



UTILITIES CO.

A Division of MDU Resources Group, Inc.

400 North Fourth Street

Bismarck, ND 58501

(701) 222-7900

July 27, 2016

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

Re: Case No. PU-16- _____
2016-2017 Avoided Costs Updates

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group Inc., herewith requests Commission approval to revise its Occasional Power Purchase Non-Time Differentiated Rate 95 and Parallel Generation Peaking Facility Purchase Rate 96 Time Differentiated. This filing is made in compliance with the Order in Case No. 10,000 and in accordance with the Cogeneration and Small Power Producer Rules, Section 69-09-07-09 of the North Dakota Administrative Code.

The methodology used to develop the proposed energy payments is consistent with the approved avoided cost rate tariffs. The proposed energy payments for Rates 95 and 96 were generated using Montana-Dakota's production costing model PLEXOS[®] for Power Systems (PLEXOS), reflecting a test year of July 2016 to June 2017. The proposed energy payments under Rates 95 and 96 reflect a decrease in the energy payment per Kwh attributable to a decrease in the forecasted Midcontinent Independent System Operators, Inc. (MISO) market prices and natural gas prices from those included in the currently approved energy payments. The proposed energy payments are shown on Attachment A.

Montana-Dakota is also proposing an update in the Capacity Payment applicable under the Rate 96 tariff as well a change to reflect capacity payments for contract lengths up to 20 years. The Capacity Payment rate is calculated in a manner consistent with the approved rates. The proposed capacity payment under Rate 96 reflects the projected levelized cost of a new peaking facility at an estimated cost of \$874/kW, adjusted to 2017 dollars. The workpapers supporting the proposed capacity payment are provided in Attachment B.

The proposed metering charges for Rates 95 and 96 reflect updated meter costs, including the carrying charge and maintenance expenses. The workpapers supporting the proposed metering charges are provided in Attachment C.

Included herein is a second set of the affected tariffs on which Montana-Dakota has indicated the revisions requested by lining through the existing language which the Company proposes to delete and clearly highlighting the new language proposed.

Montana-Dakota serves two customers under Rate 95 as of May 31, 2016. The proposed annual change in revenue, assuming the same customer loads and generation as the past twelve months, would be a decrease in energy payments of approximately \$12. A monthly history of the energy purchased under Rate 95 is included as Attachment D.

Montana-Dakota respectfully requests that the rate schedules set forth herein be approved with an effective date of service rendered on and after September 1, 2016.

Please refer all inquiries regarding this filing to:

Ms. Tamie A. Aberle
Director of Regulatory Affairs
Montana-Dakota Utilities Co.
400 North Fourth Street
Bismarck, ND 58501

Also, please send copies of all written inquiries, correspondence, and pleadings to:

Mr. Karl A. Liepitz
Senior Attorney
MDU Resources Group, Inc.
P. O. Box 5650
Bismarck, ND 58506-5650


The original and seven (7) copies of this Letter of Transmittal and tariffs have been provided to the North Dakota Public Service Commission.

Montana-Dakota submitted a check on January 8, 2016 to the North Dakota Public Service Commission for \$600 pursuant to the requirements of North Dakota Century Code Section 49-05-05. This payment will cover the filing fee associated with this update.

Montana-Dakota respectfully requests that this filing be accepted as being in full compliance with the filing requirements of this Commission.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed envelope.

Sincerely,



Tamie A. Aberle
Director of Regulatory Affairs

Attachments

cc: K. Liepitz



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.
400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
15th Revised Sheet No. 44
Canceling 14th Revised Sheet No. 44

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 1 of 2

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating occasional electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 100 Kw or less, that are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$0.05 per day
With instrument transformers: \$0.16 per day

Metering charge for three phase service: \$0.11 per day
With instrument transformers: \$0.28 per day

Energy delivered to and accepted by Company by a QF shall be paid for by Company in accordance with one of the following two options, elected by the QF:

1. Simultaneous Purchase and Sale:

Energy sales to QF - Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

Energy purchases by Company:

Energy Payment = 2.581¢ per Kwh

2. Net Billing:

Energy generated will be compensated on a net billing basis. The Company will install a meter to measure the energy generated by the QF. The Company will also install a meter to measure the energy consumed by the QF. Metered generation will be subtracted from the metered consumption for the billing period.

