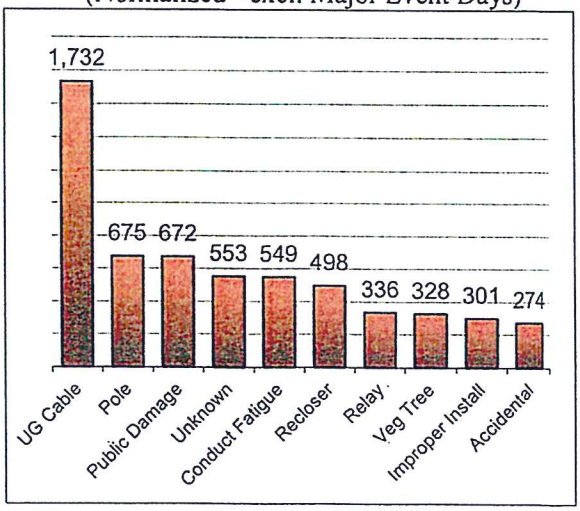
Top 10 Causes of Lengthy or Wide-spread Interruptions

(measured in customer-minutes without power - 000's)

(Actual customer-minutes)



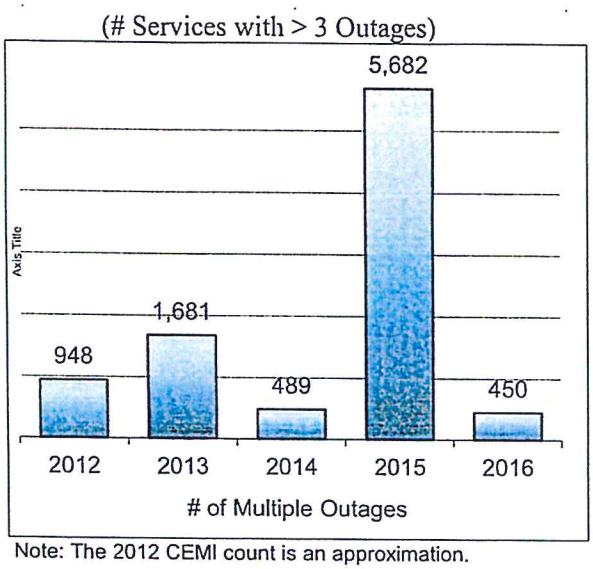
(Normalized - excl. Major Event Days)



Note: Date reflects outages lasting 5 minutes or longer.

Northern States Power Company
Electric Utility - North Dakota
CEMI, Feeder Outages, and Underground Cable Failures - 2016

Customers Experiencing Multiple Interruptions
(CEMI)



Note: The 2012 CEMI count is an approximation.

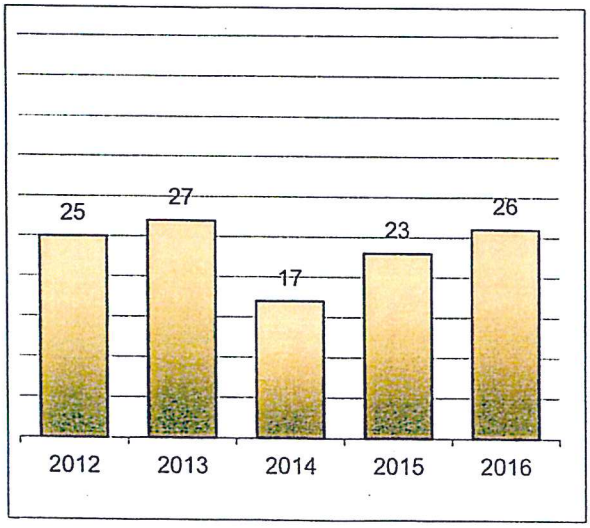
Breakdown of 2016 CEMI Levels

# Outages	Customers
4	382
5	32
6+	36
	450

CEMI Credits Issued

2013	$84,050
2014	$24,650
2015	$284,100
2016	$22,350

Feeder-Level Outages



Underground Cable Failures

Year	UG Cable Failures
2012	139
2013	159
2014	155
2015	147
2016	143

(reflects primary, secondary cable failures)

Data reflects outages lasting 5 minutes or longer; Major Event Day (May 22) & public damage events excluded.

