



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

February 22, 2017

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

RE: Annual Electric Reliability Report-2016
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 2016. Historical data for calendar years 2015 and 2014 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 2014-2016 is provided in Attachment A, pages 1 and 2 with a categorization of the causes associated with service interruptions in 2014 through 2016 shown on Attachment A, page 3. In 2016, the outage numbers are attributed primarily to major storms throughout the service territory and planned outages necessary to replace conductors, transformers, regulators switches, poles, insulators, ties and other equipment. Please refer to Attachment B for the index data.

Montana-Dakota's system did experience ten storms in the Glendive district and five storms in the Wolf Point district that were classified as major storm events in 2016 where more than 10% of a major town's circuits were affected. The outages in the Glendive district occurred on 2/7, 2/18, 4/27, 6/11, 6/24, 7/9, 10/3, 10/4, 12/16 and 12/25 with the duration of the outages ranging from 14 minutes up to 8.7 hours. The Wolf Point district's five major storm events occurred on 6/24, 7/16, 7/17, 8/18, with the duration of the outages ranging from 3 hours and 13 minutes up to 14 hours and 22 minutes. 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,

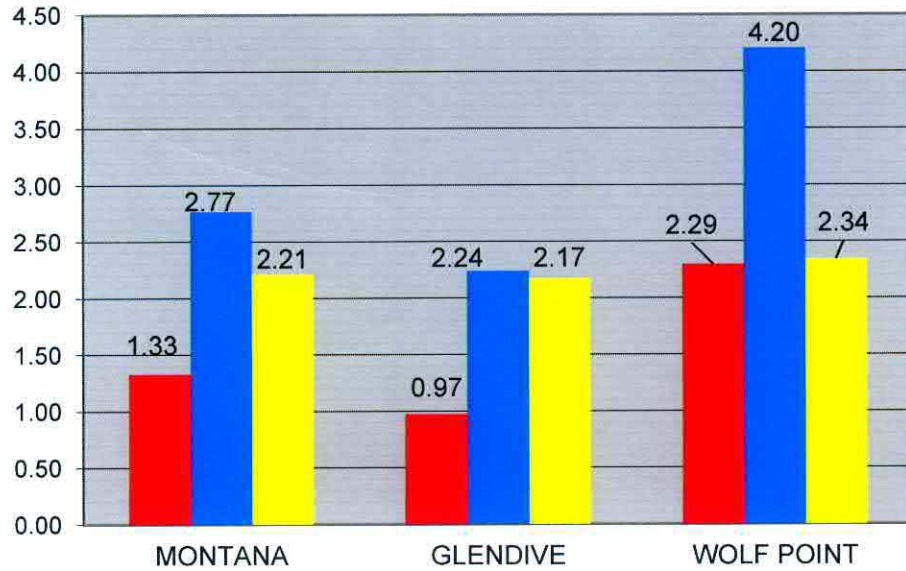
A handwritten signature in blue ink that reads 'Tamie A. Aberle'.