Date Filed: July 20, 2016

Effective Date:

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
13th Revised Sheet No. 44.1
Canceling 12th Revised Sheet No. 44.1

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 2 of 2

If metered generation is less than metered consumption, the QF will be billed the applicable retail rate. If metered generation is greater than the metered consumption, the QF will be paid for each Kwh an amount equal to:
2.581¢ per Kwh

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
3. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
4. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be at least one year but less than five years.
5. In order to qualify for the net billing option, the generating equipment and the load of the facility must be located at the same "physical site". "Physical site" shall mean on the same tract of land and the generator output must be physically connected to the load service entrance.
6. For general terms and conditions covering QF's, see Rate 140.
7. All services provided by the Company under this and all other schedules are governed by the rules and regulations approved by the North Dakota Public Service Commission. Rates charged hereunder may be modified by Company at any time by making a unilateral rate application with the North

Date Filed: July 20, 2016

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Director of Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
15th Revised Sheet No. 45
Canceling 14th Revised Sheet No. 45

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 1 of 3

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 1000 Kw or less, that operate as a peaking facility (defined below), and are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$ 0.15 per day
With instrument transformers: \$ 0.26 per day

Metering charge for three phase service: \$ 0.16 per day
With instrument transformers: \$ 0.33 per day

1. Capacity delivered to the Company:

Levelized payment for term of contract based on Table 1 below.

TABLE 1
Contract Length (YR.)

	5	10	15	20
\$/Kw-mo	7.619	7.619	7.619	7.619

Total capacity payment per month = Monthly capacity payments for a QF will be made pursuant to the applicable contract length from Table 1 presented above. Such payments shall be based upon the amount of qualifying capacity assigned to an eligible resource under BPM-011-Resource Adequacy of the MISO Tariff.

Capacity payments will be paid in the subsequent billing period.

Date Filed: July 27, 2016

Effective Date:

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.:



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
15th Revised Sheet No. 45.1
Canceling 14th Revised Sheet No. 45.1

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 2 of 3

2. Energy Payment:

ON-PEAK

2.605¢ per Kwh

OFF-PEAK

2.580¢ per Kwh

Peak Periods: The On-Peak Period is defined as those hours between 12 p.m. and 8 p.m. local time, Monday through Friday in the months of June through September. The Off-Peak Period is defined as all other hours. Definitions of On-Peak and Off-Peak periods are subject to change with change in the Company's system operating characteristics.

Energy Sales to Qualifying Facilities:

Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. Service under this schedule shall be on a simultaneous purchase and sale basis only.
3. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
4. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
5. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be five years or more.

Date Filed: July 27, 2016

Effective Date:

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.:

Tariffs Reflecting Proposed Changes



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
14th Revised Sheet No. 44
Canceling 13th Revised Sheet No. 44

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 1 of 2

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating occasional electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 100 Kw or less, that are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$0.05 per day
With instrument transformers: \$0.156 per day

Metering charge for three phase service: \$0.11 per day
With instrument transformers: \$0.278 per day

Energy delivered to and accepted by Company by a QF shall be paid for by Company in accordance with one of the following two options, elected by the QF:

1. Simultaneous Purchase and Sale:

Energy sales to QF - Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

Energy purchases by Company:

Energy Payment = 3.2962.581¢ per Kwh

2. Net Billing:

Energy generated will be compensated on a net billing basis. The Company will install a meter to measure the energy generated by the QF. The Company will also install a meter to measure the energy consumed by the QF. Metered generation will be subtracted from the metered consumption for the billing period.

