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

Before the South Dakota Public Utilities Commission

Case No. EL15-____

Direct Testimony
of
Tamie A. Aberle

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

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

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

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

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

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

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

A. I graduated from Moorhead State University, Moorhead, Minnesota in 1982 with a Bachelor of Science degree in Accounting. I began my career with Montana-Dakota in 1983 in the Regulatory Affairs Department, holding several positions within the Department before attaining my current position in 2014.

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

A. Yes. I have previously presented testimony before this Commission, the Public Service Commissions of North Dakota, Montana and Wyoming, and the Public Utilities Commission of Minnesota.

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

A. The purpose of my testimony is to present the effect of the proposed revenue requirement, as identified by Mr. Jacobson in his direct testimony, on each of the Company's electric rates, including how the distribution of the revenue requirement was made among the various classes of customers served. In addition, my testimony will discuss the extent to which Montana-Dakota is proposing changes in rate design and/or tariff conditions and the Company's proposed Environmental Cost Recovery Rider and Transmission Cost Recover Rider.

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

A. I am sponsoring Rule 20:10:13:98 Statement O, Rule 20:10:13:99 Statement O, Schedule O-1 and Exhibit Nos. ____ (TAA-1) through Exhibit No. ____ (TAA-4). I also sponsor the proposed rate schedules appended to the Application in this proceeding.

Q. Can you describe how the Company developed its pro forma sales revenues for this case?

A. Yes. The actual 2014 billing determinants were adjusted to reflect a five-year average per customer for the space heating load served under the dual fuel services (Rates 53 and 54) that are primarily heating loads.

The five year average use per customer was then applied to 2014 customers taking service under Rates 53 and 54 in order to normalize the space heating loads. Revenues were then recalculated for all rates to reflect the currently effective rates and the updated base fuel costs that are presented by Mr. Jacobson.

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

A. The final proposed rates will produce additional revenues of $2,654,880 or 19.2 percent annually based on pro forma 2014 electric consumption. Exhibit No. __ (TAA-1) represents summaries by rate classification of the proposed revenue increase. The exhibit shows the rate number and a description along with the revenues calculated under the present and proposed rates. The amount and percentage increase is also shown for the proposed revenue increase. This exhibit is identical to Rule 20:10:13:98 Statement O.

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

A. Yes. Exhibit No. ____ (TAA-2) depicts a bill comparison based on typical monthly consumption levels for an annual period for a typical customer served under Residential Service Rate 10. As shown on Exhibit No.___(TAA-2) page 1, the proposed rate structure will result in an average increase, based on the proposed rates, of approximately $16.91 per month or 19.2 percent for the typical Residential customer using 854 Kwh on an annual basis. Exhibit No.___(TAA-2), pages 2-5 also

provides the distribution of customers falling into the various annual bill impact ranges by dollar and percentage change from current bills for the residential and general service classes.

Revenue Allocation and Rate Design

Q. What methodology did you use to apportion the proposed rate increase among the customer classes in this case?

A. A review of the embedded cost of service study sponsored by Ms. Cardwell indicated that the majority of the rate classes are well below the requested overall return on rate base. Because of this and because of the magnitude of the overall increase I applied an equal percentage increase to all customer classes.

Q. In general terms, would you please describe the rate design changes you are proposing?

A. Yes. Many of the current rate schedules and rate designs no longer reflect the cost of providing service. Consequently, the Company is proposing to discontinue some rate schedules in the tariff and move customers on these rate schedules to other existing rate schedules. The rate schedules that the Company is proposing to discontinue have a relatively small number of customers and some have been closed to new service for a number of years. Additionally, the Company is proposing to combine two rates onto a new rate schedule. The consolidation and simplification of rate schedules will facilitate rate administration and provide a better reflection of costs.

