

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.

Before the Public Service Commission of North Dakota

Case No. PU-16-____

Direct Testimony
of
Tamie A. Aberle

1 **Q. Would you please state your name and business address?**

2 A. Yes. My name is Tamie A. Aberle, and my business address is 400
3 North Fourth Street, Bismarck, North Dakota 58501.

4 **Q. What is your position with Montana-Dakota Utilities Co.?**

5 A. I am the Director of Regulatory Affairs for Montana-Dakota Utilities
6 Co. (Montana-Dakota), a Division of MDU Resources Group, Inc.

7 **Q. What are your responsibilities as the Director of Regulatory Affairs?**

8 A. I am responsible for the development and implementation of
9 Company objectives and policies with respect to rate structure, pricing
10 policies, cost of service studies, fuel cost adjustments, purchased gas cost
11 adjustments and gas tracking adjustments in each of the jurisdictions in
12 which Montana-Dakota operates.

13 **Q. Would you please outline your educational and professional
14 background?**

15 A. I graduated from Moorhead State University, Moorhead, Minnesota
16 in 1982 with a Bachelor of Science degree in Accounting. I began my
17 career with Montana-Dakota in 1983 in the Regulatory Affairs Department,

1 holding several positions within the Department before attaining my
2 current position in 2014.

3 **Q. Have you testified in other proceedings before regulatory bodies?**

4 A. Yes. I have previously presented testimony before this
5 Commission, the Public Service Commissions of Montana and Wyoming,
6 the Public Utilities Commissions of Minnesota and South Dakota and the
7 Federal Energy Regulatory Commission.

8 **Q. What is the purpose of your testimony in this proceeding?**

9 A. The purpose of my testimony is to present the effect of the
10 proposed revenue requirement, as identified by Mr. Jacobson in his direct
11 testimony, on each of the Company's electric rates, including how the
12 distribution of the revenue requirement was made among the various
13 classes of customers served based on the embedded class cost of service
14 study sponsored by Mr. Chapman. In addition, my testimony will discuss
15 the extent to which Montana-Dakota is proposing changes in rate design
16 and the calculation of the Renewable Resource Adjustment (Renewable
17 Rider) and Transmission Cost Adjustment (TCA) per unit charges
18 proposed to be implemented concurrent with final rates.

19 **Q. What statements and exhibits are you sponsoring in this**
20 **proceeding?**

21 A. I am sponsoring Statement N, Exhibit No.__(TAA-1) and Exhibit
22 No.__(TAA-2).

1 Q. What is the total revenue effect of the proposed electric rate
2 changes?

3 A. The proposed interim revenue deficiency of \$13,027,771, identified
4 by Mr. Jacobson represents an increase of 6.5 percent based on the
5 Projected 2017 interim level of sales revenues, while the final proposed
6 rates, including the changes in the Rate Riders will produce additional
7 revenues of \$13,381,639 or an increase of 6.6 percent annually based on
8 projected electric consumption and total revenues. Exhibit No. __ (TAA-1)
9 represents summaries by rate classification of the proposed interim and
10 final revenue increase on pages 1 and 2 respectively. The exhibit shows
11 the rate class along with the revenues calculated under the present and
12 proposed rates. The amount and percentage in-crease are also shown for
13 the proposed revenue increase.

14 Q. Would you please explain Exhibit No. ____ (TAA-2)?

15 A. Yes. Exhibit No. ____ (TAA-2), page 1 depicts a bill comparison
16 based on typical monthly consumption levels for an annual period for
17 Residential customers. As shown in the comparison, the proposed rate
18 structure will result in an average increase, based on final proposed rates,
19 of approximately ~~\$9.60~~^{\$7.45} per month for the typical Residential customer
20 using 980 Kwh on an annual basis. Exhibit No. ____ (TAA-2), page 2
21 provides a similar bill comparison for the interim increase.

22 Q. What is the percentage of the proposed increase by class of
23 customer?

1 A. The proposed increase to each of the classes is shown in the table
2 below:

Customer Class	Final Revenue Increase *	
	\$	%
Residential Service	\$7,444,431	9.4%
Small General Service	1,464,300	10.9%
Large General Service	4,149,484	4.0%
Municipal Lighting	18,755	1.1%
Municipal Pumping	292,183	9.7%
Outdoor Lighting	12,486	1.6%
Total North Dakota Electric	<u>\$13,381,639</u>	6.6%

3 * Net of Changes in the Renewable Rider and TCA.

4
5 **Revenue Allocation and Rate Design**

6 **Q. What are the objectives underlying the allocation of the increase and**
7 **the rates proposed to recover the revenue requirement?**

8 **A.** The embedded class cost of service study and proposed revenue
9 allocation embody several of the recognized ratemaking objectives by
10 their effectiveness in yielding the total revenue requirement under the fair-
11 return standard, fairness of the specific rates in the apportionment of the
12 total costs of service among the different consumers, and efficiency of the
13 rate classes.

1 Q. **Would you please explain how the proposed rate increase was**
2 **apportioned among the customer classes?**

3 A. Yes. In designing the proposed rates to reflect the additional
4 revenue requirement I first considered the results of the embedded cost
5 study, sponsored by Mr. Bruce Chapman which provided the increase
6 required from each class to produce the overall rate of return of 7.459
7 percent as shown on the Cost by Component report provided in Statement
8 M, pages 1 through 15 and as summarized on Statement N, page 2. The
9 embedded class cost of service study provided in Statement M reflects the
10 revenue requirement to be recovered through base retail rates as shown
11 on Statement J, page 1 resulting in a required revenue increase in base
12 retail rates of \$14,111,438. While moving each rate class to the overall
13 rate of return is a desired outcome in meeting the widely held objective of
14 the fair return standard, the magnitude of the increases required for the
15 residential service, irrigation service, small municipal service and
16 municipal pumping service customers was too severe when considering
17 the increases would be three or more times greater than the overall
18 increase in base retail rates of 7.7 percent. It was determined that
19 mitigation was necessary in order to balance the fair return standard with
20 the recognition of customer impacts. This was accomplished by
21 employing a two-step process in applying the increase 1) the maximum
22 increase to any class of customers was limited to 1.4 times the overall
23 increase or 10.8171 percent and 2) the minimum increase was set at 4.8

1 percent. The resulting increase in base retail rates allocated to each rate
2 schedule is shown on Statement N, Page 2.

3 **Q. Would you please describe the rate form you are proposing for each**
4 **rate schedule and how you propose to collect the allocated final**
5 **increase in base retail rates from each of the rate schedules?**

6 A. Yes I will describe each rate schedule starting with Residential
7 Service Rate 10. The calculations underlying the Rate 10 design are
8 shown on Statement N, page 7. As shown, the Basic Service Charge was
9 increased to \$0.65 per day or \$19.76 per month, an increase of \$9.12 per
10 month from the currently effective Basic Service Charge. This proposed
11 charge reflects the customer component identified by Mr. Chapman in the
12 embedded class cost of service as shown on Statement M, page 1. The
13 Basic Service Charge is collected on a daily basis in order to avoid
14 prorating the monthly charge when customers are in service less than 30
15 days, on average, or when a billing period extends beyond a 30 day
16 average. The energy charges for the residential rate schedule were
17 determined by reducing the total revenue responsibility for the class
18 (including the allocated revenue increase) by the revenues to be collected
19 under the proposed Basic Service Charge, the seasonal differential and
20 the pro forma Base Fuel and Purchased Power component for secondary
21 service. The revenues remaining to be collected were divided by the
22 projected 2017 Rate 10 Kwh sales to determine the cost per Kwh required
23 to be collected through the energy component. As noted above, a typical

1 residential customer, using 980 Kwh on a monthly basis, will see an
2 increase in their electric service bill of ~~\$0.60~~^{\$7.45} on a monthly basis as shown
3 on Exhibit No. _____(TAA-2), page 1.

4 The process described above for the calculation of the proposed
5 Residential Rate 10 schedule was used to determine the rate components
6 for each of the other rate schedules, that is, the first step was to establish
7 the Basic Service Charge by considering the customer costs identified in
8 the embedded cost of service study and the Demand Charge based on
9 the demand costs identified in the embedded class cost of service study
10 for those rate schedules where demand metering is warranted. The
11 second step was to deduct the revenues to be recovered under the Basic
12 Service Charge, Demand Charge, seasonal or service level differential
13 and Base Fuel and Purchased Power components for each rate schedule.
14 The Energy Charge component was then determined by dividing the
15 revenues remaining to be collected by the pro forma sales under the
16 applicable rate schedule. The calculations just described are provided for
17 each rate schedule on pages 8-27 of Statement N and a summary of the
18 proposed charges for each rate schedule is provided on Statement N
19 pages 5 and 6.

20 Montana-Dakota continues to offer optional Time-of-Day (TOD) rate
21 schedules consisting of Residential TOD Rate 16, Small General Service
22 TOD Rate 26 and Large General Service TOD Rate 31. The rates have
23 been designed to provide customers with an incentive to shift load to the

1 off-peak period (all hours except for the hours from noon to 8:00 p.m.
2 Monday through Friday).

3 A representation of the annual billing impact for Rates 10, 20 and
4 30 are provided on pages 28-31 of Statement N.

5 **Q. Ms. Aberle, in regard to TOD rates, have you addressed the**
6 **Commission's Order in the last rate case (PU-10-124) where a study**
7 **of mandatory TOD rates was to be completed prior to the next rate**
8 **case?**

9 A. Yes. The Company did commission a study to determine the cost
10 effectiveness of implementing mandatory time of day rates for the North
11 Dakota electric system. The focus of the study was in regard to residential
12 loads that comprise over one-third of the total load on the system. The
13 results of the study indicate that it is not cost effective at this time to
14 implement mandatory time of day rates given the cost to implement versus
15 the potential capacity cost savings associated with implementing such a
16 rate form. The Company is currently evaluating an air-conditioning cycling
17 program at this time that appears to more efficiently and effectively provide
18 capacity cost savings than a mandatory time of day rate structure. The
19 Company will continue to discuss the appropriate mechanism with the
20 Commission.