Tamie A. Aberle
Director of Regulatory Affairs

**MONTANA-DAKOTA UTILITIES CO.
RELIABILITY INDEX WITH IDENTIFIED STORM EVENT(S)
ELECTRIC UTILITY-MONTANA
2014-2016**

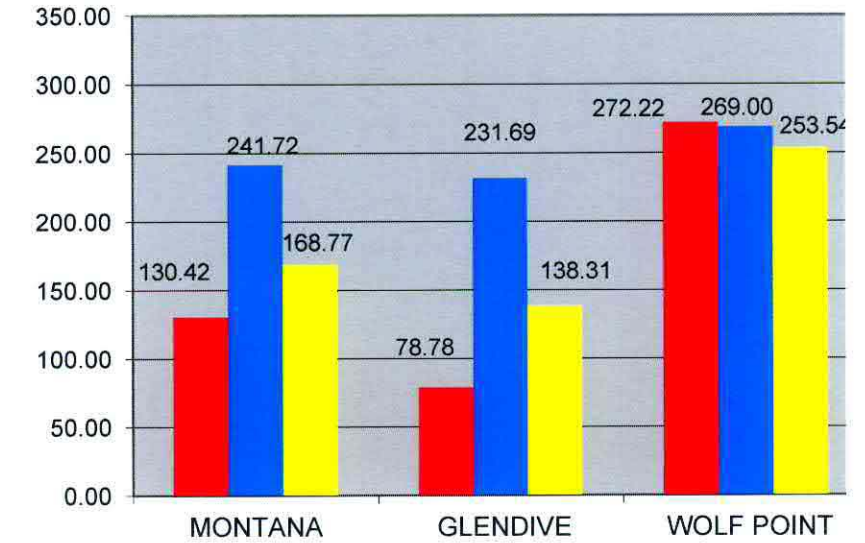
SAIFI