Date Filed: July 7, 2015

Effective Date: Service rendered on and after October 1, 2015

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.: PU-15-481



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
12th Revised Sheet No. 44.1
Canceling 11th Revised Sheet No. 44.1

OCCASIONAL POWER PURCHASE Rate 95 NON-TIME DIFFERENTIATED

Page 2 of 2

If metered generation is less than metered consumption, the QF will be billed the applicable retail rate. If metered generation is greater than the metered consumption, the QF will be paid for each Kwh an amount equal to:

~~3.296~~2.581¢ per Kwh

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
2. The Company shall install appropriate metering facilities to record all flows of energy necessary to bill and pay in accordance with the charges and payments contained in this rate schedule.
3. The customer shall, with prior written consent of the Company, furnish, install and wire the necessary service entrance equipment, meter sockets, meter enclosure cabinets, or meter connection cabinets that may be required by the Company to properly meter usage and sales to the Company.
4. A written contract with the Company shall be signed stipulating the terms and conditions of the interconnection and sale of the electricity to the Company. The term of the contract hereunder shall be at least one year but less than five years.
5. In order to qualify for the net billing option, the generating equipment and the load of the facility must be located at the same "physical site". "Physical site" shall mean on the same tract of land and the generator output must be physically connected to the load service entrance.
6. For general terms and conditions covering QF's, see Rate 140.
7. All services provided by the Company under this and all other schedules are governed by the rules and regulations approved by the North Dakota Public Service Commission. Rates charged hereunder may be modified by Company at any time by making a unilateral rate application with the North Dakota Public Service Commission or its successor. The new rates shall be effective upon approval by the Commission.

Date Filed: July 7, 2015

Effective Date: Service rendered on and
after October 1, 2015

Issued By: Tamie A. Aberle
Director of Regulatory Affairs

Case No.: PU-15-481



Montana-Dakota Utilities Co.

A Division of MDU Resources Group, Inc.

400 N 4th Street
Bismarck, ND 58501

State of North Dakota Electric Rate Schedule

NDPSC Volume 4
14th Revised Sheet No. 45
Canceling 13th Revised Sheet No. 45

PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 1 of 3

Availability:

To any qualifying cogeneration and small power production facilities for the purpose of generating electric energy in parallel with the Company's system. This schedule is applicable to cogeneration and small power production facilities with a design capacity of 1000 Kw or less, that operate as a peaking facility (defined below), and are Qualifying Facilities (QF) as defined under 18 CFR, Part 292.

Rate:

Metering charge for single phase service: \$ 0.15 per day
With instrument transformers: \$ 0.256 per day

Metering charge for three phase service: \$ 0.16 per day
With instrument transformers: \$ 0.323 per day

1. Capacity delivered to the Company:

_____ Levelized payment for term of contract based on Table 1 below.

TABLE 1
Contract Length (YR.)

	5	10	15	20	25	30	35
\$/Kw-mo	8.063	8.598	9.111	9.596	10.048	10.466	10.846
	7.619	7.619	7.619	7.619			

Total capacity payment per month = Monthly capacity payments for a QF will be made pursuant to the applicable contract length from Table 1 presented above. Such payments shall be based upon the amount of qualifying capacity assigned to an eligible resource under BPM-011-Resource Adequacy of the MISO Tariff.

Capacity payments will be paid in the subsequent billing period.

Date Filed: July 7, 2015

Effective Date: Service rendered on and after October 1, 2015

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NDPSC Volume 4
14th Revised Sheet No. 45.1
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PARALLEL GENERATION PEAKING FACILITY PURCHASE Rate 96 TIME DIFFERENTIATED

Page 2 of 3

2. Energy Payment:

ON-PEAK

~~2.9742.605~~¢ per Kwh

OFF-PEAK

~~3.2892.580~~¢ per Kwh

Peak Periods: The On-Peak Period is defined as those hours between 12 p.m. and 8 p.m. local time, Monday through Friday in the months of June through September. The Off-Peak Period is defined as all other hours. Definitions of On-Peak and Off-Peak periods are subject to change with change in the Company's system operating characteristics.

Energy Sales to Qualifying Facilities:

Service provided to such customers by the Company shall be billed at the appropriate rate, by class of customers (i.e., residential, small and general electric service, etc.) that is currently on file with the Commission.