Several changes to rate design are also being proposed to better reflect the manner in which costs are incurred and to more appropriately assign cost responsibility to individual customers. In this regard, a seasonal rate differential is being proposed so that the rates will reflect the higher costs of providing service during the summer peak periods and the relatively lower costs of providing service during the fall, winter and spring off-peak periods. Below I will discuss each rate and the specific changes for that rate.

Q. Please describe the changes you are proposing for Residential Service Rate 10.

A. The base rate component has been renamed the Basic Service Charge and was increased to $0.35 per day or $10.64 per month, an increase of $4.64 per month from the present rate. This proposed charge is well below the customer component supported in the embedded class study of $20.45 as shown on Rule 20:10:13:97 Statement N, Schedule N-1, page 1. The proposed charge provides a balance between reflecting true cost and recognizing customer impacts. The Basic Service Charge is proposed to be collected on a daily basis in order to avoid prorating the monthly charge when customers are in service less than 30 days, on average, or when a billing period extends beyond a 30 day average. The Company's natural gas service Basic Service Charge has been assessed on a daily basis since December 2003 and has been well accepted by customers.

As discussed above, the energy charges have been streamlined so there is only one summer rate for all energy consumed. In the winter, to reflect the lower costs of service, a second, lower priced rate block for consumption greater than 750 Kwh has been retained reflecting a differential of $0.03 per Kwh.

To design the energy charges for the residential schedule, the total revenue responsibility for the class was reduced by the revenues to be collected under the proposed Basic Service Charge, the pro forma Fuel Cost component and the lower price for the winter block over 750 Kwh as proposed. The revenues remaining were divided by the Rate 10 sales to determine an average cost per Kwh. This price was adjusted downward by the $0.03 differential for the over 750 Kwh winter block. The calculations just described are provided for each rate schedule on pages 4-19 of Rule 20:10:13:99, Statement O, Schedule O-1.

Q. Is the Company proposing any changes for the Special Residential Electric Dual Fuel Space Heating Service Rate 53?

A. Yes, this rate was instituted over 30 years ago to provide customers an alternative to propane use while at the same time providing the Company with an interruptible load. In recent years, the Company has seen some customer migration to this rate. The Company is concerned that the pricing on this rate is no longer cost based for interruptible load available in the winter period only. Consideration was given to moving the load served under Rate 53 to the standard residential rate. However, the

customers currently served on this rate would see too significant of an increase to make that change. Thus, the Company is proposing to close this rate to new service and gradually move the rates closer to the cost of service in order to facilitate the elimination of Rate 53.

Q. What changes is the Company proposing for Rate 20?

A. Consistent with the changes proposed for the residential rate, the Company is increasing the Base Rate and renaming it the Basic Service Charge. The Company is also eliminating the summer block but retaining the winter block for usage over 2,000 Kwh. The Demand Charge will also be increased for those customers that have demands in excess of 10 Kw from $5.00 to $6.00 per Kw.

Q. Are there any rates being eliminated and customers migrated to Rate 20?

A. Yes, both Feed Grinding Service Rate 27 and General Electric Water Heating Service Rate 50 are being eliminated and customers currently served on these rates will now be served on Rate 20. The Company reviewed the effects of this change on customer loads and found the impacts of this change are not outside of reasonable ranges. As discussed earlier, this will streamline the number of rate offerings and reduce the potential for rate subsidies to specific loads. Both Rate 27 and 50 have been closed to new service for almost 30 years and there are only two customers on Rate 27 and eight customers on Rate 50.

Q. Please describe the changes the Company is proposing to Irrigation

Service, Rate 25.

A. Currently, Rate 25, Irrigation Power Service does not require a monthly Base Charge. Instead, the current rate schedule requires customers to pay an annual minimum bill that is determined by the horsepower of the customer's connected load. The proposed Rate 25 will include a monthly Basic Service Charge in order to recognize that the generating plant, transmission and distribution lines, transformers, meters and other equipment required to provide service to the Rate 25 customers involve fixed costs that must be recovered regardless of whether the customer uses the service in a particular month.