21 **Q. Would you please further discuss your proposal to increase the**
22 **Basic Service Charge component of each rate schedule?**

1 A. Yes. As noted previously, the Basic Service Charge component of
2 each rate schedule has been set at or nearly at the cost per customer
3 component identified in the embedded class cost of service study. As
4 described by Mr. Chapman and as shown on Schedule M-1 the customer
5 component reflects those costs that vary by the number of customers
6 served in each rate class. This includes the investment in meters and
7 services tied directly to each individual customer and a portion of the
8 investment in poles, overhead and underground conductors and line
9 transformers determined through the class study to be associated with the
10 minimum investment necessary to provide service to a customer
11 regardless of the energy or load requirements of that customer. The
12 Basic Service Charge can be likened to a connection charge for access to
13 service. Customers are already accustomed to paying a fixed monthly
14 charge for access to services such as traditional wired phone service, cell
15 phone service, city utilities, etc. It is imperative that appropriate fixed
16 costs be collected through the Basic Service Charge in order to minimize
17 intra class subsidies and provide customers with the appropriate price
18 signal. In all classes, increasing the Basic Service Charge to the amount
19 identified as necessary to recover fixed costs, does not provide a
20 disincentive to wisely use energy. Customers' conservation efforts are
21 rewarded through lower bills because of lower energy consumption. For
22 example, 76 percent of the costs assigned to be recovered under Rate 10
23 will continue to be recovered on a volumetric basis under the proposed

1 rate schedule reflecting a Basic Service Charge of \$0.65 per day or
2 \$19.76 on a monthly basis. Other benefits of better aligning cost recovery
3 with cost causation include:

- 4 ◦ Mitigating the impact of significantly colder or warmer than normal
5 weather on customers' bills.
- 6 ◦ Mitigating the impact abnormal weather has on the Company's
7 ability to recover fixed costs.
- 8 ◦ Residential customers' bills will be more stable as approximately 24
9 percent of the total bill will be fixed each month and not dependent
10 on changes in weather.
- 11 ◦ Provides a better match of revenues to the investment made to
12 serve each customer. If fixed costs are not recovered from fixed
13 charges, average or higher than average use customers subsidize
14 low use customers regardless of the reason a customer uses less
15 energy than average.

16 **Q. Ms. Aberle, would you please explain the cost recovery riders that**
17 **the Company is proposing to continue beyond the implementation of**
18 **final rates in this case?**

19 **A.** Yes. As explained by Mr. Jacobson, the Company is proposing to
20 continue cost recovery of the renewable investments and related costs
21 through the Renewable Rider and transmission related expenses through
22 the TCA. As shown Statement N, page 4, the Renewable Rider costs are
23 allocated based on the demand/energy allocator identified as Allocation

1 Factor No. 3 in the embedded class cost of service study and the TCA
2 costs are allocated to each class based on the allocation factor used to
3 allocate transmission related investment and expenses in the embedded
4 class cost of service study (Factor No. 2). The allocated costs under each
5 rider are proposed to recovered on a per Kwh basis under each rate
6 schedule. The Environmental Cost Recovery Rider and the Generation
7 Resource Recovery Rider charges amounts will go to zero charges
8 concurrent with final rates effective in this case.

9 **Interim Rates**

10 **Q. How was the proposed interim revenue requirement apportioned**
11 **among the customer classes?**

12 A. The interim revenue requirement of \$13,027,771 was applied on
13 an equal percentage basis to all rate schedules in order to maintain the
14 allocation of revenues authorized in the last rate case. The interim
15 amount will be billed as a separate line item on customers' bills based on
16 the application of the interim percentage of 11.496 to the actual Basic
17 Service, Energy and Demand amounts billed. This will provide the ability
18 for the Company to track the interim revenues collected from each
19 customer. The calculations supporting the application of the interim
20 increase to each class are provided in Appendix C to the Application for
21 Interim Increase in Electric Rates. Page 2 of Exhibit No. ____ (TAA-2)
22 shows a typical average residential bill reflecting the proposed interim
23 increase that results in average monthly increase of approximately \$6.80.

1 Q. Does this conclude your direct testimony?

2 A. Yes, it does.

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA
Allocation of Revenues
Projected 2017

Projected 2017 Billing Determinants and Revenues

Rate Class	Bill Determinants	Kwh	KW	Base Rate	Energy	Demand	Fuel Rev	Total
Residential Service								
Rate 10	79,991	770,665,000		\$10,218,868	\$41,667,604		\$19,544,572	\$71,431,044
Rate 13	4	127,000		657	4,114		3,221	7,992
Rate 16	8	127,000		1,314	5,661		3,221	10,196
Total Residential	80,003	770,939,000		10,220,839	41,677,379		19,551,014	71,449,232
Small General Service								
Rate 20	11,272	111,247,327		2,880,033	6,096,565		2,821,232	11,797,830
Rate 26	240	1,278,673		70,080	59,337		32,427	161,844
Subtotal	11,512	112,526,000		2,950,113	6,155,902		2,853,659	11,959,674
Rate 25	46	1,267,000	8,086	10,914	24,757	16,573	32,131	84,375
Rate 40	309	4,076,000	9,468	74,734	125,544	49,107	103,367	352,752
Total Small General	11,867	117,869,000	17,552.7	3,035,761	6,306,203	65,680	2,989,157	12,396,801
Large General Service								
Rate 30 Primary	43	195,765,000	468,864.3	49,020	5,127,085	4,104,729	4,804,073	14,084,907
Rate 30 Secondary	4,587	755,983,226	2,281,943.8	2,477,440	20,403,987	24,456,948	19,171,735	66,510,110
Rate 31 Primary	1	2,081,000	7,835.7	1,164	36,745	39,920	51,068	128,897
Rate 31 Secondary	68	17,694,774	96,323.7	38,352	312,567	575,746	448,739	1,375,404
Rate 32 Secondary	623	55,941,000	273,550.0	112,140	1,789,552	556,623	1,418,664	3,876,979
Subtotal	5,322	1,027,465,000	3,128,518	2,678,116	27,669,936	29,733,966	25,894,279	85,976,297
Rate 30 Contract Rates	3	102,241,000	203,896	2,460	1,817,615	1,267,428	2,508,994	5,596,497
Rate 38	3	31,911,000	85,568	17,689	682,542	586,991	783,096	2,070,318
Rate 39	1	5,107,000	11,502.0	3,600	46,933	66,137	125,326	241,996
Total Large General	5,329	1,166,724,000	3,429,484	2,701,865	30,217,026	31,654,522	29,311,695	93,885,108
Municipal Lighting								
Rate 41 Primary	49	1,719,000			81,412		42,184	123,596
Rate 41 Secondary	512	18,127,000			949,971		459,701	1,409,672
Total Municipal Lighting	561	19,846,000			1,031,383		501,885	1,533,268
Municipal Pumping								
Rate 48 Primary	4	13,894,000	35,805.3	518	298,166	176,945	340,959	816,588
Rate 48 Secondary	319	25,168,000	91,118.4	37,418	578,810	596,534	638,260	1,851,022
Total Municipal Pumping	323	39,062,000	126,923.7	37,936	876,976	773,479	979,219	2,667,610
Outdoor Lighting Service								
Rate 52 Primary	2	13,000			850		319	1,169
Rate 52 Secondary	2,602	7,424,000			515,894		189,273	704,167
Total Outdoor Lighting	2,604	7,437,000			516,744		189,592	705,336
Total North Dakota Electric	100,687	2,121,877,000	3,573,960.7	\$15,996,401	\$80,625,711	\$32,493,681	\$53,521,562	\$182,637,355

Total Pro Forma Revenues \$182,637,355
 Requested Revenue Increase 14,111,438
 % Increase 7.726480%
 Overall ROR 7.459%
 Inverse of Tax Rate 62.1985%

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA
 Allocation of Revenues
 Projected 2017

Rate Class	Embedded				Allocation of Revenues 1/	Rate Design Results			
	Rate Base (000)'s	Op Inc	ROR	COS		Increase	% Incr	Revenue Increase \$	% ROR
Residential Service									
Rate 10					\$7,726,767		\$7,726,297	10.8%	
Rate 13					865		864	10.8%	
Rate 16					1,103		1,103	10.8%	
Total Residential	\$252,851,000	\$9,653,000	3.82%	86,250,000	\$7,728,735		7,728,284	10.8%	5.7%
Small General Service									
Rate 20					1,276,183		1,276,627	10.8%	
Rate 26					17,507		17,511	10.8%	
Subtotal	39,331,000	2,122,000	5.40%	13,264,000	1,293,690		1,294,138	10.8%	7.4%
Rate 25	502,000	(6,000)	-1.20%	154,000	9,127		9,122	10.8%	
Rate 40	1,333,000	36,000	2.70%	457,000	101,977		38,158	10.8%	
Total Small General	41,166,000	2,152,000	5.23%	13,875,000	1,340,975		1,341,418	10.8%	7.3%
Large General Service									
Rate 30 Primary	36,254,000	2,748,000	7.58%	14,016,000	676,414		558,890	4.0%	
Rate 30 Secondary	175,340,000	14,757,000	8.42%	63,810,000	(2,698,440)		3,281,682	4.9%	
Rate 31 Primary	405,000	17,000	4.20%	150,000	21,237		14,845	11.5%	
Rate 31 Secondary	4,038,000	236,000	5.84%	1,479,000	104,817		179,121	13.0%	
Rate 32 Secondary	10,483,000	637,000	6.08%	4,108,000	233,007		227,906	5.9%	
Subtotal	226,520,000	18,395,000	8.12%	83,563,000	(2,465,821)		4,262,444	5.0%	9.3%
Rate 30 Contract Rates									
Rate 38	5,381,000	356,000	6.62%	2,144,000	72,942		269,036	4.8%	
Rate 39							99,543	4.8%	
Total Large General	231,901,000	18,751,000	8.09%	85,707,000	(2,336,879)		4,642,662	4.9%	9.3%
Municipal Lighting									
Rate 41 Primary	237,000	31,000	13.08%	102,000	(21,419)				
Rate 41 Secondary	4,794,000	520,000	10.85%	1,148,000	(281,125)				
Total Municipal Lighting	5,031,000	551,000	10.95%	1,250,000	(282,544)		73,634	4.8%	11.9%
Municipal Pumping									
Rate 48 Primary	2,871,000	58,000	2.02%	1,069,000	251,048				
Rate 48 Secondary	6,094,000	248,000	4.07%	2,184,000	332,084				
Total Municipal Pumping	8,965,000	306,000	3.41%	3,253,000	583,390		288,558	10.8%	5.4%
Outdoor Lighting Service									
Rate 52 Primary	1,852,000	220,000	11.88%	575,000	(131,610)		33,839	4.8%	13.0%
Rate 52 Secondary									
Total Outdoor Lighting	1,852,000	220,000	11.88%	575,000	(131,610)		33,839	4.8%	13.0%
Total North Dakota Electric	\$541,766,000	\$31,633,000	5.84%	\$190,910,000	\$14,114,055	7.7%	\$14,108,606	7.7%	7.5%