USND
Utility Shareholders
of North Dakota

PO Box 1856
Bismarck, ND 58502
701-258-8864
1-800-981-5132
www.usnd.org

Comments regarding PU-21-360

We have concerns with the ambiguity of paragraph 4 of the proposed rules which includes the penalty provision. As we stated during the legislative process for SB 2313, the rules for such a penalty should be clear. In particular, at that time, we asked that the law clarify the sort of outages that would result in a penalty as well as those that would not. This proposed rule does not provide for clarity, it merely restates the law which allows the PSC to administer a penalty or penal action without proscribing the method by which a penalty might be assessed.

At a minimum, we'd ask that the commission clarify that major event days fall outside the outage events which could prompt a penalty, disallowance, or requirement. These events were discussed during the legislative process, and it was clear legislators did not want utilities to be subject to penalty for events outside their control, which is what major event days are.

Without such clarity, it would be best not to adopt a rule which does nothing more than restate the law.

As stated during the legislative process and the formal hearing for these rules, ND utilities have some of the best (and therefore lowest) occurrences of outage compared to the rest of the country. They take seriously their duty to deliver electricity, and the data supports that diligence.

Thank you.

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service - Electric
Rulemaking

Case No. PU-21-360

ORDER SUBMITTING RULES TO ATTORNEY GENERAL

October 21, 2021

Appearances

Commissioners Julie Fedorchak, Brian Kroshus, and Randy Christmann.

Preliminary Statement

On August 18, 2021, the North Dakota Public Service Commission (Commission) issued a formal Notice of Intent to Adopt and Amend Administrative Rules and Notice of Public Hearing and an Abbreviated Notice of Intent to Adopt and Amend Administrative Rules and Notice of Public Hearing, proposing to create a proposed amendment to Article 69-09-02 of the North Dakota Administrative Code.

On August 18, 2021, Commission Staff (Staff) filed statements regarding the required regulatory analysis, small entity analysis, and takings assessments for the captioned cases.

Also on August 18, 2021, the Commission forwarded the notices to the North Dakota Newspaper Association for publication at least 20 days in advance of the hearing and a copy of the Notices and proposed Rules were sent to the Legislative Council.

The Abbreviated Notice was published in each of the 51 official county newspapers in the state during the weeks of August 25 through August 31, 2021.

On September 22, 2021, the Commission held the public hearing as noticed, beginning at 1:30 p.m. in the Commission Hearing Room, 12th floor, State Capitol, Bismarck, North Dakota.

The Commission allowed a comment period until October 4, 2021, during which the Commission received and considered data, views, or written and oral comments concerning the proposed rulemaking as part of the rulemaking record.

The proposed rules and amendments are summarized as follows:

Case No. PU-21-360 - proposed amendment to Article 69-09-02 – Standards of Service- Electric

The purpose of the proposed amended article 69-09-02 is to address reporting requirements and criteria for a public utility's reliable service obligation pursuant to the passage of Senate Bill 2313 of the Sixty-seventh Legislative Assembly. The proposed chapter is not expected to have an impact on the regulated community in excess of $50,000.

Public Hearing and Comments

The Commission reviewed and considered all comments. The written and oral comments that were received are summarized and discussed below by case number.

Case No. PU-21-360 - proposed amendment to Article 69-09-02 – Standards of Service- Electric

The Commission proposed changes to N.D. Admin. Code Ch. 69-09-02-06, amending the section. The amended section adopts reliability measurements established by the Institute of Electrical and Electronics Engineers, Inc.

Victor Schock, a Public Utility Analyst with the Public Utilities Division, testified on behalf of Staff to the effect of this amendment.

Sheila Harris and Patrick Kuretich from Xcel Energy, Travis Jacobson and Rebecca Naasland from MDU, Matt Olson from Otter Tail, and Carlee McLeod President of Utility Shareholders of North Dakota provided oral comment at the hearing.

Xcel Energy, MDU, Otter Tail and Utility Shareholders also provided written comments that incorporated their oral comments and provided what metrics are currently reported and which metrics the proposed rules would be difficult and costly to provide at this time.