In addition, the current Rate 25 levies a demand charge based on the horsepower of the customer's pump. The proposed Rate 25 would base the demand charge on the actual metered KW demand of a customer in each month. The Company is proposing a summer/winter differential to the demand charge where the summer demand charge will be increased to $5.00 per Kw from the currently effective charge of $3.75 per horsepower of connected load and the winter demand charge will be reduced to $2.50 per Kw. Again, this reflects the lower costs of serving customers outside of the summer months.

Q. What changes is the Company proposing to the Time of Day Services provided under Rate 16, Rate 26 and Rate 33?

A. Similar to the changes the Company is making to other rate schedules, the Base Rate is now the Basic Service Charge and will be

assessed on a daily basis. The off-peak energy rates will continue to be the same for both the summer and winter periods but the winter on-peak price will now be less than the summer on-peak price. The on-peak period is reduced from 8 a.m. to 10 p.m. to noon to 8 p.m. to better reflect the actual peak periods that occur on the system.

For the General Service Time of Day Schedules 26 and 33, the demand charges are also modified. Both the summer and winter on-peak prices have been increased and the off-peak demand charges have been eliminated.

Q. Is the Company proposing any changes to Large General Service Rate 30?

A. Yes. The Company is proposing to increase the Base Charges and rename that component Basic Service Charge similar to the other rate schedules. The blocked rates are proposed to be eliminated and replaced with the same rate applicable for all Kwh throughout the year. The seasonal pricing signal will be provided to customers through the demand charge which will be increased from $5.00 per Kw to $7.25 per Kw for the summer months and $6.25 per Kw for the winter months for customers taking service at the primary service level and $8.25 per Kw for the summer months and $7.25 per Kw for the winter months for customers taking service at the secondary service level.

Q. Please explain the proposed new Space Heating Service Rate 32.

A. Rate 32 is designed to replace the General Service Dual Fuel Rate

54 and Space Heating Rate 56 that has been closed to new customers since 1984. Both of these rate schedules are similar in that they are designed to serve specific end uses, in particular, space heat loads. But, rather than having 32 customers on one rate schedule and 103 customers on a different rate schedule where both rates are designed for similar purposes, the Company proposes to move these customer loads to the new Rate 32. The new Rate 32 will include Basic Service Charge rates that are higher than those on the current rate schedules and the energy charges on the new Rate 32 will include a winter/summer differential with the summer rate set at the Small General Service Rate 20 energy charge. The design is proposed in order to minimize customer impacts associated with the elimination of Rate 54 and Rate 56.

Q. What changes are you proposing for the rates charged to customers who provide their own distribution equipment?

A. Currently, Montana-Dakota provides a flat five percent discount on the bill of customers on the General Service rate schedules that take service at primary voltage and provide their own transformer and service line from the street to the building. This five percent discount applies to all components of the customers' bill, including the Base Charge, Energy Charge and Demand Charge. In place of the five percent discount, this filing proposes to charge a separate rate that is based on specific costs allocated to the primary, customer-owned services and referred to as the Primary Service Rate. In this way, the cost savings will better reflect the

form and extent of the cost savings experienced by the utility when customers take the primary, customer-owned service. Presently only one customer is taking service at the primary level.

Q. Are there any other rate schedule changes the Company is proposing?

A. For the lighting schedules, the Company is proposing to increase the energy charges in order to recover the increase allocated to the lighting schedules. Private Lighting Rate 24 has also been renamed Outdoor Lighting and the availability clause revised to include all outdoor lighting other than municipal street lighting services proved under Rate 41. For, Municipal Pumping Rate 48, similar to the other rates, the Company is proposing to increase the Base Charge and rename it the Basic Service Charge. The Company is also proposing to institute a summer/winter differential to the demand charge.

A summary of the rate charges for each schedule is provided on page 3 of Rule 20:10:13:99, Statement O, Schedule O-1.