■ 2016 ■ 2015 ■ 2014



SAIDI

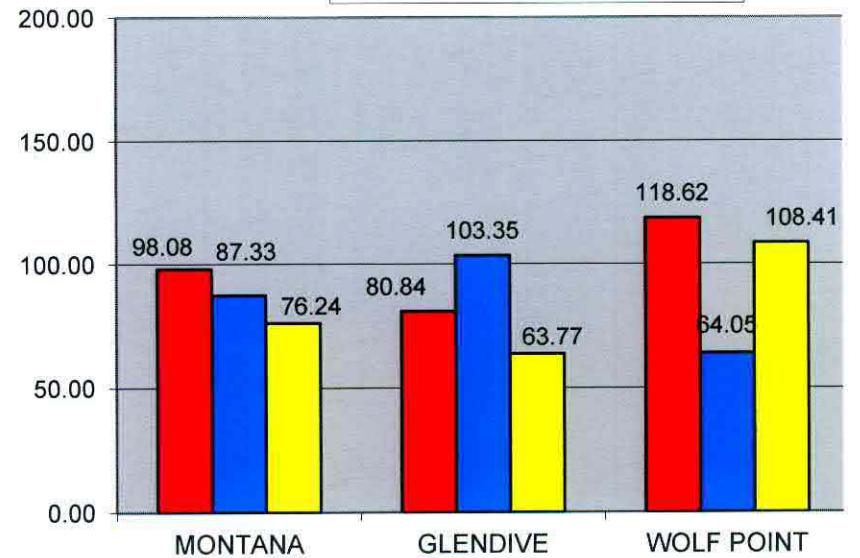
■ 2016 ■ 2015 ■ 2014



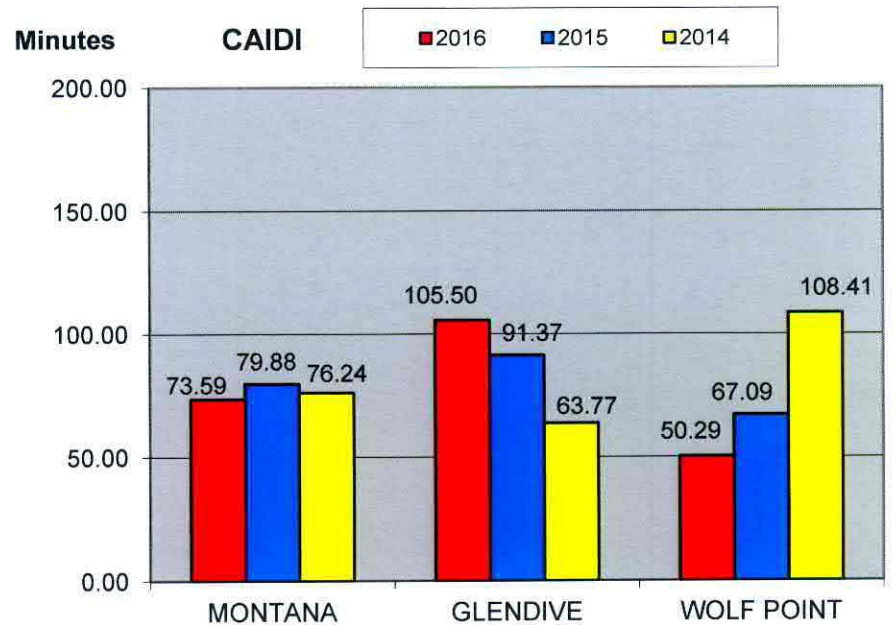
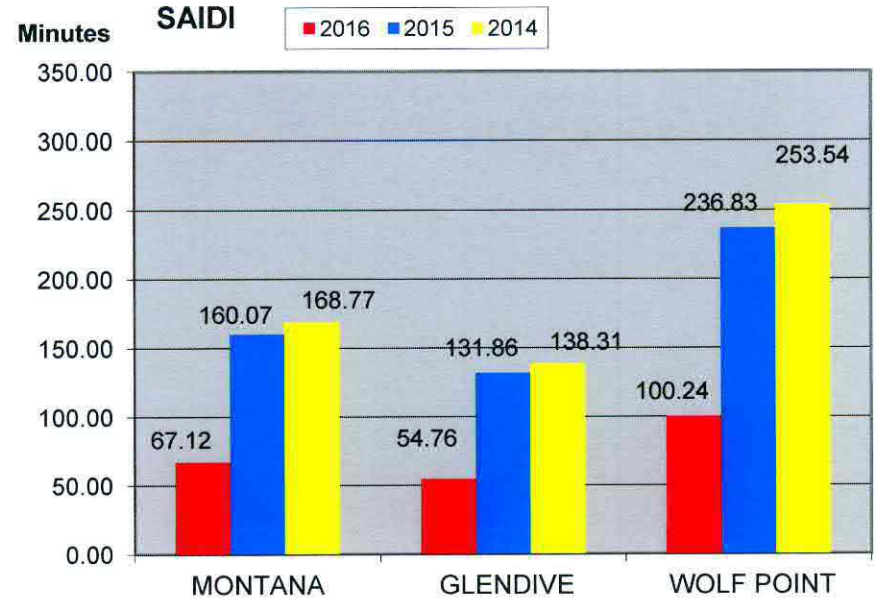
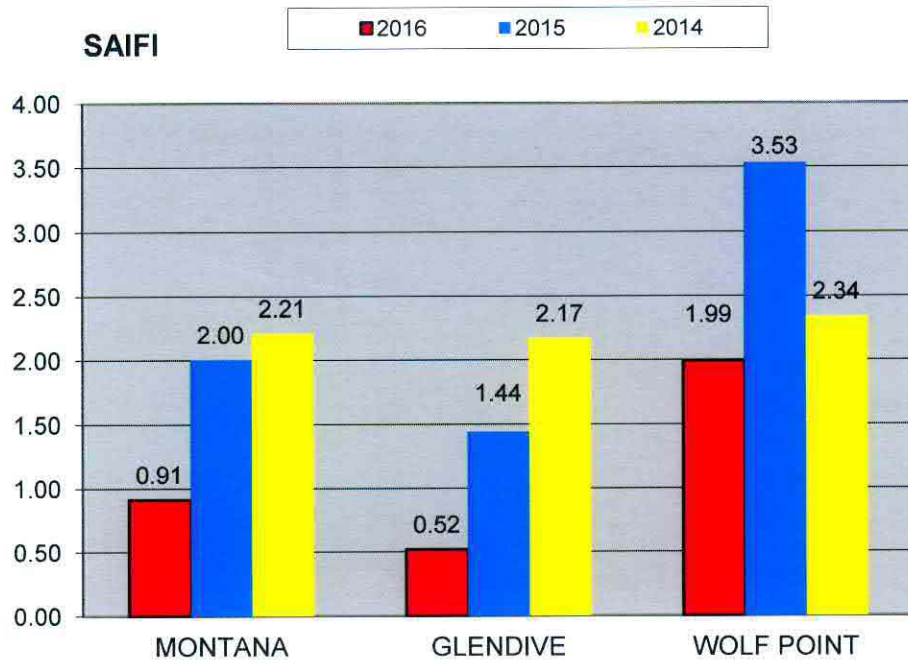
CAIDI

