

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

February 25, 2019

Mr. Will Rosquist
Utility Division
Montana Public Service Commission
1701 Prospect Avenue
Helena, MT 59620

RE: Annual Electric Reliability Report-2018
ARM 38.5.8619

Dear Mr. Rosquist:

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc. herewith submits an original and ten copies of its Annual Report of Montana Electric Reliability Indices pursuant to ARM 38.5.8619.

The Reliability Indices provided in this report include the System Average Interruption Frequency Index (SAIFI), the System Average Interruption Duration Index (SAIDI) and the Customer Average Interruption Duration Index (CAIDI) for the state of Montana and by major district served by Montana-Dakota in Montana for calendar year 2018. Historical data for calendar years 2017 and 2016 is also included. All indices in this report include outage data for both the distribution system and the transmission system and the SAIDI and CAIDI indices are reported in minutes.

A graphical presentation of the SAIFI, SAIDI and CAIDI indices for 2016-2018 is provided in Attachment A, pages 1 and 2 with a categorization of the causes associated with service interruptions in 2016 through 2018 shown on Attachment A, page 3.

A comparison of all outages by cause is provided in Attachment A, page 3. The increase in 2018 is primarily attributed to an increase in storms, customer caused outages and those outages where a cause cannot be attributed to the outage.

Montana-Dakota's system did experience six storms in the Glendive district and three storms in the Wolf Point district that were classified as major storm events in 2018 where more than 10% of a major town's circuits were affected. The storm related outages in the Glendive district occurred on 4/29-4/30, 5/5, 5/23, 6/28 and 8/6 with the duration of the outages ranging from 8 minutes up to 3 hours and 24 minutes. The Wolf Point district's three major storm events

occurred on 6/28, 7/9 and 7/21, with a duration of the outages ranging from 38 minutes up to 21 hours. An explanation of storm related outages not classified as major storm events is provided in Attachment B, page 2.