Xcel Energy recommends the following for reporting reliability Metric and Statistics based on their current data collection:

- System Average Interruption Duration Index (SAIDI)
- System Average Interruption Frequency Index (SAIFI)
- Customer Average Interruption Duration Index (CAIDI)

- Average Service Availability Index (ASAI)
- Top Ten Outage Causes
- Customers Experiencing Multiple Interruptions (CEMI) at 4, 5, and 6+ outage thresholds
- Underground Cable Failures
- Top 10 Worst Performing Feeder List (69 feeders total in North Dakota)
- Major Event Days (MEDs) and Details

Xcel does not recommend the following reliability metrics for reporting based on their current data collection:

- Customer Total Average Interruption Duration Index (CTAIDI)
- Customer Average interruption frequency index (CAIFI)
- Average system interruption frequency index (ASIFI)
- Average system interruption duration index (ASIDI)
- Momentary average interruption frequency index (MAIFI)
- Customers experiencing multiple sustained interruption and momentary interruption events (CEMSMI)

MDU first comments on the proposed penalty section and recommends the following:

(1) the Commission further define the amount of the penalty and the parameters or circumstances of when a penalty may be assessed

(2) the Commission establish a reliability record on which to base any penalties prior to the first assessment of such penalties; and

(3) the Commission establish timelines for the implementation of any changes under Section 69-09-02-06.

MDU states that they currently report SAIFI, SAIDI, and CAIDI is also available to be reported if required. MASIFI is another index that MDU believes they could calculate with modest cost and effort. Any other indices that would be required would likely cause MDU to implement a computerized system with hardware and software costs of $4 million dollars and an annual cost of $100,000.00 for annual maintenance. The implementation would require an additional 10 full time employees at a cost of $1.5 million annually. MDU further states that significant additional cost and effort would be required to determine an individual community-based IEEE defined Major Event Day (MED) manually, and manually produce additional indices for each individual community. This process would likely necessitate hiring additional full-time employees.

Otter Tail Power states they currently track and report or could report in North Dakota:

- system average interruption frequency index (SAIFI)
- system average interruption duration index (SAIDI)
- customer average interruption duration index (CAIDI)
- customer total average interruption duration index (CTAIDI)
- customer average interruption frequency index (CAIFI)
- momentary average interruption frequency index (MAIFI)
- average service availability index (ASAI)
- customers experiencing multiple interruptions (CEMI-5, which would report
- percentage of customers experiencing 5 or more sustained interruptions)
- customers experiencing long interruption durations (CELID-s60, which would report the percentage of customers experiencing interruption >60 minutes)
- customers experiencing multiple sustained and momentary interruptions (CEMSMI-5, reports customers experiencing 5 or more sustained or momentary interruptions)
- Otter Tail also assesses Major Event Days to exclude such events from reliability metrics utilizing the IEEE 2.5 Beta Methodology.

Otter Tail Power states the following metrics are currently beyond the company's current reporting abilities:

- customers experiencing multiple interruptions CEMI at levels other than 5 would have to be calculated manually.
- customers experiencing multiple sustained interruption and momentary interruption events (CEMSMI) at levels other than 5 would have to be calculated manually.
- average system interruption frequency index (ASIFI), is not possible based our company's available data collection systems.
- average system interruption duration index (ASIDI), is not possible based our company's available data collection systems.

The above items would require additional labor for manual calculations, the Company estimates 20 hours by an engineer for each additional metric.

Otter Tail Power discussed their new advanced metering infrastructure and its ability to enhance granularity in reliability reports as power-off information will come directly from the meter.

Xcel, MDU, and Otter tail all expressed a reporting date of May 1 would be beneficial to either eliminate extra reporting or to give extra time to compile any additional data they may need to compile above what is already collected and reported.

Utility Shareholders expressed concern with the clarity of the penalty provision as it does not proscribe the method in which a penalty might be assessed and asks that it be amended to clarify major event days fall outside of the outage events which could prompt a penalty, disallowance, or requirement.

Amendments to the rules were made based on the comments. The filing date was changed to May 1 as all utilities requested that be changed, and it does not have any major impacts or effects to have the reporting date as May 1.