1/ Allocation of revenues as follows:
 No decreases
 No > 1.4 Avg 10 8171%
 Remainder equally

Remaining Revenues
 Associated Current Revenues
 Rates 30 Primary, Secondary &
 Contracts, 38, 39, 41 Primary &
 Secondary, 52 Primary & Secondary

4,357,829
 90,742,432
 4,80240%

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Allocation of Revenues
Projected 2017

Rate Class	Renewable Rider		Transmission Rider		Revenue Change	Total Change	Percent
	Proposed Requirement	Current Requirement	Proposed Requirement	Current Requirement			
Residential Service							
Rate 10							
Rate 13							
Rate 16							
Total Residential	\$5,441,097	\$5,489,085	\$2,300,545	\$2,536,390	-\$235,845	\$7,444,431	9.4%
Small General Service							
Rate 20							
Rate 26							
Subtotal	793,894	636,897	335,225	370,211	-34,986	1,416,149	10.9%
Rate 25	7,753	7,171	1,450	4,168	-2,718	6,986	7.3%
Rate 40	28,280	23,071	11,208	13,410	-2,202	41,165	10.6%
Total Small General	829,927	667,139	347,883	387,789	-39,906	1,464,300	10.9%
Large General Service							
Rate 30 Primary	1,294,470	1,350,779	494,872	573,591	-138,719	363,862	2.3%
Rate 30 Secondary	5,219,521	5,216,284	2,028,485	2,215,031	-186,546	3,098,373	4.2%
Rate 31 Primary	13,760	14,359	4,623	6,097	-1,474	12,772	8.6%
Rate 31 Secondary	122,170	122,094	47,479	51,846	-4,367	174,830	11.3%
Rate 32 Secondary	364,859	385,993	108,207	163,907	-55,700	151,072	3.4%
Subtotal	7,014,780	7,089,509	2,623,666	3,010,472	-386,806	3,800,909	4.0%
Rate 30 Contract Rates							
Rate 38	206,244	210,389	61,840	89,338	-27,498	269,036	4.8%
Rate 39							
Total Large General	7,221,024	7,299,898	2,685,506	3,099,810	-414,304	4,149,484	4.8%
Municipal Lighting							
Rate 41 Primary	10,337		1,799				
Rate 41 Secondary	109,514		17,981				
Total Municipal Lighting	119,851	155,896	19,780	38,681	-18,901	18,755	1.1%
Municipal Pumping							
Rate 48 Primary	92,863		32,454				
Rate 48 Secondary	169,932		60,013				
Total Municipal Pumping	262,815	246,745	92,467	104,876	-12,409	292,183	9.7%
Outdoor Lighting Service							
Rate 52 Primary	47,180	64,330	11,787	15,990	-4,203	12,486	1.6%
Rate 52 Secondary							
Total Outdoor Lighting	47,180	64,330	11,787	15,990	-4,203	12,486	1.6%
Total North Dakota Electric	\$13,921,694	\$13,923,093	\$5,457,968	\$6,183,536	-\$725,568	\$13,381,639	6.60%

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Allocation of Revenues
Projected 2017

Rate Class	Bill Determinants		Kwh	Renewable Rider		Transmission Rider		Energy/Demand Factor 3	12 CP Factor 2
	Proposed Requirement	Rate per Kwh		Design Revenue	Proposed Requirement	Rate per Kwh	Design Revenue		
Residential Service									
Rate 10	79,991		770,685,000						
Rate 13	4		127,000						
Rate 16	8		127,000						
Total Residential	80,003	\$5,441,097	770,939,000	\$0.00706	\$5,442,829	\$2,300,545	\$0.00298	39.083586%	42.150203%
Small General Service									
Rate 20	11,272		11,247,327						
Rate 26	240		1,278,673						
Subtotal	11,512	793,894	112,526,000	0.00706	794,434	335,225	0.00298	5.702570%	6.141944%
Rate 25	46	7,753	1,267,000	0.00706	8,945	1,450	0.00298	0.055690%	0.026563%
Rate 40	309	28,280	4,076,000	0.00706	28,777	11,208	0.00298	0.203136%	0.205342%
Total Small General	11,867	829,927	117,869,000		832,155	347,883			
Large General Service									
Rate 30 Primary	43	1,294,470	195,765,000	0.00681	1,333,160	434,872	0.00253	9.298220%	7.967649%
Rate 30 Secondary	4,587	5,219,521	755,983,226	0.00681	5,148,246	2,028,485	0.00253	37.491999%	37.165573%
Rate 31 Primary	1	13,760	2,081,000	0.00681	14,172	4,623	0.00253	0.098841%	0.084697%
Rate 31 Secondary	68	122,170	17,694,774	0.00681	120,501	47,479	0.00253	0.877549%	0.869909%
Rate 32 Secondary	623	364,859	55,941,000	0.00681	380,958	108,207	0.00253	2.620796%	1.982544%
Subtotal	5,322	7,014,780	1,027,465,000		6,997,037	2,623,666			
Rate 30 Contract Rates	3	206,244	102,241,000	0.00681	217,314	61,840	0.00253	1.481459%	1.133022%
Rate 38	3	31,911,000	31,911,000						
Rate 39	1	5,107,000	5,107,000						
Total Large General	5,329	7,221,024	1,166,724,000	0.00681	7,214,351	2,685,506	0.00253		
Municipal Lighting									
Rate 41 Primary	49	10,337	1,719,000		1,799	1,799		0.074248%	0.032970%
Rate 41 Secondary	512	109,514	18,127,000		17,981	17,981		0.786642%	0.329444%
Total Municipal Lighting	561	119,851	19,846,000	0.00612	121,458	19,780	0.00116		
Municipal Pumping									
Rate 48 Primary	4	92,683	13,894,000		32,454	32,454		0.665748%	0.594622%
Rate 48 Secondary	319	169,932	25,168,000		60,013	60,013		1.220624%	1.099556%
Total Municipal Pumping	323	262,615	39,062,000	0.00681	266,012	92,467	0.00253		
Outdoor Lighting Service									
Rate 52 Primary	2	13,000	13,000						
Rate 52 Secondary	2,602	7,424,000	7,424,000						
Total Outdoor Lighting	2,604	47,180	7,437,000	0.00612	45,514	11,787	0.00116	0.338893%	0.215963%
Total North Dakota Electric	100,687	\$13,921,694	2,121,877,000		\$13,922,319	\$5,457,968		100.000000%	100.000000%

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA
Summary of Proposed Charges
Projected 2017

Rate Class	Base Rate	Energy Charges		Base Fuel	Total Energy		Demand Charges			
		Summer	Winter		Summer	Winter	0-10 Kw		> 10 Kw	
							Summer	Winter	Summer	Winter
Residential										
Rate 10	\$0.65									
1st 750		\$0.06066	\$0.06066	\$0.02536	\$0.08602	\$0.08602				
Over 750		0.06066	0.03066	0.02536	0.08602	0.05602				
Rate 13	0.75									
Off Peak		0.07845	0.01100	0.02536	0.10381	0.03636				
On Peak										
1st 750		0.07845	0.07845	0.02536	0.10381	0.10381				
Over 750		0.07845	0.04845	0.02536	0.10381	0.07381				
TOD Rate 16	0.75									
Off Peak		0.05211	0.03711	0.02536	0.07747	0.06247				
On Peak		0.08211	0.06711	0.02536	0.10747	0.09247				
Small General Service										
Rate 20	0.84									
1st 750		0.07212	0.07212	0.02536	0.09748	0.09748				
Over 750		0.07212	0.04212	0.02536	0.09748	0.06748				
Irrigation Rate 25	1.50	0.00782	0.00782	0.02536	0.03482	0.03482	5.00	1.25	5.00	1.25
TOD Rate 26	1.00									
Off Peak		0.04970	0.03470	0.02536	0.07506	0.06006				
On Peak		0.07470	0.05970	0.02536	0.10006	0.08506				
Municipal Rate 40										
Non- Demand	0.84									
1st 750		0.04444	0.04444	0.02536	0.06980	0.06980				
Over 750		0.04444	0.03344	0.02536	0.06980	0.05880				
Demand	1.00						11.25	0.00	11.25	8.25
1st 750		0.02444	0.02444	0.02536	0.04980	0.04980				
Over 750		0.02444	0.02444	0.02536	0.04980	0.04980				
Large General Service										
Rate 30 Primary Service	100.00	0.02110	0.02110	0.02454	0.04564	0.04564	14.00	11.00	14.00	11.00
Rate 30 Secondary Service	56.00	0.03110	0.03110	0.02536	0.05646	0.05646	12.50	9.50	12.50	9.50
TOD Rate 31										
Primary Service	83.00									
Off Peak		0.01864	0.01864	0.02454	0.04318	0.04318	2.00	2.00	2.00	2.00
On Peak		0.02714	0.02714	0.02454	0.05168	0.05168	14.00	11.00	14.00	11.00
Secondary Service	72.00									
Off Peak		0.02864	0.02864	0.02536	0.05400	0.05400	2.00	2.00	2.00	2.00
On Peak		0.03714	0.03714	0.02536	0.06250	0.06250	12.50	9.50	12.50	9.50
Space Heating Rate 32										
Primary Service	21.00	0.02110	0.02110	0.02454	0.04564	0.04564	14.00	1.05	14.00	1.05
Secondary Service	21.00	0.03110	0.03110	0.02536	0.05646	0.05646	12.50	1.05	12.50	1.05
Demand Resp Rate 38	Contract	0.01617	0.01617	0.02454	0.04071	0.04071	11.00	9.50	11.00	9.50
Municipal Lighting - Rate 41										
Primary Service		0.05671	0.05671	0.02454	0.08125	0.08125				
Secondary Service		0.06171	0.06171	0.02536	0.08707	0.08707				