General Terms and Conditions:

1. Change of Rates: This schedule shall be reviewed annually, updated if necessary, and revised upon the Commission's approval.
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Date Filed: July 7, 2015

Effective Date: Service rendered on and after October 1, 2015

Issued By: Tamie A. Aberle
Director – Regulatory Affairs

Case No.: PU-15-481

Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Lambda
July 2016 through June 2017

Month	Year	Lambda		
		On-Peak \$/MWh	Off-Peak \$/MWh	Total \$/MWh
July	2016	\$29.86	\$29.85	\$29.85
August	2016	28.09	28.06	28.07
September	2016	22.08	21.98	22.00
October	2016		22.48	22.48
November	2016		22.98	22.98
December	2016		28.54	28.54
January	2017		31.03	31.03
February	2017		30.70	30.70
March	2017		25.21	25.21
April	2017		21.61	21.61
May	2017		23.05	23.05
June	2017	24.16	24.16	24.16
Average		\$26.05	\$25.80	\$25.81

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Calculation of Capacity Payments
July 2016 through June 2017**

Rate 96

Monthly Capacity Payments:	\$7.619	\$/kW-Month
Capital cost of combustion turbine	\$874	
Escalation rate	3%	
Levelized Fixed Charge	10.156%	1/

Rate 96 Capacity Payment formula: $= \$874 \times 1.03^{(2017-2016)} \times .10156 / 12$

1/ See Attachment B pages 2-4. Turbine with 35-year book life.

**Montana-Dakota Utilities Co.
Electric Utility- North Dakota
2016 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

Summary of Results

Sum of Present Values 1/	1.204711
Capital Recovery Factor 2/	0.084301
Levelized Fixed Charge 3/	<u>10.156%</u>

Assumptions

ROR	7.827%
ROR with taxes	11.205%
Federal Tax Rate	35.000%
State Tax Rate	4.310%
Combined Federal/State Tax Rate	37.8015%
1 - Tax Rate	62.1985%
Service Life of Asset (in years)	35
Tax Life (in years - 5, 7, 10, 15, 20 , or 39)	15

1/ Sum of annual net present values.

2/ $((+ROR*(1+ROR)^{book\ life})/((1+ROR)^{book\ life}-1))$.

3/ Product of annual present value x capital recovery factor.