Required reporting indices were changed based on the comments provided and what could be reported by all the utilities. Remaining reported indices are SAIFI, SAIDI, and CAIDI. These were consistent with all utilities in their ability to report them as the information is currently collected and can be reported without excess time and costs. Indices which were removed were done so because of the utilities comments and inability to report them or the time and money that it would cost to collect and report the data.

The penalty provision was not amended based on the comments of MDU and Utility Shareholders. To eliminate MED days would be inconsistent with what the rules are trying to accomplish and limit the commission as to what it can consider when assessing disallowances, fines, or penalties. The clarity of the penalty provision is clear in what will be considered when requiring action, assessing disallowances, fines, or penalties.

The Commission adopts N.D. Admin. Code § 69-09-02-06 as amended.

Discussion

Having reviewed the proposed rules, and considered the testimony and comments received, the Commission finds good cause for submitting the proposed rule in Case No. PU-21-360 as revised after comment, attached to and made a part of this order, to the Attorney General for an opinion as to legality.

ORDER

The Commission orders that the proposed rules and amendments in Case No. PU-21-360, attached and made part of this order, be submitted to the Attorney General for an opinion that the rules are approved as to their legality.

PUBLIC SERVICE COMMISSION

Randy Christmann	**Julie Fedorchak**	**Brian Kroshus**
Commissioner	**Chair**	**Commissioner**

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service - Electric
Rulemaking

Case No. PU-21-360

69-09-02-06. Continuity of Service.

1. An electric public utility is responsible for ensuring reliable service.

~~1.~~2. Each utility shall make every reasonable effort to prevent interruptions of service, and when such interruptions occur shall endeavor to reestablish service within the shortest possible time. Whenever the service is necessarily interrupted or curtailed for the purpose of working on equipment, it shall be done at a time which, if at all practicable, will cause the least inconvenience to customers, except in cases of emergency.

~~2.~~3. Each utility shall keep a record of all interruptions to service affecting the entire distribution system of any single community or an important division of a community, and include in the record the date and time of interruption, the date and time service was restored, and, if known, the cause of each interruption. Service interruption records shall be kept for a period of six years

4. If an electric public utility fails to meet its obligation to provide reliable service to customers, the commission may require action, assess disallowances or fines, or provide a penalty. A penalty, disallowance or fine, or action will take into consideration the nature, circumstances, and gravity of the violation, degree of culpability, history of prior service interruptions, and good faith attempts to ensure reliability.

5. By May 1 each year, each electric public utility shall file with the Commission the records required by this section. The commission may at any time, upon notice to the electric public utility, require a filing of the records required by this section for a specified time period or specific interruption.

6. Each electric public utility shall include in its annual May 1 filing, reliability statistics for the previous calendar year including Institute of Electrical and Electronics Engineers Standard 1366 indices system average interruption frequency index (SAIFI), system average interruption duration index (SAIDI), Customer average interruption duration index (CAIDI). Each utility shall include with this filing the datapoints used to calculate each of the above indices and a detailed breakdown of

each major event day (MED). These statistics will be compiled by each electric public utility for its North Dakota distribution system.

STATE OF NORTH DAKOTA
OFFICE OF ATTORNEY GENERAL
STATE CAPITOL
600 E BOULEVARD AVE DEPT 125
BISMARCK, ND 58505-0040
(701) 328-2210
www.attorneygeneral.nd.gov

Wayne Stenehjem
ATTORNEY GENERAL

OPINION

October 28, 2021

Mr. Brian Johnson
Public Service Commission
600 E. Boulevard Ave Dept. 408
Bismarck, ND 58504-0480

Dear Mr. Johnson,

The Office of Attorney General has examined the proposed amendments to N.D.A.C. § 69-09-02-06 concerning continuity of service, along with the notice of the proposed rules, the publication of that notice, and the filing of that notice with the Legislative Council. This office has also determined that 1) a written record of the agency's consideration of any comments to the proposed rules was made, 2) a regulatory analysis was issued, 3) a takings assessment was not prepared, 4) a small entity regulatory analysis and an economic impact statement were not prepared because the agency believes the proposed rules will not impact small entities, and 5) the proposed rules are within the agency's statutory authority.

