



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

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Bismarck, ND 58501
701-222-7900

May 24, 2022

Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Ave., Dept. 408
Bismarck, ND 58505-0480

Re: Case No. PU-22-175
2021 Electric Annual Report

Pursuant to discussions with North Dakota Public Service Commission Staff (“Commission”), Montana-Dakota Utilities Co. (“Montana-Dakota” or “Company”) herewith submits additional information regarding the recently implemented electric reliability information.

Montana-Dakota has provided certain reliability indices calculated consistent with the IEEE 1366 Standards annually to the Commission. Each year this consists of the IEEE defined SAIFI, SAIDI, and more recently CAIDI. Each are presented with and without storm events. Storm Events have been historically determined as transmission line outages to multiple communities caused by severe storms. Additionally, Montana-Dakota has used a definition of a Major Event Day (“MED”) as one where 10% of a region’s substation circuits were impacted with a simultaneous sustained outage.

2021 did not experience a MED day as defined above.

Storm events on the transmission system that were considered in reporting “with or without” storm indices differences were as follows:

- January 14, 2021- Winter storm event with high winds interrupted customers in Corinth, Alamo, Epping, Alexander, and Watford City.
- May 27, 2021 – Spring thunderstorm event interrupted customers in Burnstad and Napoleon.
- June 7, 2021 – Spring thunderstorm event interrupted customers in Wishek, Fullerton, Monango, Lehr, Kulm, Fredonia, and Merricourt.
- June 8, 2021 - Spring thunderstorm event interrupted the Beulah area, including the Westmoreland and Coyote Creek areas.

- June 10-11, 2021 – Spring thunderstorm event interrupted customers in the Glen Ullin, Dickinson Water Plant, Gladstone, Taylor, Hebron, Richardton Corinth, Alamo, Grenora, Zahl, and Hanks systems.
- July 16, 2021 – Summer thunderstorm event that interrupted customers east of Bismarck to the Sterling, McKenzie, Range, KFYZ, and Driscoll substation systems.
- July 21, 2021 – Summer thunderstorm event that interrupted customers in Beach ND.

The IEEE Major Event Day calculation is the part of the IEEE 1366 Standard that the Company current is not set up to follow. This calculation requires a daily calculation of SAIFI from a combined dataset of all transmission and distribution outage events to follow the IEEE MED definition. Montana-Dakota has been working towards an Outage Management System (OMS) that will allow for this common outage database to follow the IEEE MED day calculation. This OMS system is expected to be in place for the 2023 reliability reporting due in the spring of 2024.

In the Notice of Intent to Adopt Administrative Rules regarding the proposed Amended Section 69-09-02-06 – Standards of Service – Electric, Case No. PU-21-360, Montana-Dakota commented during the September 22, 2021 public hearing, and in written comments on October 4, 2021 that 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 and that Montana-Dakota would likely need to supplement or replace this process with a computerized system to fully report the various indices. The Company has decided to move forward the implementation of an Outage Management System (OMS) for its Electric Distribution System (EDS).

In the recently filed electric rate case (Case No. PU-22-194), the associated investment and Operation & Maintenance expenses have been included which will provide an automated system to accumulate and compile the required indices. Reporting under the new system is expected to begin in 2023 with full calendar year reporting in 2024.

Montana-Dakota includes the 2021 supporting calculated data used to determine the current indices' calculations both with and without storm events in the table below:

Updated:		1/30/2022		ALL EVENTS	Excludes Storms
Year	2021		Year	NORTH DAKOTA	NORTH DAKOTA
Description			2021		
Max Minutes Available				52874060954	52876508653
Total Number of Sustained Interruptions				270	230
Total Number of Customers Interrupted (Sustained)				67583	47809.00
Total Number of Customers Interrupted (Momentary)				0	0
Total Number of Customers Served				100610	100610
Sum of Customer Interruption Durations (Customer Minutes Sustained)				6555045.967	4107347.1
Total No. of Customer Momentary Interruption Events					0
Customer Hours Service Availability	8760-(SAIDI/60)			8,782.9141	8,783.3196
Customer Hours Service Demand	24Hr/dyx365Dy/Yr			8760	8760
2.2.1 Sustained Interruption Indices					
2.2.1.1 System Average Interruption Frequency Index (SAIFI)					
SAIFI =	Total Number of Customers Interrupted (Sustained)			0.672	0.475
	Total Number of Customers Served				
2.2.1.2 System Average Interruption Duration Index (SAIDI)					
SAIDI =	Sum of Customer Interruption Durations (Customer Minutes Sustained)			65.15	40.82
(Min)	Total Number of Customers Served				
2.2.1.3 Customer Average Interruption Duration Index (CAIDI)					
CAIDI =	Sum of Customer Interruption Durations (Customer Minutes Sustained)			96.99	85.91
(Min)	Total Number of Customers Interrupted (Sustained)				

Please contact me at 701.222.7855 or travis.jacobson@mdu.com if you have questions.

Sincerely,

/s/ Travis R. Jacobson

Travis R. Jacobson
Director of Regulatory Affairs