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
2016 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
	Rev. Requ.		Book		Ad Valorem	Total	Present		Accum.		Tax	Deferred	
Year	As % (Net	Return	Depr.	O&M	Tax	Charge	Value	Present	Present	LFCR	Depr.	Income	
	Investment)						Factor	Value	Value		Accel.	Tax	
1	1	1.000	0.11205	0.02857	0.00000	0.00446	0.14508	0.92741	0.13455	0.13455	0.14508	0.05000	0.00810
2	2	0.963	0.10794	0.02857	0.00000	0.00446	0.14097	0.86009	0.12125	0.25580	0.14310	0.09500	0.02511
3	3	0.910	0.10193	0.02857	0.00000	0.00446	0.13496	0.79766	0.10765	0.36345	0.14059	0.08550	0.02152
4	4	0.860	0.09631	0.02857	0.00000	0.00446	0.12934	0.73976	0.09568	0.45913	0.13809	0.07700	0.01831
5	5	0.813	0.09106	0.02857	0.00000	0.00446	0.12409	0.68606	0.08513	0.54427	0.13569	0.06930	0.01540
6	6	0.769	0.08613	0.02857	0.00000	0.00446	0.11917	0.63626	0.07582	0.62009	0.13343	0.06230	0.01275
7	7	0.727	0.08150	0.02857	0.00000	0.00446	0.11454	0.59008	0.06758	0.68767	0.13130	0.05900	0.01150
8	8	0.687	0.07701	0.02857	0.00000	0.00446	0.11004	0.54724	0.06022	0.74789	0.12929	0.05900	0.01150
9	9	0.647	0.07252	0.02857	0.00000	0.00446	0.10555	0.50752	0.05357	0.80146	0.12738	0.05910	0.01154
10	10	0.607	0.06803	0.02857	0.00000	0.00446	0.10106	0.47068	0.04757	0.84903	0.12555	0.05900	0.01150
11	11	0.567	0.06354	0.02857	0.00000	0.00446	0.09657	0.43651	0.04215	0.89119	0.12379	0.05910	0.01154
12	12	0.527	0.05904	0.02857	0.00000	0.00446	0.09208	0.40483	0.03727	0.92846	0.12210	0.05900	0.01150
13	13	0.487	0.05455	0.02857	0.00000	0.00446	0.08759	0.37544	0.03288	0.96134	0.12048	0.05910	0.01154
14	14	0.447	0.05006	0.02857	0.00000	0.00446	0.08309	0.34819	0.02893	0.99027	0.11891	0.05900	0.01150
15	15	0.407	0.04557	0.02857	0.00000	0.00446	0.07860	0.32291	0.02538	1.01566	0.11741	0.05910	0.01154
16	16	0.367	0.04107	0.02857	0.00000	0.00446	0.07411	0.29947	0.02219	1.03785	0.11596	0.02950	0.00035
17	17	0.338	0.03783	0.02857	0.00000	0.00446	0.07086	0.27774	0.01968	1.05753	0.11460	0.00000	(0.01080)
18	18	0.320	0.03584	0.02857	0.00000	0.00446	0.06887	0.25758	0.01774	1.07527	0.11336	0.00000	(0.01080)
19	19	0.302	0.03385	0.02857	0.00000	0.00446	0.06688	0.23888	0.01598	1.09125	0.11222	0.00000	(0.01080)
20	20	0.284	0.03186	0.02857	0.00000	0.00446	0.06489	0.22154	0.01438	1.10562	0.11116	0.00000	(0.01080)
21	21	0.267	0.02987	0.02857	0.00000	0.00446	0.06290	0.20546	0.01292	1.11855	0.11019	0.00000	(0.01080)
22	22	0.249	0.02788	0.02857	0.00000	0.00446	0.06091	0.19054	0.01161	1.13015	0.10928	0.00000	(0.01080)
23	23	0.231	0.02589	0.02857	0.00000	0.00446	0.05892	0.17671	0.01041	1.14056	0.10843	0.00000	(0.01080)

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
2016 Avoided Cost Rate Update
Levelized Fixed Charge Rate - CT**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
	Rev. Requ. As % (Net Investment)	Return	Book Depr.	O&M	Ad Valorem Tax	Total Charge	Present Value Factor	Present Value	Accum. Present Value	LCFR	Tax Depr. Accel.	Deferred Income Tax	
Year													
24	24	0.213	0.02389	0.02857	0.00000	0.00446	0.05693	0.16389	0.00933	1.14989	0.10764	0.00000	(0.01080)
25	25	0.195	0.02190	0.02857	0.00000	0.00446	0.05494	0.15199	0.00835	1.15824	0.10690	0.00000	(0.01080)
26	26	0.178	0.01991	0.02857	0.00000	0.00446	0.05294	0.14096	0.00746	1.16570	0.10621	0.00000	(0.01080)
27	27	0.160	0.01792	0.02857	0.00000	0.00446	0.05095	0.13072	0.00666	1.17237	0.10556	0.00000	(0.01080)
28	28	0.142	0.01593	0.02857	0.00000	0.00446	0.04896	0.12124	0.00594	1.17830	0.10495	0.00000	(0.01080)
29	29	0.124	0.01394	0.02857	0.00000	0.00446	0.04697	0.11244	0.00528	1.18358	0.10437	0.00000	(0.01080)
30	30	0.107	0.01195	0.02857	0.00000	0.00446	0.04498	0.10427	0.00469	1.18827	0.10383	0.00000	(0.01080)
31	31	0.089	0.00996	0.02857	0.00000	0.00446	0.04299	0.09670	0.00416	1.19243	0.10332	0.00000	(0.01080)
32	32	0.071	0.00796	0.02857	0.00000	0.00446	0.04100	0.08968	0.00368	1.19611	0.10284	0.00000	(0.01080)
33	33	0.053	0.00597	0.02857	0.00000	0.00446	0.03901	0.08317	0.00324	1.19935	0.10239	0.00000	(0.01080)
34	34	0.036	0.00398	0.02857	0.00000	0.00446	0.03701	0.07714	0.00286	1.20221	0.10196	0.00000	(0.01080)
35	35	0.018	0.00199	0.02857	0.00000	0.00446	0.03502	0.07154	0.00251	1.20471	0.10156	0.00000	(0.01080)