CAIDI

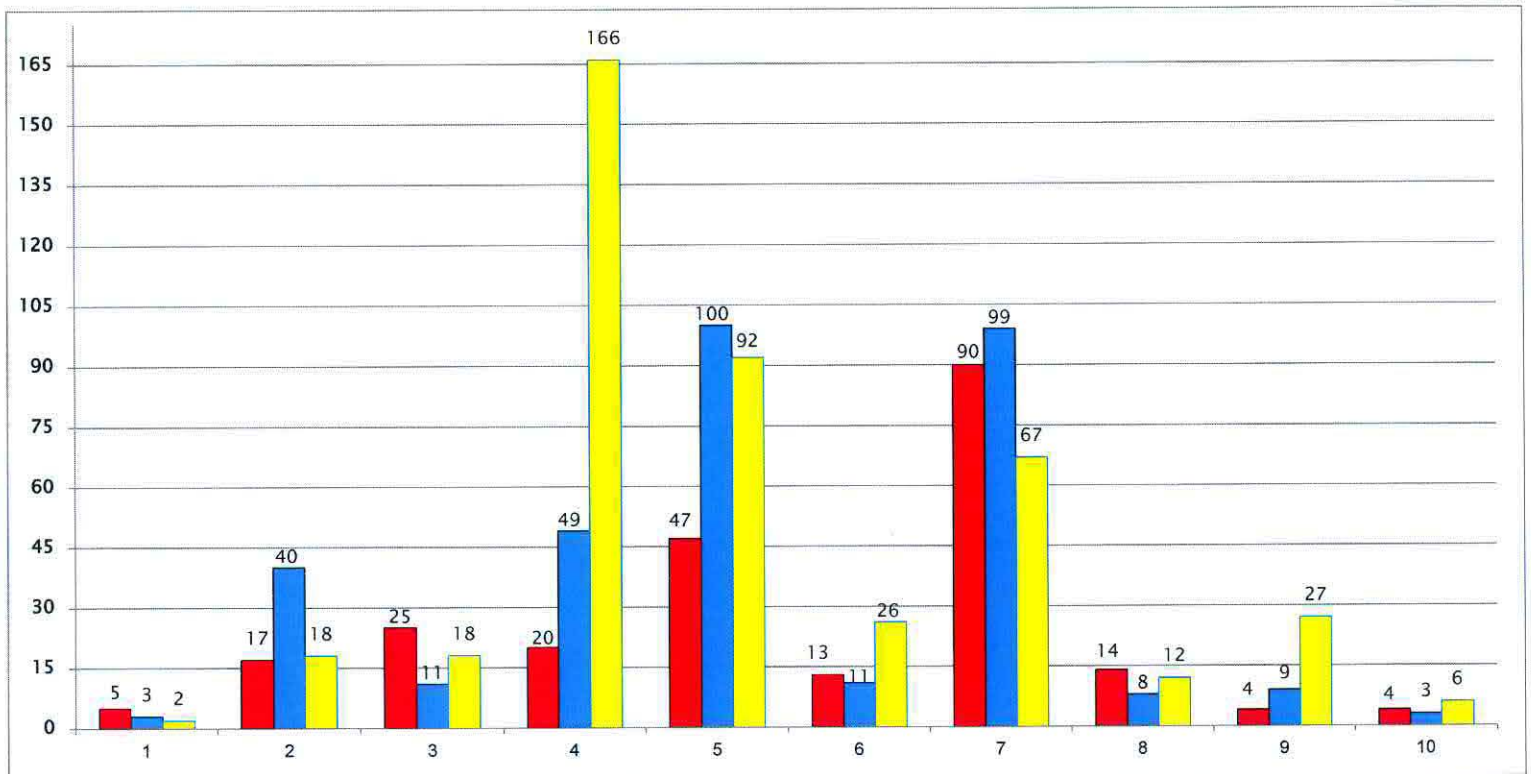
■ 2016 ■ 2015 ■ 2014



**MONTANA-DAKOTA UTILITIES CO.
RELIABILITY INDEX WITHOUT IDENTIFIED STORM EVENT(S)
ELECTRIC UTILITY-MONTANA
2014-2016**



**MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY MONTANA
OUTAGES BY CAUSE
2014-2016**



Distribution and Transmission Outages:

	2016	2015	2014
1) Customer	5	3	2
2) Equipment	17	40	18
3) Other	25	11	18
4) Planned	20	49	166
5) Storms	47	100	92
6) Trees/Vegetation	13	11	26
7) Unknown	90	99	67
8) Wildlife	14	8	12
9) Vehicle Collison	4	9	27
10) Improper Construction/Dig In	4	3	6
	239	333	434

**MONTANA-DAKOTA UTILITIES CO.
ANNUAL ELECTRIC RELIABILITY REPORT-MONTANA
CALENDAR YEAR 2016
MONTANA RULE 38.5.8619**

Reliability Index with Identified Storm Event(s)	Montana			Glendive District			Wolf Point District		
	2016	2015	2014	2016	2015	2014	2016	2015	2013
SAIFI (System Average Interruption Frequency Index)	1.33	2.77	2.21	0.97	2.24	2.17	2.29	4.20	2.34
SAIDI (System Average Interruption Duration Index)	130.42	241.72	168.77	78.78	231.70	138.31	272.22	269.00	253.54
CAIDI (Customer Average Interruption Duration Index)	98.08	87.33	76.24	80.84	103.35	63.77	118.62	64.06	108.41

Reliability Index-Without Identified Storm Event(s)	Montana			Glendive District			Wolf Point District		
	2016	2015	2014	2016	2015	2014	2016	2015	2013
SAIFI (System Average Interruption Frequency Index)	0.91	2.00	2.21	0.52	1.44	2.17	1.99	3.53	2.34
SAIDI (System Average Interruption Duration Index)	67.12	160.07	168.77	54.76	131.86	138.31	100.24	236.83	253.54
CAIDI (Customer Average Interruption Duration Index)	73.59	79.88	76.24	105.50	91.38	63.77	50.29	67.09	108.41

Outages caused by Major Storms/Events:

Glendive District : Ten storms classified as major storm events in 2016

1. On 2/7/16 affecting 225 customers off of the Fletcher, Intake_Wapa, Savage, Sidney_Jet_Fuel for 6.8 hours.
2. On 2/18/16 affecting 1,054 customers in Baker for 3 hours and 20 minutes.
3. On 4/27/16 affecting 424 Wibaux customers for 54 minutes.
4. On 6/11/16 affecting 424 customers in Wibaux for 84 minutes.
5. On 6/24/16 affecting 225 customers in Fletcher, Intake_Wapa, Savage, Sidney_Jet_Fuel for 1.6 hours.
6. On 7/9/16 affecting 201 customers for 52 minutes in Savage and Sidney_Jet_Fuel, and 24 customers at Fletcher and Intake_WAPA for 8.7 hours.
7. On 10/3/16 a major storm in Plenvna, Plenvna_Saland_Crude, and Hiland_Crude for 60 minutes.
8. On 10/4/16 affecting 424 customers in Wibaux for 64 minutes.
9. On 12/16/16 affecting 1,287 customer in Baker for 14 minutes.
10. On 12/25/16 affecting 424 customers in Wibaux for 67 minutes.

Wolf Point District: Five storms classified as major storm events in 2016

1. On 6/24/16 a storm interrupted service to approximately 163 customers in Brockton and Poplar_Sprole for 4.3 hours.
2. On 6/24/16 a major storm interrupted service to 278 customers in Medicine Lake for 2 hours and 15 minutes, 224 customers in Froid for 3 hours and 25 minutes and 39 customers at Homestead for 14 hours and 22 minutes.
3. On 7/16 and 7/17 154 customers at Antelope and Reserve service was interrupted for 10.5 hours.
4. On 8/18/16 affecting 154 customers in Antelope and Reserve for 3 hours and 13 minutes.
5. On 8/18/16 affecting 455 customers at Poplar for 9 hours and 30 minutes.

Montana-Dakota Utilities Co.
Electric Utility – Montana
Outage Data Information
2016

The following storm outages, while not classified as a major storm events by definition, did affect reliability indices in calendar year 2016.

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

Baker-Cabin Cr. 3

- 7/28/16-Storm related weather and wind

Baker-Fertile PR

- 9/4/16-Storm related weather and wind
- 9/24/16-Storm related weather and wind

Wibaux-Wibaux Phil

- 2/19/16-Storm related weather and wind