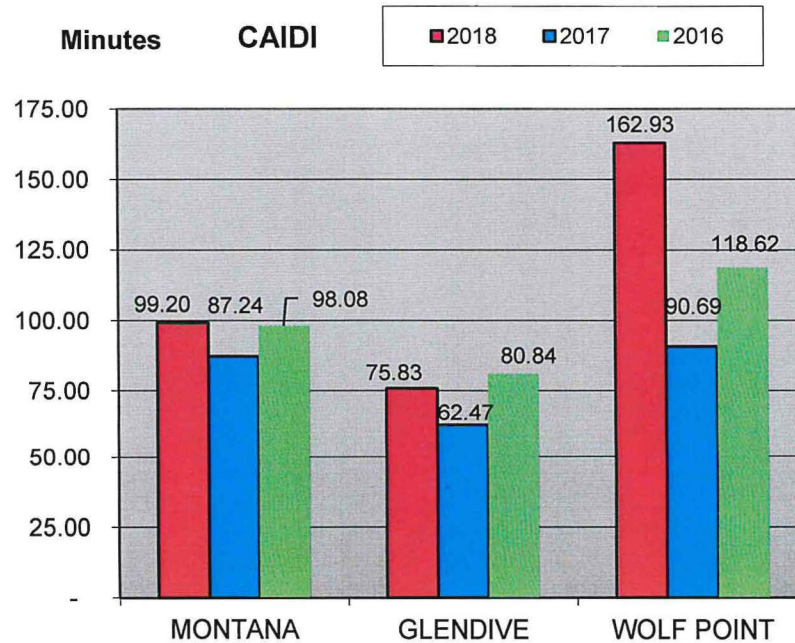
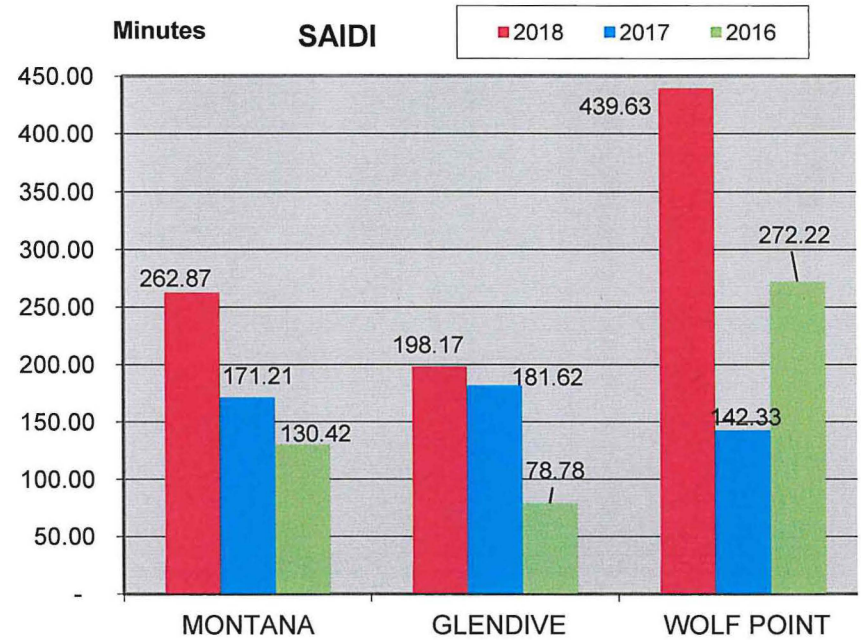
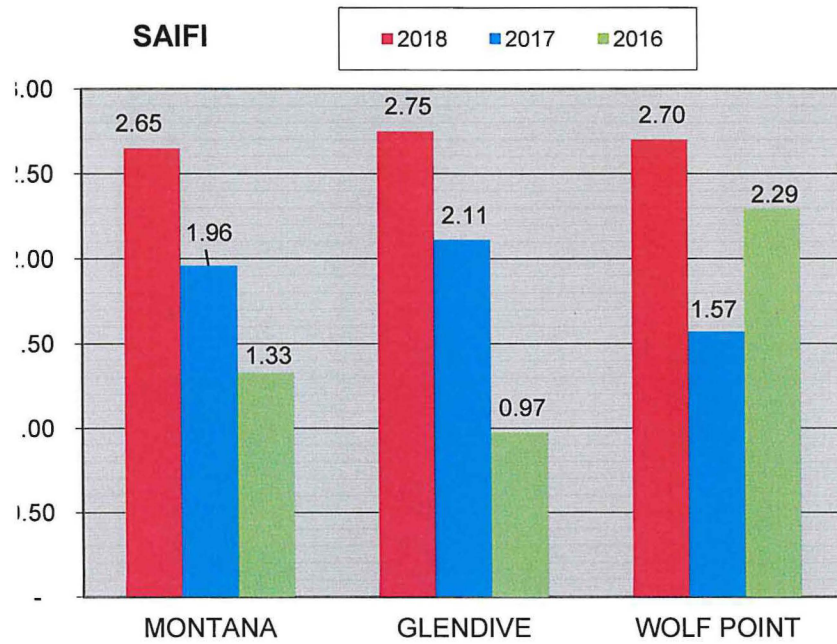
Please contact me with any questions regarding this report