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA
Summary of Proposed Charges
Projected 2017

Rate Class	Base Rate	Energy Charges		Base Fuel	Total Energy		Demand Charges			
		Summer	Winter		Summer	Winter	0-10 Kw		> 10 Kw	
							Summer	Winter	Summer	Winter
Municipal Pumping - Rate 48										
Primary Service	80.00	0.02708	0.02708	0.02454	0.05162	0.05162	9.00	6.00	9.00	6.00
Secondary Service	45.00	0.02808	0.02808	0.02536	0.05344	0.05344	9.00	6.00	9.00	6.00
Outdoor Lighting - Rate 52										
Primary Service		0.06998	0.06998	0.02454	0.09452	0.09452				
Secondary Service		0.07404	0.07404	0.02536	0.09940	0.09940				

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Residential Electric Service Rate 10
Projected 2017

Residential Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate - Rate 10	79,991	\$0.35 per day	\$10,218,850	\$0.65 per day	\$18,977,865
Rate 95	1	0.05 per day	18	0.05 per month	18
Energy					
Summer	246,394,175	\$0.05304 per Kwh	13,068,747	\$0.06066 per Kwh	14,946,271
Winter					
First 750	320,461,951	\$0.05304 per Kwh	16,997,302	0.06066 per Kwh	19,439,222
Over 750	203,828,874	0.02304 per Kwh	4,696,217	0.03066 per Kwh	6,249,393
Subtotal	524,290,825		21,693,519		25,688,615
Riders (Generation & Environmental)			6,905,338		
Total Energy	770,685,000		41,667,604		40,634,886
Base Fuel	770,685,000	\$0.02536 per Kwh	19,544,572	\$0.02536 per Kwh	19,544,572
Total Rate 10			<u>\$71,431,044</u>		<u>\$79,157,341</u>
Total Revenues Per Design					\$79,157,341
Target Revenues					79,157,811
Difference					<u>(\$470)</u>

Derivation of Rate:

Projected Revenues Before Increase	Projected	\$71,431,044
Proposed Revenue Increase		7,726,767
Total Revenue Requirement		\$79,157,811
Less:		
Proposed Base Rate Revenues		18,977,883
Projected Base Fuel		19,544,572
Winter Rate >750 differential (\$0.03000) 203,828,874 Kwh		(6,114,866)
Subtotal		32,407,589
Net to be Collected Through Energy		\$46,750,222
Total Kwh		770,685,000
Summer Rate per Kwh		\$0.06066
Winter Rate Per Kwh - 1st 750 Kwh		\$0.06066
Winter Rate - Over 750 Kwh		\$0.03066

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Residential Electric Service Rate 13
Projected 2017

Residential Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate - Rate 13	4	\$0.45 per day	\$657	\$0.75 per day	\$1,095
Energy					
Summer	20,490	\$0.05304 per Kwh	1,087	\$0.07845 per Kwh	1,607
Winter					
On-Peak First 750	18,154	\$0.05304 per Kwh	963	0.07845 per Kwh	1,424
On-Peak Over 750	14,346	0.02304 per Kwh	331	0.04845 per Kwh	695
Off Peak	74,010	0.00804 per Kwh	595	0.01100 per Kwh	814
Subtotal	106,510		1,889		2,933
Riders (Generation & Environmental)			1,138		
Total Energy	127,000		4,114		4,540
Base Fuel	127,000	\$0.02536 per Kwh	3,221	\$0.02536 per Kwh	3,221
Total Rate 13			<u>\$7,992</u>		<u>\$8,856</u>
Total Revenues Per Design					\$8,856
Target Revenues					8,857
Difference					<u>(\$1)</u>

Derivation of Rate:

	Projected
Projected Revenues Before Increase	\$7,992
Proposed Revenue Increase	865
Total Revenue Requirement	<u>\$8,857</u>
Less:	
Proposed Base Rate Revenues	1,095
Projected Base Fuel	3,221
Winter Off-Peak	814
Winter >750 differential (\$0.03000) 14,346 kwh	(430)
Subtotal	<u>4,700</u>
Net to be Collected Through Energy	\$4,157
Total Kwh (excluding Winter Off-Peak)	52,990
Summer rate	\$0.07845
Winter On-Peak First 750	\$0.07845
Winter On-Peak > 750	\$0.04845
Winter Off-Peak Rate	\$0.01100

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Residential Electric TOD Service Rate 16
Projected 2017

Residential Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	8	\$0.45 per day	\$1,314	\$0.75 per day	\$2,190
Energy					
Summer					
On-Peak Kwh	5,951	\$0.10398 per Kwh	619	\$0.08211 per Kwh	489
Off Peak Kwh	16,702	0.02304 per Kwh	385	0.05211 per Kwh	870
Subtotal	22,653		1,004		1,359
Winter					
On-Peak Kwh	21,891	\$0.07398 per Kwh	1,619	\$0.06711 per Kwh	1,469
Off Peak Kwh	82,456	0.02304 per Kwh	1,900	0.03711 per Kwh	3,060
Subtotal	104,347		3,519		4,529
Riders (Generation & Environmental)			1,138		
Total Energy	127,000		5,661		5,888
Base Fuel	127,000	\$0.02536 per Kwh	3,221	\$0.02536 per Kwh	3,221
Total Rate 16 Revenues			<u>\$10,196</u>		<u>\$11,299</u>
Total Revenues Per Design					\$11,299
Target Revenues					<u>11,299</u>
Difference					<u>\$0</u>

Derivation of Rate:

Projected Revenues Before Increase		Projected
Proposed Revenue Increase		\$10,196
Total Revenue Requirement		<u>1,103</u>
		\$11,299
Less:		
Proposed Base Rate Revenues		2,190
Projected Base Fuel		3,221
Winter Differential (\$0.01500)	104,347 Kwh	(1,565)
On-Peak Differential \$0.03000	27,842 Kwh	835
		<u>4,681</u>
Net to be Collected Through Energy		\$6,618
Total On-Peak Kwh		127,000
Summer Off-Peak Rate		\$0.05211
Summer On-Peak Rate		\$0.08211
Winter Off-Peak Rate		\$0.03711
Winter On-Peak Rate		\$0.06711

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Small General Electric Service Rate 20
Projected 2017

Small General Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	11,272	\$0.70 per day	\$2,879,996	\$0.84 per day	\$3,455,995
Non-Metered Charges	2	0.05 per day	37	0.20 per day	146
Energy					
Summer	32,506,967	\$0.06147 per Kwh	1,998,203	\$0.07212 per Kwh	2,344,402
Winter					
First 750 Kwh	37,871,251	\$0.06147 per Kwh	2,327,946	0.07212 per Kwh	2,731,275
Over 750 Kwh	40,869,109	0.02304 per Kwh	941,624	0.04212 per Kwh	1,721,407
Subtotal	78,740,360		3,269,570		4,452,682
Riders (Generation & Environmental)			828,792		
Total Energy	111,247,327		6,096,565		
Base Fuel	111,247,327	\$0.02536 per Kwh	2,821,232	\$0.02536 per Kwh	2,821,232
Total Rate 20 Revenues			<u>\$11,797,830</u>		<u>\$13,074,457</u>
Total Revenues Per Design					\$13,074,457
Target Revenues					13,074,013
Difference					<u>\$444</u>

Derivation of Rate:

	Projected
Projected Revenues Before Increase	\$11,797,830
Proposed Revenue Increase	1,276,183
Total Revenue Requirement	<u>\$13,074,013</u>
Less:	
Proposed Base Rate Revenues	3,456,141
Projected Base Fuel	2,821,232
Winter Rate > 750 - differential (\$0.03000) 40,869,109 Kwh	<u>(1,226,073)</u>
Subtotal	5,051,300
Net to be Collected Through Energy	\$8,022,713
Total Kwh	111,247,327
Summer Rate per Kwh	\$0.07212
Winter Rate Per Kwh - 1st 750 Kwh	\$0.07212
Winter Rate - Over 750 Kwh	\$0.04212

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Irrigation Power Service Rate 25
Projected 2017

Irrigation Power Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	46	\$0.65 per day	\$10,914	\$1.50 per day	\$25,185
Energy Riders (Generation & Environmental)	1,267,000	\$0.01209 per Kwh	15,318	\$0.00782 per Kwh	9,908
Total Energy			<u>24,757</u>		
Demand					
Summer	4,311.1	\$2.75 per KW	11,856	\$5.00 per KW	21,556
Winter	3,773.5	1.25 per KW	<u>4,717</u>	1.25 per KW	<u>4,717</u>
Total Demand			16,573		26,273
Base Fuel	1,267,000	\$0.02536 per Kwh	\$32,131	\$0.02536 per Kwh	\$32,131
Total Revenue			<u>\$84,375</u>		<u>\$93,497</u>
Total Revenues Per Design					\$93,497
Target Revenues					<u>93,502</u>
Difference					<u>\$5</u>

Derivation of Rate:

Projected Revenues Before Increase	\$84,375
Proposed Revenue Increase	<u>9,127</u>
Total Revenue Requirement	\$93,502
Less:	
Proposed Base Rate Revenues	25,185
Proposed Demand Charge Revenues	26,273
Projected Base Fuel	<u>32,131</u>
Subtotal	83,589
Net to be Collected Through Energy	9,913
Total Kwh Sales	1,267,000
Proposed Energy Charge	\$0.00782