- (1) Prior year's Net investment - Book Depreciation - Deferred Income Tax.
- (2) Return (adjusted for taxes) x Net Investment.
- (3) Depreciation rate based on the life of the investment.
- (4) Distribution O&M expense as percent of distribution plant.
- (5) Ad valorem tax rate on distribution plant.
- (6) Sum of return, depreciation, O&M and ad valorem taxes.
- (7) Present value factor reflecting overall rate of return.
- (8) Present value factor x total charge.
- (9) Accumulated present value.
- (10) Levelized fixed charge rate = accumulated present value x $((+ROR*(1+ROR)^{book\ life})/((1+ROR)^{book\ life}-1))$
- (11) Tax depreciation rates for a CT uses a 15 year tax life.
- (12) (Tax life - book life) x tax rate.

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Calculation of Metering Charges - Rate 95
2016 - 2017 Avoided Cost Updates**

Rate 95	Single-Phase		Three-Phase	
	Without Instrument Transformer	With Instrument Transformer	Without Instrument Transformer	With Instrument Transformer
Estimated Meter Cost 1/	\$100	\$487	\$303	\$884
Levelized Fixed Charge Rate 2/	10.490%	10.490%	10.490%	10.490%
Annual Carrying Cost/Meter	\$10.49	\$51.09	\$31.78	\$92.73
Annual O&M Expense	6.37	6.37	9.56	9.56
Total Annual Cost of Meter	<u>\$16.86</u>	<u>\$57.46</u>	<u>\$41.34</u>	<u>\$102.29</u>
Calculated Monthly Charge	\$1.41	\$4.79	\$3.45	\$8.52
Monthly Metering Charge	\$1.40	\$4.80	\$3.50	\$8.50
Daily Metering Charge	0.05	0.16	0.11	0.28

1/ Including installation and testing.

2/ Reflective of capital costs, depreciation and taxes.

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Calculation of Metering Charges - Rate 96
2016 - 2017 Avoided Cost Updates**

Rate 96	Single-Phase TOD, Demand		Three-Phase TOD, Demand	
	Without Instrument Transformer	With Instrument Transformer	Without Instrument Transformer	With Instrument Transformer
Estimated Meter Cost 1/	\$331	\$718	\$341	\$922
Levelized Fixed Charge Rate 2/	10.490%	10.490%	10.490%	10.490%
Annual Carrying Cost/Meter	\$34.72	\$75.32	\$35.77	\$96.72
Annual O&M Expense	19.11	19.11	22.30	22.30
Total Annual Cost of Meter	<u>\$53.83</u>	<u>\$94.43</u>	<u>\$58.07</u>	<u>\$119.02</u>
Calculated Charge	\$4.49	\$7.87	\$4.84	\$9.92
Monthly Metering Charge	\$4.50	\$7.90	\$4.80	\$9.90
Daily Metering Charge	0.15	0.26	0.16	0.33

1/ Including installation and testing.

2/ Reflective of capital costs, depreciation and taxes.

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota**

**Rate 95 Customer History
Twelve Months Ended May 31, 2016**

	<u>Kwh Billed Customers 1/</u>	<u>Kwh Purchased under Rate 95</u>
June 2015	2,764	6
July	2,006	636
August	1,663	570
September	1,719	483
October	3,737	6
November	8,577	5
December	14,919	2
January 2016	23,377	0
February	16,656	1
March	12,457	3
April	11,183	2
May	6,840	7
Total	<u>105,898</u>	<u>1,721</u>

1/ Energy billed customers under other service's applicable tariff