Q. Why is Montana-Dakota proposing seasonal rates at this time?

A. Montana-Dakota is generally a summer-peaking utility. Additionally, Montana-Dakota is a member of the Midcontinent Independent System Operator (MISO) market. The MISO system peaks in the summer. To the extent that the Company can limit its summer peaks and in particular not peak coincident with the MISO peaks, it reduces costs. Thus, providing appropriate price signals to customers to

limit their summer use will help to minimize incremental capacity costs.

Seasonal rates also provide a more accurate method for collecting costs from those customers who cause the costs to be incurred. Because Montana-Dakota is required to construct facilities with adequate capacity to serve the anticipated peak demand on its system, and because its peak demand is so pronounced, some of its capacity is used for only a relatively few hours in the year. Consequently, the cost per hour of use of such facilities is far higher than the average cost of capacity on the system. These higher costs occur in the form of somewhat higher costs of transmission and distribution lines, more expensive transformers with greater capacity, and additional generating plant. In addition, the cost of fuel for generation generally is higher during peak periods because the utility usually is required to run its least efficient plants during the peak periods. Thus, it is appropriate to design rates that reflect the higher costs of providing service during peak periods.

In order to reflect the seasonal cost differences, the proposed seasonal rates will collect a relatively greater portion of the overall costs from those customers who tend to concentrate their usage during the more costly summer peak period. Conversely, the proposed seasonal rates will collect a relatively smaller portion of the overall costs from those customers for whom consumption is more heavily concentrated during the lower-cost, off-peak periods.

Q. Please explain the Company's proposed change to the power factor

penalty charge.

A. Montana-Dakota's tariff requires customers to maintain a power factor between 90 percent lagging and 90 percent leading. If the customer operates outside this range, the maximum 15 minute integrated reactive kilovolt amperes in excess of 50 percent of the maximum 15 minute integrated kilowatt demand for the same month is currently billed at $1.75 per Kvar of such excess demand. This Kvar penalty is designed to act as a penalty so that customers will have an incentive to maintain an adequate power factor and not incur the penalty.

When a customer's power factor is less than 100 percent, the electric system is out of phase causing the efficiency and the capacity of the electric system to be reduced. In order to reflect this fact, and to provide an appropriate penalty, the amount of the penalty should be related to the level of the demand charges. The new Kvar penalty is proposed to be set at $3.35, which is 32 percent of the summer demand charge for Rate 30.

Q. Ms. Aberle, would you please explain the Adjustment Clauses referenced on each of the proposed rate schedules?

A. Yes. The electric service rate schedules each call for the application of three separate adjustment mechanisms. The Adjustment Clauses include:

- **Environmental Cost Recovery Rider** defined as Rate Schedule 57 is proposed to recover the jurisdictional costs of environmental

improvements that are not part of rates established in this rate case as provided for by the South Dakota Codified Laws § 49-34A-99. The request here is to establish the mechanism for future use in recovering applicable expenditures and an adjustment is not proposed to be charged at this time. The proposed tariff is provided in Exhibit No. ___(TAA-3) and included in Appendix B of the Application.

- **Fuel Clause** defined as Rate 58 is the mechanism currently established to recover the cost of fuel and purchased power.
- **Transmission Cost Recovery Rider (TCRR)** defined as Rate Schedule 59 is proposed to recover the jurisdictional costs of new or modified transmission facilities that are not part of rates established in this rate case as provided for by the South Dakota Codified Laws § 49-34A-25.1. The request here is to establish the mechanism for future use in recovering applicable expenditures and an adjustment is not proposed to be charged at this time. The proposed tariff is provided in Exhibit No. ___(TAA-4) and included in Appendix B of the Application.