Sincerely,

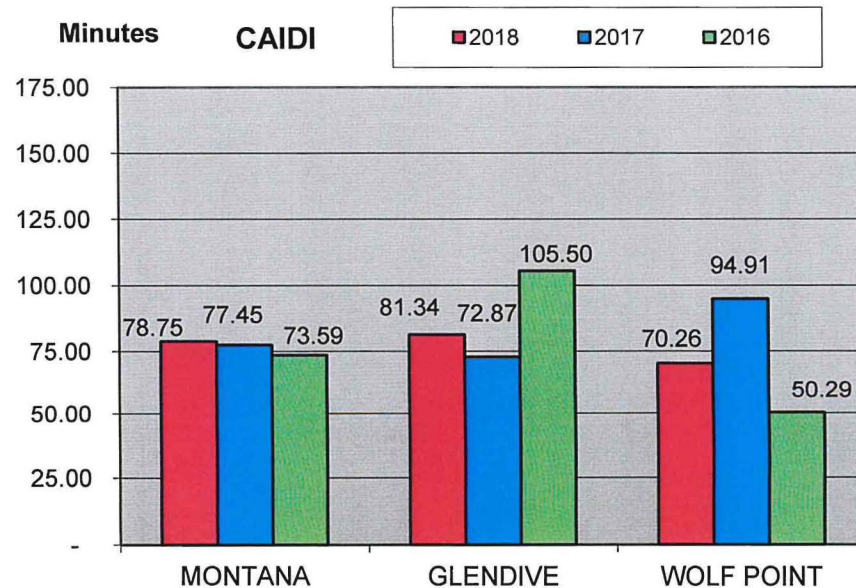
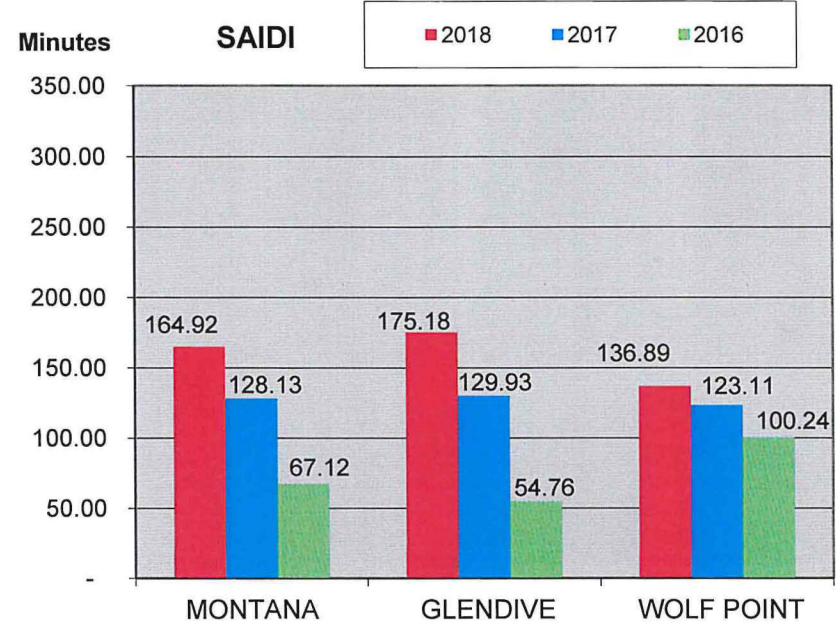
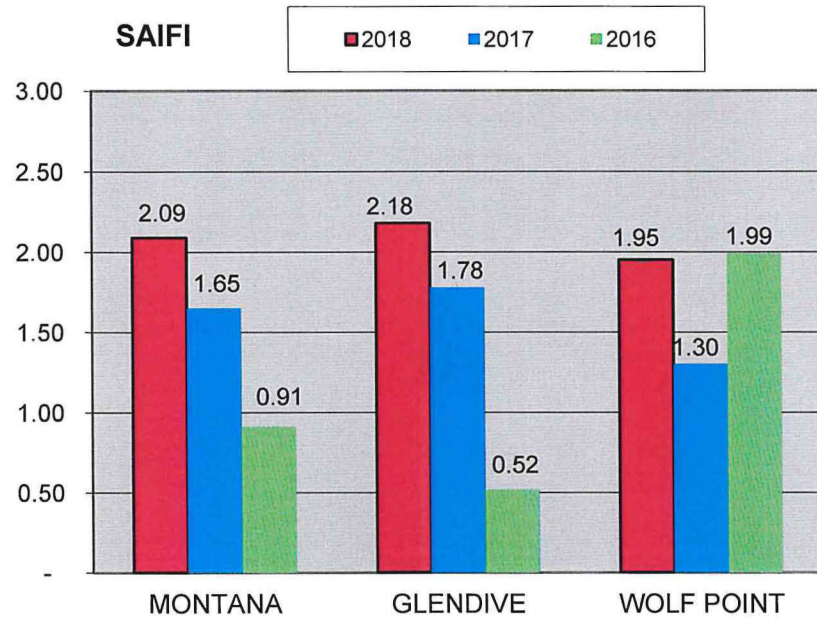