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Small General Optional Time-of-Day Electric Service Rate 26
Projected 2017

Small General Optional TOD Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	240	\$0.80 per day	\$70,080	\$1.00 per day	\$87,600
Energy					
Summer					
On-Peak Kwh	122,753	\$0.11385 per Kwh	13,975	\$0.07470 per Kwh	9,170
Off Peak Kwh	367,918	0.02304 per Kwh	8,477	\$0.04970 per Kwh	18,286
Subtotal	490,671		22,452		27,456
Winter					
On-Peak Kwh	181,123	\$0.07385 per Kwh	13,376	\$0.05970 per Kwh	10,813
Off Peak Kwh	606,879	0.02304 per Kwh	13,982	\$0.03470 per Kwh	21,059
Subtotal	788,002		27,358		31,872
Riders (Generation & Environmental)			9,527		
Total Energy	1,278,673		59,337		59,328
Base Fuel	1,278,673	0.02536 per Kwh	32,427	0.02536 per Kwh	32,427
Total Rate 26 Revenues			<u>\$161,844</u>		<u>\$179,355</u>
Total Revenues Per Design					\$179,355
Target Revenues					179,351
Difference					<u>\$4</u>

Derivation of Rate:

Projected Revenues Before Increase		\$161,844
Proposed Revenue Increase		17,507
Total Revenue Requirement		<u>\$179,351</u>
Proposed Base Rate Revenues		87,600
Projected Base Fuel		32,427
Winter Differential	(\$0.01500) 788,002 Kwh	(11,820)
On-Peak Differential	\$0.02500 303,876 Kwh	7,597
		<u>115,804</u>
Net to be Collected Through Energy		\$63,547
Total On-Peak Kwh		1,278,673
Summer Off-Peak Rate		\$0.04970
Summer On-Peak Rate		\$0.07470
Winter Off-Peak Rate		\$0.03470
Winter On-Peak Rate		\$0.05970

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Large General Electric Service (Rate 30) & TOD Service (Rate 31)
Projected 2017

	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Primary Service Rate 30	43	\$95.00 per month	\$49,020	\$100.00 per month	\$51,600
Secondary Service Rate 30	4,587	45.00 per month	2,476,980	56.00 per month	3,082,464
Excess Facilities Charges	1		460		
Primary Service Rate 31	1	97.00 per month	1,164	83.00 per month	996
Secondary Service Rate 31	68	47.00 per month	38,352	72.00 per month	58,752
Total Base Rate	4,699		2,565,976		3,193,812
Energy					
Primary Service Rate 30	139,012,726	\$0.02296 per Kwh	\$3,191,732	\$0.01864 per Kwh	2,591,197
Off-Peak	56,752,274	0.02296 per Kwh	1,303,032	\$0.02714 per Kwh	1,540,257
Primary Service Rate 31	1,513,455	\$0.00793 per Kwh	12,002	\$0.01864 per Kwh	28,211
Off-Peak	567,545	0.03175 per Kwh 1/	18,021	\$0.02714 per Kwh	15,403
Total Primary	197,846,000		4,524,787		4,175,068
Primary Riders Rate 30			632,321		
Primary Riders Rate 31			6,722		
Primary Subtotal	197,846,000		5,163,830		4,175,068
Secondary Service Rate 30	536,823,689	\$0.02376 per Kwh	12,754,931	\$0.02864 per Kwh	15,374,630
Off-Peak	219,159,537	0.02376 per Kwh	5,207,231	\$0.03714 per Kwh	8,139,585
Secondary Service Rate 31	12,820,114	\$0.00793 per Kwh	101,664	\$0.02864 per Kwh	367,168
Off-Peak	4,874,660	0.03154 per Kwh 1/	153,749	\$0.03714 per Kwh	181,045
Total Secondary	773,678,000		18,217,575		24,062,428
Secondary Riders Rate 30			2,441,826		
Secondary Riders Rate 31			57,154		
Secondary Subtotal	773,678,000		20,716,555		24,062,428
Total Energy	971,524,000		25,880,385		28,237,496

Rate 30 Primary Energy
Rate 30 Secondary Energy

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Large General Electric Service (Rate 30) & TOD Service (Rate 31)
Projected 2017

Demand									
Summer Primary Service Rate 30									
Off-Peak (In excess of on-peak)	0.0							\$2.00 per Kw	0
On-Peak	166,387.5							14.00 per Kw	2,329,425
	<u>166,387.5</u>								<u>2,329,425</u>
Summer Primary Service Rate 31		\$9.25 per KW		1,539,084					
Off-Peak (In excess of on-peak)	0.0			0				\$2.00 per Kw	0
On-Peak	1,523.8			16,000				14.00 per Kw	21,333
	<u>1,523.8</u>			<u>16,000</u>					<u>21,333</u>
Winter Primary Service Rate 30									
Off-Peak (In excess of on-peak)	0.0							\$2.00 per Kw	0
On-Peak	302,476.8							11.00 per Kw	3,327,245
	<u>302,476.8</u>			<u>1,890,480</u>					<u>3,327,245</u>
Winter Primary Service Rate 31		\$6.25 per KW							
Off-Peak (In excess of on-peak)	0.0			0				\$2.00 per Kw	0
On-Peak	2,430.1			18,226				11.00 per Kw	26,731
	<u>2,430.1</u>			<u>18,226</u>					<u>26,731</u>
Riders (Generation & Environmental) Rate 30				675,165					
Riders (Generation & Environmental) Rate 31				5,694					
Primary Subtotal	472,818.2			4,144,649					5,704,734
Summer Secondary Service Rate 30									
Off-Peak (In excess of on-peak)	0.0							\$2.00 per Kw	0
On-Peak	781,637.3							12.50 per Kw	9,770,466
	<u>781,637.3</u>			<u>8,793,420</u>					<u>9,770,466</u>
Summer Secondary Service Rate 31		\$11.25 per KW							
Off-Peak (In excess of on-peak)	855.8			0				\$2.00 per Kw	1,712
On-Peak	16,906.9			228,243				12.50 per Kw	211,336
	<u>17,762.7</u>			<u>228,243</u>					<u>213,048</u>
Winter Secondary Service Rate 30									
Off-Peak (In excess of on-peak)	0.0							\$2.00 per Kw	0
On-Peak	1,500,306.5							9.50 per Kw	14,252,912
	<u>1,500,306.5</u>			<u>12,377,529</u>					<u>14,252,912</u>
Winter Secondary Service Rate 31		\$8.25 per KW							
Off-Peak (In excess of on-peak)	2,576.1			0				\$2.00 per Kw	5,152
On-Peak	29,539.0			280,621				9.50 per Kw	280,621
	<u>32,115.1</u>			<u>280,621</u>					<u>285,773</u>
Riders (Generation & Environmental) Rate 30				3,285,999					
Riders (Generation & Environmental) Rate 31				66,882					
Secondary Subtotal	2,331,821.6			25,032,693					24,522,199
Total Demand	2,804,639.8			29,177,343					30,226,933

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
General Space Heating Electric Service Rate 32
Projected 2017

General Space Heating Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Primary Service	0	\$15.00 per month	\$0	\$21.00 per month	\$0
Secondary Service	623	15.00 per month	112,140	21.00 per month	156,996
Total Base Rate	623		112,140		156,996
Energy					
Primary Service	0	\$0.02796 per Kwh	0	\$0.02110 per Kwh	0
Riders			0		0
Subtotal	0		0		0
Secondary Service	55,941,000	\$0.02876 per Kwh	1,608,863	\$0.03110 per Kwh	1,739,765
Riders			180,689		
Subtotal	55,941,000		1,789,552		1,739,765
Total Energy	55,941,000		1,789,552		1,739,765
Demand					
Primary Service - Summer	0.0	\$9.25 per Kw	0	\$14.00 per Kw	0
Primary Service - Winter	0.0	\$0.00 per Kw	0	\$1.05 per Kw	0
Riders			0		0
Subtotal	0.0		0		0
Secondary Service - Summer	43,863.1	\$11.25 per Kw	493,460	\$12.50 per Kw	548,289
Secondary Service - Winter	229,686.9	\$0.00 per Kw	0	\$1.05 per Kw	241,171
Riders (Generation & Environmental)			63,163		
Subtotal	273,550.0		556,623		789,460
Total Demand	273,550.0		556,623		789,460
Base Fuel					
Primary Service	0	\$0.02454 per Kwh	0	\$0.02454 per Kwh	0
Secondary Service	55,941,000	\$0.02536 per Kwh	1,418,664	0.02536 per Kwh	1,418,664
Total Base Fuel	55,941,000		1,418,664		1,418,664
Total Rate 32 Revenue			<u>\$3,876,979</u>	<u>\$4,104,885</u>	
			0.054	0.061	
Total Revenues Per Design					
Primary					\$0
Secondary					4,104,885
Total					<u>4,104,885</u>
Target Revenue					4,109,598
Difference					<u>(\$4,713)</u>

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
General Space Heating Electric Service Rate 32
Projected 2017

Derivation of Rate:

Projected Revenues Before Increase	\$3,876,979
Proposed Revenue Increase	232,619
Total Revenue Requirement	<u>\$4,109,598</u>
Less:	
Proposed Base Rate Revenues	
Primary Service	0
Secondary Service	156,996
Proposed Summer Demand Revenues	
Primary Service	0
Secondary Service	548,289
Secondary Energy	1,739,765
Primary Energy	0
Projected Base Fuel	<u>1,418,664</u>
Subtotal	<u>3,863,714</u>
Net to be Collected Through Winter Demand	\$245,884
Total Winter Demand	229,687
Proposed Demand Charges:	
Winter - Primary & Secondary	\$1.07000
Round	\$1.05000

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Interruptible Large Power Demand Response Rate 38
Projected 2017