Q. Would you please briefly describe other changes made to the Company's electric tariff?

A. Yes. Following is a description of other changes the Company is proposing to make to its electric tariff as clearly identified in the legislative copy of the tariffs provided in Appendix B of the Application:

- The Company is proposing a tariff schedule form similar to the form is utilized for natural gas service tariff schedules. Therefore, the proposed electric tariff has been designated as a new volume, Volume No. 2 superseding the entire Volume No. 1 electric tariff.
- As noted above, the Base Rate has been renamed Basic Service Charge and is stated as a daily charge for service under Rate Schedules 10, 16, 20, 25, 26, and 53.
- The Underground Service Charge currently applicable under the Residential Service rate schedules has been eliminated as underground service is now the typical form of service installation and effectively recovered as part of the distribution service costs.
- The Base Fuel and Purchase Power, described by Mr. Jacobson, is proposed to be identified separately on each rate schedule providing the means to separately identify the total cost of fuel and purchased power applicable each month on customers' bills. The current energy rates reflect the fuel established as the base fuel in the last rate case as part of the Energy Charge.
- A new schedule entitled General Provisions Rate 100 is proposed to provide a single point of reference for customer

service related conditions and charges currently stated separated on the following schedules:

- Rules Governing Discontinuance of Service for Non-Payment of Bills -- Rate 101,
- Residential Rate for Permanent Employees -- Rate 102,
- Consumer Deposits – Rate 106,
- Notice to Discontinue Electric Service – Rate 107,
- Reconnection Fee for Seasonal or Temporary Customers – Rate 108,
- Late Payment Charge – Rate 109,
- Method for Computing Initial or Final Bills for Electric Service for Less Than a Full Monthly Billing Period – Rate 113,
- Rules for Application of Electric Service – Rate 114,
- Tax Clause – Rate 130, and
- Rules Covering Utility Services Performed after Normal Business Hours-Rate 135.

Q. Have changes been made to the provisions that you just described as moving to the new General Provisions Rate 100 schedule?

A. I am proposing the following changes:

- A returned check charge of $40.00 per occurrence as allowed by South Dakota Codified Law §57A-3-421 is proposed in Section III. ¶4.
- The Reconnection Charge in Section III. ¶7 applicable when restoring electric service to customers that have disconnected service within the last twelve months (formerly Rate 108) is proposed to increase to $20.00 for non-demand metered services and to $40.00 for demand metered services. The increase is warranted by the cost of the labor and equipment associated with providing this service.
- The Reconnection Charge in Section III. ¶8 applicable when restoring electric service to customers that have been disconnected for non-payment of service (formerly Rate 101) is proposed to increase to $20.00. The increase is warranted by the cost of the labor and equipment associated with providing this service.

The other changes proposed were made to provide consistency with the Company's Natural Gas General Provisions Rate 100 where applicable and to provide a tariff reference to Commission Rules where appropriate. The new Rate 100 will provide customers and employees with a ready reference to the customer service rules. The proposed changes are clearly denoted on the tariff sheets reflecting the legislative

format.

Q. Is the Company proposing any changes to Rate 110?

A. Yes. The Company is proposing to update the Electric Service Rules and Regulations Rate 110 to bring it into conformance with the latest edition of the National Electrical Safety Code, along with other applicable national, state, and local codes. Many of the proposed revisions are self-explanatory in nature. Following is an explanation of those changes that require additional explanation:

- Section 104 (Liability). Montana-Dakota has added this language to be consistent with the Company's Natural Gas Conditions of Service.
- Section 206.3 (Transformer Installations on the Customer's Premises). The Company is proposing that transformers will no longer be installed in the customer's building, but will be located outside. As padmount transformers have become commonly used, the need for a transformer vault inside a customer's building has been eliminated.
- Section 206.6 (Transformer Installations on the Customer's Premises). The Company is proposing, for cases where the transformer is installed adjacent to a driveway or parking lot, the customer shall be responsible for providing barriers and clear zones to protect the transformer from damage and to allow for proper cooling and access. The clear zones

provide space for personnel to open transformer doors to perform necessary maintenance or repairs. The barriers serve to protect the transformer from damage, as well as to prevent injuries or outages associated with a direct collision with the transformer.