Tamie A. Aberle
Director of Regulatory Affairs

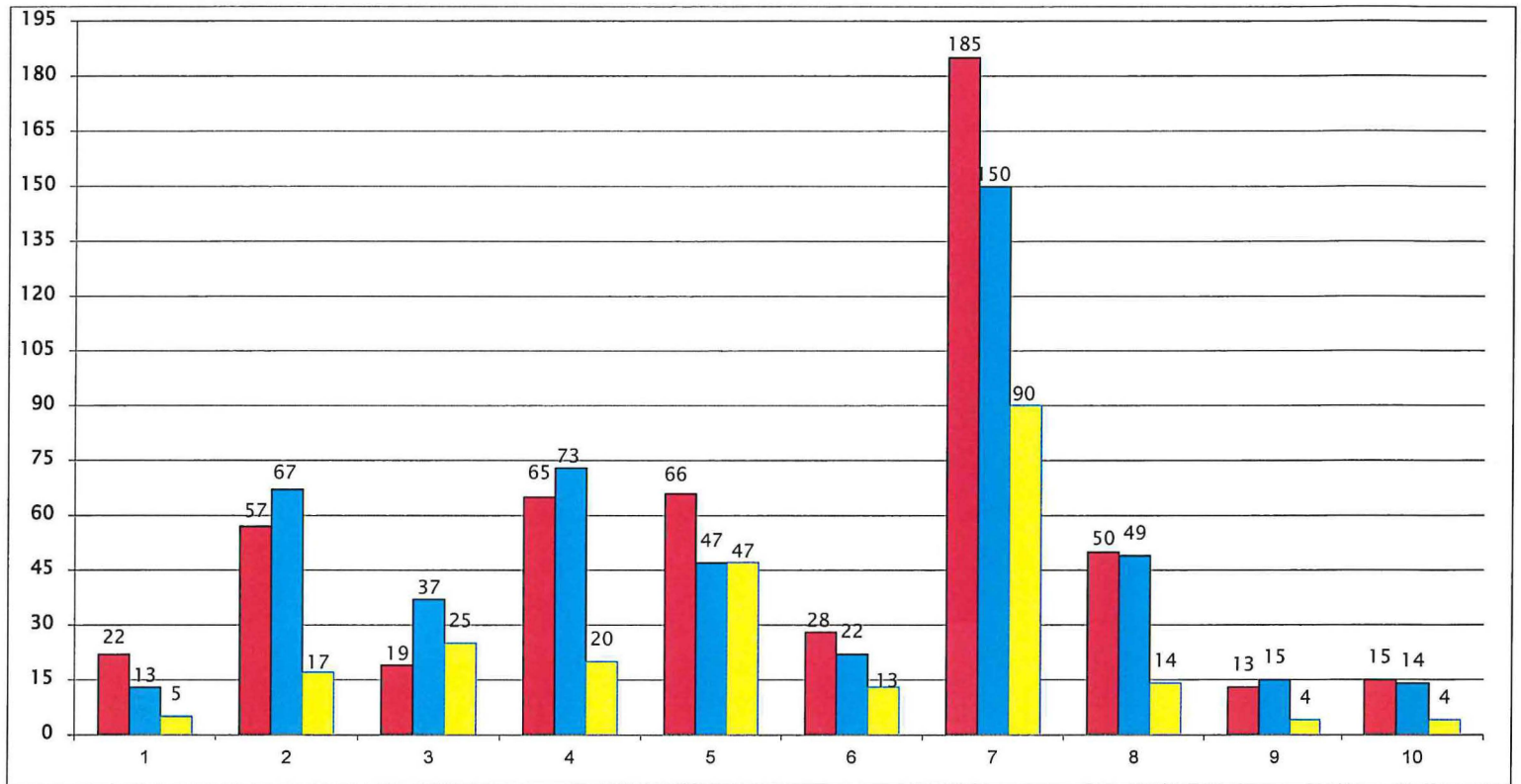
**MONTANA-DAKOTA UTILITIES CO.
RELIABILITY INDEX WITH IDENTIFIED STORM EVENT(S)
ELECTRIC UTILITY-MONTANA
2016-2018**



**MONTANA-DAKOTA UTILITIES CO.
RELIABILITY INDEX WITHOUT IDENTIFIED STORM EVENT(S)
ELECTRIC UTILITY-MONTANA
2016-2018**



MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY MONTANA
OUTAGES BY CAUSE
2016-2018



Distribution and Transmission Outages:

	2018	2017	2016
1) Customer	22	13	5
2) Equipment	57	67	17
3) Other	19	37	25
4) Planned	65	73	20
5) Storms	66	47	47
6) Trees/Vegetation	28	22	13
7) Unknown	185	150	90
8) Wildlife	50	49	14
9) Vehicle Collision	13	15	4
10) Improper Construction/Dig In	15	14	4
	520	487	239

**MONTANA-DAKOTA UTILITIES CO.
ANNUAL ELECTRIC RELIABILITY REPORT-MONTANA
CALENDAR YEAR 2018
MONTANA RULE 38.5.8619**

	Montana			Glendive District			Wolf Point District		
Reliability Index with Identified Storm Event(s)	2018	2017	2016	2018	2017	2016	2018	2017	2016
SAIFI (System Average Interruption Frequency Index)	2.65	1.96	1.33	2.75	2.16	0.97	2.70	1.57	2.29
SAIDI (System Average Interruption Duration Index)	262.87	171.21	130.42	198.17	181.62	78.78	439.63	142.33	272.22
CAIDI (Customer Average Interruption Duration Index)	99.20	87.24	98.08	75.83	62.47	80.84	162.93	90.69	118.62

	Montana			Glendive District			Wolf Point District		
Reliability Index-Without Identified Storm Event(s)	2018	2017	2016	2018	2017	2016	2018	2017	2016
SAIFI (System Average Interruption Frequency Index)	2.09	1.65	0.91	2.18	1.78	0.52	1.95	1.30	1.99
SAIDI (System Average Interruption Duration Index)	164.92	128.13	67.12	175.18	129.93	54.76	136.89	123.11	100.24
CAIDI (Customer Average Interruption Duration Index)	78.75	77.45	73.59	81.34	72.87	105.50	70.26	94.91	50.29

Outages caused by Major Storms/Events:

Glendive District: Six storms classified as major storm events in 2018

1. On 4/29/18 affecting 15 customers at Baker Fertil Prairie for 45 minutes, 1,300 customers in Glendive for 47 minutes, and 474 Wibaux customers for 2.75 hours.
2. On 4/30/18 1,300 Glendive customers were interrupted for 8 minutes and 4 Wibaux customers for 2.4 hours.
3. On 5/5/18 1647 customers in Forsyth, Hathaway, Rosebud and Miles City were affected for 1.1 hours.
4. On 5/23/18 affecting 1,946 Sidney customers for 28 minutes, 219 Flecher, Intake and Savage customers for 54 minutes and 4 Sidney customers for 3.3 hours.
5. On 6/28/18 affecting 595 Fairview customers for 37 minutes, 219 Savage, Fletcher and Intake customers for 2.25 hours and 4 customers in Sidney for 3.4 hours.
6. On 8/6/18 affecting 223 customers in Savage, Fletcher, and Intake for 26 minutes and 1,300 customers in Savage, Fletcher and Intake for 41 minutes.

Wolf Point District: Three storms classified as a major storm event in 2017

1. On 6/28/18 affecting 899 customers in Bainville and Culbertson for 38 minutes.
2. On 7/9/18 affecting several towns as follows:
 - 1,389 Plentywood customers for 21 hours
 - 158 Flaxville customers for 3 hours
 - 120 Outlook customers for 15.85 hours
 - 120 Redstone customers for 3.7 hours and 43 Redstone customers for 1.4 hours
 - 854 Scobey customers for 2.3 hours
 - 113 Antelope customers for 7.5 hours and
 - 542 customers in Froid, Homestead, and Medicine Lake for 2.3 hours.
3. On 7/21/18 affecting 64 Poplar Oil Field and Reserve customers for 2.5 hours.

Montana-Dakota Utilities Co.
Electric Utility – Montana
Outage Data Information
2018

The following storm outages, while not classified as a major storm events by definition, did affect reliability indices in calendar year 2018.

Specific storm related outages on the transmission system not classified as a major storm event affecting distribution substations included:

Fairview

- 6/28/18-Storm related weather and wind

Fletcher

- 8/6/18-Storm related weather and wind

Hi-Line Truck

- 5/23/18-Storm related weather and wind

KRCM Savage

- 5/23/18-Storm related weather and wind

Sidney East

- 6/30/18-Storm related weather and wind