Large Demand Response	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Customer 1- Discounted		Per Contract	\$11,892	Per Contract	\$11,892
Customer 2		Per Contract	5,797	Per Contract	5,797
Total Base Rate			17,689		17,689
Energy					
Customer 1- Discounted	14,200,000	\$0.02126 per Kwh	301,892	\$0.01617 per Kwh	229,614
Riders- Discounted			45,866		
Customer 2	17,711,000	\$0.02126 per Kwh	376,536	\$0.01617 per Kwh	286,387
Riders (Generation & Environmental)			57,207		
Total Energy	31,911,000		781,501		516,001
Demand					
Summer					
Customer 1 - Discounted	11,377.2	\$9.25 per KW	105,239	\$14.00 per KW	159,281
Customer 2	18,351.4	\$6.25 per KW	114,696	11.00 per KW	201,865
Winter					
Customer 1 - Discounted	20,786.2	\$6.25 per KW	129,914	\$12.50 per KW	259,828
Customer 2	35,053.6	\$3.25 per KW	113,924	9.50 per KW	333,009
Riders- Discounted			46,315		
Riders (Generation & Environmental)			76,903		
Total Demand	85,568.4		586,991		953,983
Base Fuel					
Customer 1 - Discounted	14,200,000	\$0.02454 per Kwh	348,468	\$0.02454 per Kwh	348,468
Customer 2	17,711,000	\$0.02454 per Kwh	434,628	\$0.02454 per Kwh	434,628
Total Base Fuel	31,911,000		783,096		783,096
Less: 10% Discount Applicable to Customer 1			(98,959)		(100,908)
Total Rate 38 Revenue			<u>\$2,070,318</u>		<u>\$2,169,861</u>
Total Revenues Per Design					\$2,169,861
Target Revenues					<u>2,169,743</u>
Difference					<u>\$118</u>

Derivation of Rate:

Projected Revenues Before Increase	\$2,070,318
Proposed Revenue Increase	99,425
Total Revenue Requirement	<u>\$2,169,743</u>
Less:	
Proposed Base Rate Revenues	16,500
Proposed Demand Revenues	912,072
Projected Base Fuel	<u>748,249</u>
Subtotal	1,676,821
Net to be Collected Through Energy	\$492,922
Total Kwh Sales	30,491,000
Proposed Energy Charge:	\$0.01617

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Interruptible Large Power Rate 39
Projected 2017

Large Interruptible	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate		Per Contract	\$3,600	Per Contract	\$3,600
Energy	5,107,000	\$0.00919 per Kwh	46,933	\$0.00978 per Kwh	49,946
Demand	11,502.0	\$5.750 per KW	66,137	\$6.50 per KW	74,763
Base Fuel	5,107,000	\$0.02454 per Kwh	125,326	\$0.02454 per Kwh	125,326
Total Rate 39 Revenue			<u>\$241,996</u>		<u>\$253,635</u>
Total Revenues Per Design					253,635
Target Revenues					<u>253,618</u>
Difference					<u>\$17</u>

Derivation of Rate:

Projected Revenues Before Increase	\$241,996
Proposed Revenue Increase	11,622
Total Revenue Requirement	<u>\$253,618</u>
Less:	
Proposed Base Rate Revenues	3,600
Proposed Demand Revenues	74,763
Projected Base Fuel	<u>125,326</u>
Subtotal	203,689
Net to be Collected Through Energy	\$49,929
Total Kwh Sales	5,107,000
Proposed Energy Charge:	\$0.00978

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Municipal Service Rate 40
Projected 2017

Small Municipal Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Non-Demand	270	\$0.65 per day	\$64,058	\$0.84 per day	\$82,737
Demand	39	0.75 per day	10,676	1.00 per day	14,235
Total Base Rate	309		74,734		96,972
Energy					
Non-Demand Service					
Summer	491,761	\$0.03868 per Kwh	19,021	\$0.04444 per Kwh	21,854
Winter					
First 750 Kwh	749,652	\$0.03868 per Kwh	28,997	0.04444 per Kwh	33,315
Over 750 Kwh	683,587	0.02802 per Kwh	19,154	0.03344 per Kwh	22,859
Subtotal	1,433,239		48,151		56,174
Demand Service	2,151,000	0.01302 per Kwh	28,006	\$0.02444 per Kwh	52,570
Riders			30,366		
Total Energy	4,076,000		125,544		130,598
Demand					
Summer	3,600.7	\$8.25 per Kw	\$29,706.00	\$11.25 per Kw	40,508
Winter					
1st 10 Kw	2,763.3	\$0.00 per Kw	\$0	\$0.00 per Kw	0
Over 10 Kw	3,104.1	\$6.25 per Kw	\$19,401	\$8.25 per Kw	25,609
	5,867.4		19,401		25,609
Total Demand	9,468.1		49,107		66,117
Base Fuel					
Non-Demand Service	1,925,000	\$0.02536 per Kwh	48,818	\$0.02536 per Kwh	48,818
Demand Service	2,151,000	\$0.02536 per Kwh	54,549	0.02536 per Kwh	54,549
Total Base Fuel	4,076,000		103,367		103,367
Total Rate 40 Revenue	4,076,000		\$352,752		\$397,054
Total Revenues Per Design					
Non-Demand Service					\$209,583
Demand Service					187,471
Total					397,054
Target Revenues					390,910
Difference					\$6,144

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Municipal Service Rate 40
Projected 2017

Derivation of Rate:

Projected Revenues Before Increase				\$352,752
Proposed Revenue Increase				38,158
Total Revenue Requirement				<u>\$390,910</u>
Less:				
Proposed Base Rate Revenues				96,972
Proposed Demand Revenues				66,117
Summer- 1st 750 Winter Differential	(\$0.01100)	1,241,413	Kwh	(13,656)
Non-Demand Energy Differential	\$0.02000	1,925,000	Kwh	38,500
Projected Base Fuel				<u>103,367</u>
Subtotal				291,300
Net to be Collected Through Energy				<u>\$99,610</u>
Total Kwh Sales				4,076,000
Proposed Energy Charges:				
Demand Service				\$0.02444
Non-Demand Rate:				
Winter - 1st 750				\$0.04444
Winter - Over 750				0.03344
Summer				\$0.04444

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Municipal Lighting Service Rate 41
Projected 2017

Municipal Lighting Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Primary	0	\$0.00 per month	\$0	per month	\$0
Secondary	0	\$0.00 per month	0	per month	0
Energy					
Primary	1,719,000	\$0.05008 per Kwh	86,088	\$0.05671 per Kwh	97,484
Riders			3,937		
Secondary	18,127,000	0.05508 per Kwh	998,435	0.06171 per Kwh	1,118,617
Riders			41,957		
Total Energy	19,846,000		1,130,417		1,216,101
Base Fuel					
Primary	1,719,000	\$0.02454 per Kwh	42,184	\$0.02454 per Kwh	42,184
Secondary	18,127,000	0.02536 per Kwh	459,701	\$0.02536 per Kwh	459,701
Total Base Fuel	19,846,000		501,885		501,885
Discount @ 10% - Excluding Base Fuel					
Primary	1,719,000		(8,612)		(9,748)
Secondary	16,410,409		(90,422)		(101,269)
Total Discount	18,129,409		(99,034)		(111,017)
Total Rate 41 Revenue			<u>\$1,533,268</u>		<u>\$1,606,969</u>
Total Revenues Per Design					\$1,606,969
Target Revenues					<u>1,606,902</u>
Difference					<u>\$67</u>

Derivation of Rate:

Projected Revenues Before Increase		\$1,533,268
Proposed Revenue Increase		73,634
Total Revenue Requirement		<u>\$1,606,902</u>
Less:		
Proposed Base Rate Revenues		0
Secondary Differential	\$0.0050 16,485,959 Kwh 1/	82,430
Projected Base Fuel		<u>501,885</u>
Subtotal		584,315
Net to be Collected Through Energy		\$1,022,587
Total Kwh Sales (Discounted at 90% of actual)		18,033,059
Proposed Energy Charges:		
Primary		\$0.05671
Secondary		0.06171

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

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Derivation of Rate and Reconciliation
Municipal Pumping Service Rate 48
Projected 2017

Municipal Pumping Service	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate					
Primary	4	\$12.00 per month	\$576	\$80.00 per month	\$3,840
Secondary	319	10.00 per month	38,280	45.00 per month	172,260
Excess Facilities Charge	1		2,330		2,330
Total Basic Service Charge			41,186		178,430
Energy					
Primary	13,894,000	\$0.02061 per Kwh	286,355	\$0.02708 per Kwh	376,250
Riders			40,432		
Secondary	25,168,000	0.02166 per Kwh	545,139	0.02808 per Kwh	706,717
Riders			75,173		
Total Energy	39,062,000		947,099		1,082,967
Demand					
Summer					
Primary	15,052.2	\$5.50 per KW	82,787	\$9.00 per KW	135,470
Secondary	30,578.0	\$7.00 per KW	214,046	\$9.00 per KW	275,202
Subtotal	45,630.2		296,833		410,672
Winter					
Primary	20,753.1	\$3.00 per KW	62,259	\$6.00 per KW	124,519
Secondary	60,540.4	\$5.00 per KW	302,702	\$6.00 per KW	363,242
Subtotal	81,293.5		364,961		487,761
Riders- Primary			46,404		
Riders- Secondary			120,786		
Total Demand	126,923.7		828,984		898,433
Base Fuel					
Primary	13,894,000	\$0.02454 per Kwh	340,959	\$0.02454 per Kwh	340,959
Secondary	25,168,000	0.02536 per Kwh	638,260	0.02536 per Kwh	638,260
Subtotal	39,062,000		979,219		979,219
Primary Discounted (all accounts)			(43,185)		(64,008)
Secondary Discounted					
Bills	266		(3,192)		(14,364)
Energy	19,125,058		(41,501)		(53,703)
Demand - Summer	24,023.1		(16,816)		(21,621)
Demand - Winter	48,368.6		(24,184)		(29,021)
Total Discounted			(128,878)		(182,717)
Total Rate 48 Revenue			<u>\$2,667,610</u>		<u>\$2,956,332</u>
Total Revenues Per Design					
Primary					\$981,038
Secondary					1,975,294
					<u>\$2,956,332</u>
Target Revenues					2,956,168
Difference					<u>\$164</u>

