



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

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Bismarck, ND 58501
701-222-7900

May 24, 2023

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

Re: Case No. PU-23-170
2022 Electric Annual Report

Pursuant to a request from North Dakota Public Service Commission Staff (“Commission”), Montana-Dakota Utilities Co. (“Montana-Dakota” or “Company”) herewith submits supplemental electric reliability information.

On May 1, 2023, Montana-Dakota provided certain reliability indices calculated consistent with the IEEE 1366 Standards to the Commission as part of the Company’s 2022 Electric Annual Report in the above referenced case number. This consists of the IEEE defined SAIFI, SAIDI, and CAIDI. Each were 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.

The IEEE Major Event Day calculation is a part of the IEEE 1366 Standard; however, the Company is currently not able to follow as the calculation requires a daily calculation of SAIFI from a combined dataset of all transmission and distribution outage events to follow the IEEE MED definition. As previously outlined in Case No. PU-21-360, Commission’s Notice of Intent to Adopt Administrative Rules regarding the proposed Amended Section 69-09-02-06 – Standards of Service – Electric, and the Company’s pending electric rate case, PU-22-194, Montana-Dakota is currently in the process of implementing an Outage Management System (OMS) that will allow for this common outage database to follow the IEEE MED day calculation. The OMS is in development and is to be in place during 2023. The system will be used for calendar year 2024 reporting. 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. Following the implementation of the OMS system, the Company will be able to further comply with the various indices requirements.

Montana-Dakota did experience MED days, as defined above, in 2022 as reported in Section V, pages 3 and 4 of the Company's 2022 Electric Annual Report.

The Company also experienced a number of storm events on the transmission system that were considered in reporting "with or without" storm indices:

- May 12, 2022 – Spring thunderstorm event interrupted customers in Tioga.
- June 15, 2022 – Spring thunderstorm event with high winds interrupted customers in Dawson, South Heart and Tappen.
- June 29-30, 2022 – Spring thunderstorm event interrupted customers in Burnstad, Linton and Napoleon.
- July 6-7, 2022 – Summer thunderstorm event interrupted customers in Alamo, Corinth, Glen Ullin, Hebron, Richardson and Taylor.
- July 9-10, 2022 – Summer thunderstorm event with high winds interrupted customers in Battleview, Bowbells, Lignite, Sentinel Butte and Tioga.
- July 18, 2022 - Summer thunderstorm event interrupted customers in Alamo, Corinth and Ellendale.
- August 15, 2022 – Summer thunderstorm event interrupted customers in Beach and Sentinel Butte.
- August 27, 2022 - Summer thunderstorm event interrupted customers in Beach and Sentinel Butte.
- November 14, 2022 – Winter storm event interrupted customers in Steele and Tappen.
- November 16, 2022 – Winter storm event interrupted customers in New Leipzig.
- December 15-17, 2022 – Winter storm event with high winds interrupted customers in Dawson, Fredonia, Judson, Lehr, New England, New Salem, Mott, Regent, Tappen and Wishek.
- December 22, 2022 – Winter storm event with high winds interrupted customers in Carson and Heil.
- December 24-25, 2022 – Winter storm event interrupted customers in Dunn Center, Dodge, Golden Valley, Halliday, Judson and New Salem.

Following are the 2022 supporting calculated data used to determine the current indices' calculations both with and without storm events:

Updated:		1/30/2023		ALL EVENTS	EXCLUDING STORM EVENTS
Year	2022		Year	NORTH DAKOTA	NORTH DAKOTA
Description			2022		
Max Minutes Available			52995545629		53024437062
Total Number of Sustained Interruptions			293		214
Total Number of Customers Interrupted (Sustained)			106057.00		60664.00
Total Number of Customers Interrupted (Momentary)			0		0
Total Number of Customers Served			100890		100890
Sum of Customer Interruption Durations (Customer Minutes Sustained)			32238371.07		3346937.95
Total No. of Customer Momentary Interruption Events					0
Customer Hours Service Availability	8760-(SAIDI/60)		8,778.6743		8,783.4471
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)		1.051		0.601
	Total Number of Customers Served				
2.2.1.2 System Average Interruption Duration Index (SAIDI)					
SAIDI =	Sum of Customer Interruption Durations (Customer Minutes Sustained)		319.54		33.17
(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)		303.97		55.17
(Min)	Total Number of Customers Interrupted (Sustained)				
2.2.1.6 Average Service Availability Index (ASAI)					
ASAI =	Customer Hours Service Availability		100.21%		100.27%
	Customer Hours Service Demand				

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