- Section 404 – (Services in Raceways). The Company is proposing that metered conductors not be installed in the same raceway as unmetered conductors. This will avoid the possibility that intentional energy diversion could be hidden in a raceway, or that unintentional energy diversion due to faulty wiring could occur in the raceway.
- Section 407 – Deleted (Conductor Switching and Fusing). This section has been eliminated, as the customer's wiring must already be installed in accordance with provisions of the National Electrical Code, state code and local ordinances.
- Section 408 – Deleted (Neutral Grounding). This section has been eliminated, as the customer's neutral must already be grounded in accordance with provisions of the National Electrical Code, state code and local ordinances.
- Section 409 (Overhead Service Drops). This section is renumbered to be Section 407 and changed to reflect the latest edition of the National Electric Safety Code (NESC).

The vertical clearance used by the Company is derived by adding 2 feet for a vertical movement safety factor to the height given in the latest NESC edition.

- Section 410 (Secondary Voltage Underground Service). This section is renumbered to be Section 408 and the proposed changes clarify the costs the customers would incur to convert from overhead to underground service. The Company is proposing that the customer provide a suitable trench and a conversion fee to convert their existing electric service from overhead to underground service. The service line will be provided by the Company. If the service length is 150 feet or less, the conversion fee will be equivalent to the labor and equipment costs incurred by the Company to convert the average 100 feet service line. The fee will be calculated annually, based on the prior year's costs. For services greater than 150 feet the Company will bill for actual labor and equipment costs.
- Section 411 (Mobile Home Service). This section is renumbered to be Section 409. The Company is proposing to pass ownership of the metering pedestal or meter socket and meter mounting device to all mobile home customers. This proposed change would not cause the affected customers to make an immediate investment. Future

maintenance or replacement costs would also be the responsibility of the customer.

- Section 503 (Overcurrent Protection). The proposed revision clarifies that the customers with a primary voltage service should consult with the Company with regard to overcurrent protection.
- Section 602.7 (Meter Socket Specifications). The proposed addition is that only Company-owned or Company-approved devices shall be placed into a meter socket. There are several new electronic devices on the market that are being installed into a meter socket with the utility meter. These devices provide functions such as surge suppression or providing a generator connection point. The Company needs to review the devices, in order to determine the ability of the device to adequately handle the available fault current and the risks associated with the devices' failure. Failure of a surge suppression device may result in damage to the Company's meter, and the failure of a generator connection device could create unsafe conditions for utility personnel.
- Section 702.1 (Voltage Flicker and Harmonics). The Company is proposing to limit the maximum allowable voltage flicker caused by a customer's load to the guidelines in IEEE Standard 141. Limiting the voltage flicker to

generally accepted levels minimizes the probability that one customer could degrade the power quality of neighboring customers.

- Section 702.2 (Voltage Flicker and Harmonics). This proposed addition would limit the harmonics produced by a customer's load to the levels within Section 10 of IEEE Standard 519 "Recommended Practices & Requirements for Harmonic Control in Electric Power Systems" at the point of metering connection. As excessive harmonics can lead to heating and damage in motors and power transformers, it is beneficial to limit the harmonic output to acceptable levels.
- Section 703-Deleted (Water Heaters). It is proposed that this section be eliminated as new electric water heaters conform to the specifications previously set forth in this section.
- Section 704-Deleted (Motion Picture Apparatus). It is proposed that this section be eliminated as new Motion Picture Devices conform to the specifications previously set forth in this section.
- Section 713-Deleted (Lighting Service to Athletic Fields). The Company is proposing to move all customers previously served under this provision to the Outdoor Lighting rate as discussed previously. The Outdoor Lighting rate is now

available to all lighting loads and provides the best available rate to the athletic field lighting installations.

- Illustrations have been revised and an additional illustration has been added.

Q. Does this conclude your direct testimony?

A. Yes, it does.