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Municipal Pumping Service Rate 48
Projected 2017

Derivation of Rate:

Projected Revenues Before Increase			\$2,667,610
Proposed Revenue Increase			<u>288,558</u>
Total Revenue Requirement			\$2,956,168
Less:			
Proposed Base Rate Revenues			163,682
Proposed Demand Revenues			821,792
Secondary Differential	\$0.00100	23,255,494 Kwh	23,255
Projected Base Fuel			<u>979,219</u>
Subtotal			1,987,948
Net to be Collected Through Energy			968,220
Total Kwh Sales			35,760,094
Primary Energy Rate			\$0.02708
Secondary Energy Rate			\$0.02808

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

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Derivation of Rate and Reconciliation
Outdoor Lighting Service Rate 52
Projected 2017

Outdoor Lighting	Billing Determinants	Rates Before Interim		Proposed Settlement Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	0	\$0.00 per month	\$0	per month	\$0
Energy					
Primary Service Riders	13,000	\$0.06288 per Kwh	817 33	\$0.06998 per Kwh	910
Secondary Service Riders	7,424,000	\$0.06694 per Kwh	496,963 18,931	\$0.07404 per Kwh	549,673
Total Energy	7,437,000		516,744		550,583
Base Fuel					
Primary Service	13,000	\$0.02454 per Kwh	319	\$0.02454 per Kwh	319
Secondary Service	7,424,000	\$0.02536 per Kwh	188,273	\$0.02536 per Kwh	188,273
Total Base Fuel	7,437,000		188,592		188,592
Total Revenue			<u>\$705,336</u>		<u>\$739,175</u>
Total Revenues Per Design					\$739,175
Target Revenues					739,209
Difference					<u>(\$34)</u>

Derivation of Rate:

Projected Revenues Before Increase		\$705,336
Proposed Revenue Increase		33,873
Total Revenue Requirement		<u>\$739,209</u>
Less:		
Secondary Energy Differential	\$0.00406	7,424,000 Kwh
Projected Base Fuel		<u>188,592</u>
Subtotal		218,733
Net to be Collected Through Energy		520,476
Total Kwh Sales		7,437,000
Proposed Energy Charge		
Primary		\$0.06998
Secondary		\$0.07404

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

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Derivation of Rate and Reconciliation
Contract Rate 303 & 30T
Projected 2017

Contract Rate 303 & 302	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	2	\$95.00 per month	\$2,280	\$95.00 per month	\$2,280
Energy					
First 1.5 Million Kwh	18,000,000	\$0.02239 per Kwh	403,020	\$0.02464 per Kwh	443,520
Over 1.5 Million Kwh	56,171,000	0.01550 per Kwh	870,651	0.01742 per Kwh	978,499
Rate 303 T - All Kwh	<u>1,389,000</u>	<u>0.01550 per Kwh</u>	<u>21,530</u>	<u>0.01742 per Kwh</u>	<u>24,196</u>
Total Energy	75,560,000		1,295,201		1,446,215
Demand					
Summer	42,705.4	8.730 per KW	372,818	9.15 per KW	390,754
Winter	<u>95,505.6</u>	<u>5.550 per KW</u>	<u>530,056</u>	<u>5.82 per KW</u>	<u>555,843</u>
Total Demand	138,211.0		902,874		946,597
Base Fuel	75,560,000	0.02454 per Kwh	<u>1,854,242</u>	0.02454 per Kwh	<u>1,854,242</u>
Total Contract Revenues			<u>\$4,054,597</u>		<u>\$4,249,334</u>
Increase in Revenue					<u>\$194,737</u>

Calculation of Energy Charge:	Rate 303/303T	
	Current	Proposed
First 1.5 Million Kwh	\$0.04693	\$0.04918
Over 1.5 Million Kwh	\$0.04004	0.04196
Rate 303 T - All Kwh	\$0.04004	0.04196
Net Increase to Contracts	4.80%	

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA

Derivation of Rate and Reconciliation
Contract Rate 304
Projected 2017

Contract Rate 304	Billing Determinants	Projected @ Current Rates		Proposed Rates	
		Rate	Revenue	Rate	Revenue
Base Rate	1	\$15.00 per month	\$180	\$15.00 per month	\$180
Energy	26,681,000	\$0.01958 per Kwh	522,414	\$0.02170 per Kwh	578,978
Demand	65,685.4	5.55 per KW	364,554	5.82 per KW	382,289
Base Fuel	26,681,000	0.02454 per Kwh	654,752	0.02454 per Kwh	654,752
Total Contract Revenues			<u>\$1,541,900</u>		<u>\$1,616,199</u>
Calculation of Energy Charge:					<u>\$74,299</u>
Energy	Rate 304				
Current		\$0.04412			
Proposed		\$0.04624			
Net Increase to Contracts		4.80%			

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Bill Comparison Annual Effects
Residential Electric Service Rate 10**

Overall Annual Effect in Dollars				Overall Annual Effect by Percent			
Range	Customers	Total Customers	Average Monthly Use	Range	Customers	Total Customers	Average Monthly Use
< than \$0	494	494	1,556	< than 0%	600	600	4,202
\$1 to \$200	102,158	102,652	729	1% to 10%	42,721	43,321	1,245
\$201 to \$300	0	102,652	-	10% to 15%	19,623	62,944	558
\$301 to \$400	0	102,652	-	15% to 20%	11,768	74,712	370
\$401 to \$500	0	102,652	-	20% to 25%	7,427	82,139	264
\$501 to \$750	0	102,652	-	25% to 30%	5,123	87,262	196
\$751 to \$1000	0	102,652	-	30% to 40%	6,251	93,513	133
\$1001 to \$1500	0	102,652	-	40% to 50%	3,549	97,062	79
> than \$1500	0	102,652	-	> than 50%	5,590	102,652	29

Current Rate 10

Basic Service Charge	\$0.35	daily charge
Energy - 1st 750 Kwh (Winter)	\$0.05304	
Energy - Over 750 Kwh (Winter)	\$0.02304	
Energy - Summer	\$0.05304	Kwh
Generation Rider	\$0.00500	Kwh
Environmental Rider	\$0.00396	Kwh
Transmission Rider	\$0.00329	Kwh
Renewable Rider	\$0.00712	Kwh
Demand	\$0.00	
Base Fuel & Purchased Power	\$0.02536	Kwh

Proposed Rate 10

Basic Service Charge	\$0.65	daily charge
Energy - 1st 750 Kwh (Winter)	\$0.06066	
Energy - Over 750 Kwh (Winter)	\$0.03066	
Energy - Summer	\$0.06066	Kwh
Transmission Rider	\$0.00298	Kwh
Renewable Rider	\$0.00706	Kwh
Demand	\$0.00	
Base Fuel & Purchased Power	\$0.02536	Kwh

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Bill Comparison Annual Effects
Small General Electric Service Rate 20**

Overall Annual Effect in Dollars				Overall Annual Effect by Percent			
Range	Customers	Total Customers	Average Monthly Use	Range	Customers	Total Customers	Average Monthly Use
< than \$0	20	20	13	< than 0%	0	0	-
\$1 to \$200	9,897	9,917	583	1% to 10%	5,995	5,995	1,137
\$201 to \$300	919	10,836	2,406	10% to 15%	3,356	9,351	866
\$301 to \$400	344	11,180	3,260	15% to 20%	1,996	11,347	134
\$401 to \$500	96	11,276	4,563	20% to 25%	0	11,347	-
\$501 to \$750	61	11,337	5,969	25% to 30%	0	11,347	-
\$751 to \$1000	7	11,344	8,085	30% to 40%	0	11,347	-
\$1001 to \$1500	3	11,347	17,474	40% to 50%	0	11,347	-
> than \$1500	0	11,347	-	> than 50%	0	11,347	-

Current Rate 20

Basic Service Charge	\$0.70	per day
Energy - 1st 750 Kwh (Winter)	\$0.06147	
Energy - Over 750 Kwh (Winter)	\$0.02304	
Energy - Summer	\$0.06147	
Generation Rider	\$0.00349	per Kwh
Environmental Rider	\$0.00396	per Kwh
Base Fuel & Purchased Power	\$0.02536	per Kwh

Proposed Rate 20

Basic Service Charge	\$0.84	per day
Energy - 1st 750 Kwh (Winter)	\$0.07212	
Energy - Over 750 Kwh (Winter)	\$0.04212	
Energy - Summer	\$0.07212	per Kwh
Transmission Rider	\$0.00298	per Kwh
Renewable Rider	\$0.00706	per Kwh
Base Fuel & Purchased Power	\$0.02536	per Kwh

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Bill Comparison Annual Effects
Large General Electric Service Rate 30 - Primary**

Overall Annual Effect in Dollars				Overall Annual Effect by Percent			
Range	Customers	Total Customers	Average Monthly Use	Range	Customers	Total Customers	Average Monthly Use
< than \$0	0	0	-	< than 0%	8	8	423,599
\$1 to \$200	2	2	1,514	1% to 10%	26	34	447,986
\$201 to \$300	0	2	-	10% to 15%	2	36	77,879
\$301 to \$400	1	3	63,300	15% to 20%	3	39	86,293
\$401 to \$500	1	4	11,703	20% to 25%	0	39	-
\$501 to \$750	2	6	51,960	25% to 30%	0	39	-
\$751 to \$1000	2	8	132,675	30% to 40%	0	39	-
\$1001 to \$1500	4	12	102,575	40% to 50%	0	39	-
> than \$1500	27	39	540,498	> than 50%	0	39	-

Current Large General Electric Service Rate 30 - Primary

Basic Service Charge	\$ 95.00	per month
Energy	\$ 0.02296	per Kwh
Generation Rider (KW)	\$ 1.44	
Environmental Rider	\$ 0.00323	per Kwh
Transmission Rider	\$ 0.00293	per Kwh
Renewable Rider	\$ 0.00690	per Kwh
Demand - Oct to May	\$ 6.25	per KW
Demand - June to September	\$ 9.25	per KW
Base Fuel & Purchased Power	\$ 0.02454	per Kwh