These administrative rules are in compliance with N.D.C.C. ch. 28-32 and are hereby approved as to their legality. Upon final adoption, these rules may be filed with the Legislative Council.

Sincerely,

Troy Seibel
Chief Deputy

amj
cc: Jill Grossman, Legislative Council

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Energy Conversion Facility Siting Criteria
Rulemaking

Case No. PU-21-360

Statements on Regulatory Analysis, Small Entity Analysis, and Takings Assessment

August 18, 2021

The Commission is proposing amendment to Article 69-09-02 of the North Dakota Administrative Code, Public Utility Division, Standards of Service - Electric. The purpose of the proposed rule amendment is to address reporting requirements and criteria for a public utility's reliable service obligation pursuant to the passage of Senate Bill 2313 of the Sixty-seventh Legislative Assembly.

The proposed rule is the result of new legislation and is not pursuant to emergency rulemaking.

Regulatory Analysis

N.D.C.C. § 28-32-08 requires an agency to prepare a regulatory analysis if the rule is expected to have an impact on the regulated community in excess of fifty thousand dollars, or if one is requested as provided in the law. The law provides, in part:

1. The regulatory analysis must contain:

   a. A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;

   b. A description of the probable impact, including economic impact, of the proposed rule;

   c. The probable costs to the agency or commission of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues; and

   d. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency or commission and the reasons why the methods were rejected in favor of the proposed rule.

A regulatory analysis has not been requested, and the proposal is not expected to impact the regulated community by an amount in excess of fifty thousand dollars ($50,000.00). The proposed rule adding the requirements of reliable service obligation may potentially have costs associated with them. The costs should not be over $50,000 as most of the data required to be reported is already collected by the Public Utilities.

a. The class that would be affected is Public Utilities.

   The class to benefit from this is the general public.

b. The proposed rule would require data to be submitted in an annual report from data already collected by the public utility.

c. There are no perceived costs to the agency or commission of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

d. No alternatives were considered or rejected.

Takings Assessment

N.D.C.C. § 28-32-09 requires an entity to prepare a written assessment of the constitutional takings implications of a proposed rule that may limit the use of private real property.

The proposed amendments are not anticipated to limit the use of private property.

Small Entity Economic Impact Statement

The adoptions of these rules will not have an adverse impact on small entities. None of the rule changes would negatively impact them in a way that would require the commission to establish less stringent requirements, consolidation, or simplification of reporting, establishing separate performance standards, or exemptions from the proposed rule.

Small Entity Regulatory Analysis

N.D.C.C. § 28-32-08.1 requires that before adoption of any proposed rule, the adopting agency prepare a regulatory analysis in which the agency considers options to minimize adverse impact on small entities. The law provides, in part:

2. The agency shall consider each of the following methods of reducing impact of the proposed rule on small entities:

a. Establishment of less stringent compliance or reporting requirements for small entities;

b. Establishment of less stringent schedules or deadlines for compliance or reporting requirements for small entities;

c. Consolidation or simplification of compliance or reporting requirements for small entities;

d. Establishment of performance standards for small entities to replace design or operational standards required in the proposed rule; and

e. Exemption of small entities from all or any part of the requirements contained in the proposed rule.

Since the proposed rules do not impact Small Entities no regulatory analysis is required to address reducing impacts, less stringent reporting requirements, less stringent schedules or deadlines, consolidation or simplification or reporting requirements, establishment of performance standards for small entities, or exemption for small entities from the requirements of the proposed rule.

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service - Electric
Rulemaking

Case No. PU-21-360

FISCAL NOTE

October 21, 2021

Adoption of the proposed rules in the captioned case are not expected to have any impact on State expenditures or revenues.

APPROVED
DATE: 11/01/2021
PUT

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Public Service Commission
Standards of Service - Electric
Rulemaking

Case No. PU-21-360

MOTION

November 1, 2021

Having been approved by the Attorney General, I move the Commission adopt the proposed amendments to the North Dakota Administrative Code 69-09-02-06 and forward those proposed changes of the North Dakota Administrative Code to the Legislative Council for publication, in Public Service Commission, Standards of Service - Electric, Rulemaking, Case No. PU-21-360.

Amend Section 69-09-02-06 Standards of Service - Electric