Proposed Large General Electric Service Rate 30 - Primary

Basic Service Charge	\$ 100.00	per month
Energy	\$ 0.02110	per Kwh
Transmission Rider	\$ 0.00253	per Kwh
Renewable Rider	\$ 0.00681	per Kwh
Demand - Oct to May	\$ 11.00	per KW
Demand - June to September	\$ 14.00	per KW
Base Fuel & Purchased Power	\$ 0.02454	per Kwh

**Montana-Dakota Utilities Co.
Electric Utility - North Dakota
Bill Comparison Annual Effects
Large General Electric Service Rate 30 - Secondary**

Overall Annual Effect in Dollars				Overall Annual Effect by Percent			
Range	Customers	Total Customers	Average Monthly Use	Range	Customers	Total Customers	Average Monthly Use
< than \$0	3	3	7,178	< than 0%	16	16	12,438
\$1 to \$200	907	910	2,601	1% to 10%	4,066	4,082	15,864
\$201 to \$300	978	1,888	4,123	10% to 15%	76	4,158	456
\$301 to \$400	653	2,541	6,833	15% to 20%	27	4,185	153
\$401 to \$500	404	2,945	9,268	20% to 25%	51	4,236	19
\$501 to \$750	474	3,419	13,595	25% to 30%	0	4,236	-
\$751 to \$1000	232	3,651	21,489	30% to 40%	0	4,236	-
\$1001 to \$1500	239	3,890	29,590	40% to 50%	0	4,236	-
> than \$1500	346	4,236	91,631	> than 50%	0	4,236	-

Current Large General Electric Service Rate 30 - Secondary

Basic Service Charge	\$ 45.00	per month
Energy	\$ 0.02376	per Kwh
Generation Rider (KW)	\$ 1.44	
Environmental Rider	\$ 0.00323	per Kwh
Transmission Rider	\$ 0.00293	per Kwh
Renewable Rider	\$ 0.00690	per Kwh
Demand - Oct to May	\$ 8.25	per KW
Demand - June to September	\$ 11.25	per KW
Base Fuel & Purchased Power	\$ 0.02536	per Kwh

Proposed Large General Electric Service Rate 30 - Secondary

Basic Service Charge	\$ 56.00	per month
Energy	\$ 0.03110	per Kwh
Transmission Rider	\$ 0.00253	per Kwh
Renewable Rider	\$ 0.00681	per Kwh
Demand - Oct to May	\$ 9.50	per KW
Demand - June to September	\$ 12.50	per KW
Base Fuel & Purchased Power	\$ 0.02536	per Kwh

MONTANA-DAKOTA UTILITIES CO.
ELECTRIC UTILITY - NORTH DAKOTA
Allocation of Revenues - Final Increase
Projected 2017

Projected 2017 Billing Determinants and Revenues													
Customer Class	Customers	Kwh	KW	Base Rate	Energy	Demand	Fuel Rev	Total	Revenue Increase \$	Revenue Increase %	Rider Change	Net Change \$	Net Change %
Residential Service	80,003	770,939,000		\$10,220,839	\$41,677,379	\$0	\$19,551,014	\$71,449,232	\$7,728,264	10.8%	-\$283,833	7,444,431	9.4%
Small General Service	11,867	117,869,000	17,553	3,035,761	6,306,203	65,680	2,989,157	12,396,801	1,341,418	10.8%	122,882	1,464,300	10.9%
General Service	5,329	1,166,724,000	3,429,484	2,701,865	30,217,026	31,654,522	29,311,695	93,885,108	4,642,662	4.9%	-493,178	4,149,484	4.0%
Municipal Lighting	561	19,846,000			1,031,383		501,885	1,533,268	73,701	4.8%	-54,946	18,755	1.1%
Municipal Pumping	323	39,062,000	126,924	37,936	876,976	773,479	979,219	2,667,610	288,722	10.8%	3,461	292,183	9.7%
Outdoor Lighting Service	2,604	7,437,000			516,744		188,592	705,336	33,839	4.8%	-21,353	12,486	1.6%
Total North Dakota Electric	100,687	2,121,877,000	3,573,961	\$15,996,401	\$80,625,711	\$32,493,681	\$53,521,562	\$182,637,355	\$14,108,606	7.7%	(\$726,967)	\$13,381,639	6.6%

**MONTANA-DAKOTA UTILITIES CO.
 ELECTRIC UTILITY - NORTH DAKOTA
 Allocation of Revenues - Interim Request
 Projected 2017**

Customer Class	Customers	Kwh	KW	Projected 2017 Billing Determinants and Revenues 1/						Interim Revenue Increase 1/	
				Base Rate	Energy	Demand	Fuel Rev	Rider Rev	Total	\$	%
Residential Service	80,003	770,939,000		\$10,220,839	\$34,769,765	\$0	\$18,834,041	\$14,933,089	\$78,757,734	\$5,172,120	6.6%
Small General Service	11,867	117,869,000	17,553	3,035,761	5,428,079	65,680	2,879,540	1,933,052	13,342,112	980,554	7.3%
General Service	5,329	1,166,724,000	3,429,484	2,701,865	26,782,603	27,434,401	28,226,641	18,055,572	103,201,082	6,543,394	6.3%
Municipal Lighting	561	19,846,000			985,489		483,429	240,471	1,709,389	113,292	6.6%
Municipal Pumping	323	39,062,000	125,924	37,936	761,371	606,289	942,891	634,416	2,982,903	161,588	5.4%
Outdoor Lighting Service	2,604	7,437,000			497,780		181,675	99,284	778,739	57,225	7.3%
Total North Dakota Electric	100,687	2,121,877,000	3,573,961	\$15,996,401	\$69,225,087	\$28,106,370	\$51,548,217	\$35,895,884	\$200,771,959	\$13,028,173	6.5%

1/ Interim Application - Appendix C. Revenues include all riders.

Montana-Dakota Utilities Co.
 Electric Utility - North Dakota
 Estimated Residential Bill Increases
 2017

	Kwh	Current Rates					Proposed Rates				
		Base Rate	Energy	Riders	FPP Charge	Total Current Bill	Base Rate	Energy	Riders	FPP Charge	Total Proposed Bill
January	1,000	\$10.85	\$45.54	\$19.37	\$25.36	\$101.12	\$20.15	\$53.16	\$10.04	\$25.36	\$108.71
February	900	9.80	43.24	17.43	22.82	93.29	18.20	50.09	9.04	22.82	100.15
March	900	10.85	43.24	17.43	22.82	94.34	20.15	50.09	9.04	22.82	102.10
April	900	10.50	43.24	17.43	22.82	93.99	19.50	50.09	9.04	22.82	101.45
May	850	10.85	42.08	16.46	21.56	90.95	20.15	48.56	8.53	21.56	98.80
June	1,000	10.50	53.04	19.37	25.36	108.27	19.50	60.66	10.04	25.36	115.56
July	1,100	10.85	58.34	21.31	27.90	118.40	20.15	66.73	11.04	27.90	125.82
August	1,200	10.85	63.65	23.24	30.43	128.17	20.15	72.79	12.05	30.43	135.42
September	1,000	10.50	53.04	19.37	25.36	108.27	19.50	60.66	10.04	25.36	115.56
October	910	10.85	43.47	17.63	23.08	95.03	20.15	50.40	9.14	23.08	102.77
November	1,100	10.50	47.84	21.31	27.90	107.55	19.50	56.23	11.04	27.90	114.67
December	900	10.85	43.24	17.43	22.82	94.34	20.15	50.09	9.04	22.82	102.10
	11,760	\$127.75	\$579.96	\$227.78	\$298.23	\$1,233.72	\$237.25	669.55	\$118.08	298.23	\$1,323.11

Change by Component

\$109.50 (\$109.70) \$89.59 \$0.00 \$79.39 7.2% \$7.45

Component	Current	Proposed
Basic Service Charge/ Day	\$0.35	\$0.65
Energy	\$0.05304	0.06066
1st 750 winter & summer	0.02304	0.03066
Over 750 winter		
TCA	0.00329	0.00298
ECRR	0.00396	0.00000
GRRR	0.00500	0.00000
Renewable Rider	0.00712	0.00706
Fuel	0.02536	0.02536
Total Riders (excl Fuel)	0.01937	0.01004

Montana-Dakota Utilities Co.
 Electric Utility - North Dakota
 Residential Electric Service Rate 10
 Bill Comparison Worksheet - Interim Rates

	Kwh	Current Rates					Total Current Bill	Interim Increase	% Increase
		Basic Service Charge	Energy	Riders	F&PP Charge				
January	1,000	\$10.85	\$45.54	\$17.20	\$25.36	\$98.95	\$6.48	6.5%	
February	900	9.80	43.24	15.48	22.82	91.34	6.10	6.7%	
March	900	10.85	43.24	15.48	22.82	92.39	6.22	6.7%	
April	900	10.50	43.24	15.48	22.82	92.04	6.18	6.7%	
May	850	10.85	42.08	14.62	21.56	89.11	6.08	6.8%	
June	1,000	10.50	53.04	17.20	25.36	106.10	7.30	6.9%	
July	1,100	10.85	58.34	18.92	27.90	116.01	7.95	6.9%	
August	1,200	10.85	63.65	20.64	30.43	125.57	8.56	6.8%	
September	1,000	10.50	53.04	17.20	25.36	106.10	7.30	6.9%	
October	910	10.85	43.47	15.65	23.08	93.05	6.24	6.7%	
November	1,100	10.50	47.84	18.92	27.90	105.16	6.71	6.4%	
December	900	10.85	43.24	15.48	22.82	92.39	6.22	6.7%	
	11,760	\$127.75	\$579.96	\$202.27	\$298.23	\$1,208.21	\$81.34	6.7%	
Average	980						\$6.78		

Basic Service Charge/ Day	Current	\$0.35
Energy		
1st 750 winter & summer		\$0.05304
Over 750 winter		0.02304
TCA		0.00329
ECRR		0.00396
GRRR		0.00283
Renewable Rider		0.00712
Fuel		0.02536
Interim Increase		11.496%