



UTILITIES CO.

A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
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July 29, 2015

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

Re: Aberle Adopted Testimony of
Cardwell Prefiled Direct
Testimony
Case No. PU-15-90

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith submits eight (8) copies of the Tamie A. Aberle adopted Testimony of Sara J. Cardwell. This testimony was also electronically served to the parties in this proceeding.

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

Sincerely,

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

Tamie A. Aberle
Director of Regulatory Affairs

Attachments

cc: D. Kuntz
P. Sanderson

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

Before the Public Service Commission of North Dakota

Case No. PU-15-90

Tamie A. Aberle Adopted Testimony of Sara J. Cardwell

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

2 A. 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. Are you the same Tamie A. Aberle who prefiled direct testimony in**
8 **this case regarding the effect of the proposed revenue requirement,**
9 **as identified by Mr. Jacobson in his direct testimony, on each of the**
10 **Company's natural gas rate classes and the proposed changes in**
11 **rate design and tariff conditions, including the Company's proposed**
12 **Rate Stabilization Mechanism designated as Rate 89?**

13 A. Yes I am.

14 **Q. What is the purpose of this testimony you are now filing in this**
15 **proceeding?**

16 A. I am adopting the testimony originally filed by Sara J. Cardwell on
17 February 6, 2015 in this proceeding regarding the Projected 2014 and

1 2015 sales and transportation revenues and the results of the embedded
2 class cost of service study.

3 **Q. Is the testimony identical to the testimony submitted by Ms. Cardwell**
4 **on February 6, 2015?**

5 A. Yes it is.

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

8 A. I am sponsoring Page 2 of Statement G, Pages 3 through 7 of
9 Statement M and Statement O.

10 **Q. Would you please explain how the Projected 2014 and 2015 sales**
11 **and transportation service revenues were developed?**

12 A. Yes. The starting point for developing the projected billing
13 determinants and revenues was the normalized sales and transportation
14 service billing determinants set forth on Statement G, page 2. The firm
15 sales under the residential, firm general service and air force rate classes
16 as recorded for the twelve months ended December 31, 2013 were
17 adjusted to reflect normal weather based on regression models for each
18 class of service. The direct or linear relationship between a respective
19 service class' gas use (a dependent variable) and actual heating degree
20 days (an independent variable) allows Montana-Dakota to calculate a use
21 per customer that reflects this relationship on a go forward basis.

22 The statistical functions used by the Company in its regression
23 models, based on a 36-month time frame for actual sales and degree

1 days, provided a baseload use (or constant) per customer, as well as a
2 dekatherm use per degree day. The normalized volumes for the twelve
3 months ended December 31, 2013, were developed by applying the actual
4 customer levels and normal degree days for each month of 2013 to this
5 baseload and use per degree day. The normalized use per customer was
6 then applied to the projected customer levels to derive projected volumes.
7 The Projected 2014 number of customers and dk for the firm classes was
8 based on the actual average customers for the year and the normalized
9 actual dk for the year. Customer projections for 2014 and 2015 for the
10 non-firm classes are based on the actual average customers for the 12
11 months ended October 2014. The 2015 customer projections for the
12 residential and small firm general classes were determined based on
13 applying growth factor to the actual 2014 consumption.

14 **Q. What are the effective growth factors?**

15 A. For the residential customer class and small general service class,
16 the historical growth factor used was 3.2 percent for residential and 4.92
17 percent for small general service to develop the 2014 and 2015 estimated
18 customers and usage. However, after updating 2014 values to actuals,
19 the growth factor between 2014 and 2015 for residential was 3.4 percent
20 and for the small general service class, the growth factor was 6.72
21 percent. The large firm general service class is estimated to remain flat
22 from year end 2014 customer counts and dk.

23 **Q. What was the basis for the projected interruptible service volumes?**

1 A. Separate regression models were run for interruptible customers by
2 location. If a customer was determined to be non-heat sensitive, due to
3 the customer's operating characteristics, volumes were determined for
4 each individual customer based on a review of monthly historical usage
5 over the last three to four years and current operating conditions. Grain
6 drying customers served under the interruptible service rates were
7 excluded because of the margin sharing adjustment that provides a credit
8 to all other customers through the PGA mechanism at 90 percent of actual
9 margins received from grain drying customers on an annual basis as
10 authorized in Case No. PU-13-803.

11 **Q. Please explain the calculation of revenues shown on Statement M,**
12 **Page 4.**

13 A. The actual 2014 billing units for the residential, and small and large
14 general firm classes and the actual normalized 2014 Dk were used in the
15 development of the 2014 revenues by applying the current rates to the
16 billing units and Dk. A similar process was applied to the projected 2015
17 billing units to derive the values. For the interruptible classes, the Dk was
18 calculated based on a 3 or 4 year average or the results of the regression
19 analyses for the heat sensitive customers. To the resulting Dk and
20 number of customers, the existing rates were applied in order to develop
21 the resulting revenues shown on Page 4 of Statement M.

22 **Q. Would you please explain the embedded class cost of service study**
23 **contained in Statement O?**

1 A. Statement O contains a summary of the results of the embedded
2 class cost of service study by the major rate classifications, Residential,
3 Small Firm General, Large Firm General, Air Force Delivery (Rate 64),
4 Small Interruptible Sales and Transportation, Large Interruptible Sales and
5 Transportation and the Minot Air Force Base Distribution. Statement O,
6 pages 1 through 4 provides a report entitled "Cost of Service by
7 Component." This report shows the total dollars and unit cost required
8 under each rate if the Pro Forma rate of return of 7.588 percent were to be
9 earned for the demand, energy and customer cost components of each
10 rate schedule.

11 Statement O, pages 5 through 24, is a report of the rate base,
12 income statement and Pro Forma adjustments as allocated to each rate
13 schedule. The allocator factors are provided in Statement O, Pages 25
14 through 36.

15 The embedded class cost of service study is based on the
16 projected natural gas operations results for the 12 months ended
17 December 31, 2015 as sponsored by Mr. Jacobson.

18 **Q. What were the results of the embedded class cost of service study?**

19 A. The overall North Dakota natural gas rate of return based on
20 projected 2015 results is 5.255 percent. The returns by customer class
21 are as shown below:

Customer Class	ROR
Residential Service	3.421%
Small Firm General Service	8.512%
Large Firm General Service	8.170%
Air Force Delivery Service	55.856%
Small Interruptible Sales & Transportation	3.789%
Large Interruptible Sales & Transportation	12.411%

1 **Q. How did you determine what costs should be assigned to each class**
2 **of customers?**

3 A. The starting point was classifying the functionalized costs by
4 FERC account for all rate base and income statement items as demand,
5 energy or customer related based on the component of service being
6 provided. Demand-related costs are costs that vary with the demand
7 imposed by the customer, energy-related costs are costs that vary with the
8 amount of natural gas used by the customer and customer-related costs
9 are fixed costs driven by the number of customers served.

10 Next the plant, expense and revenue items that were identified as
11 directly related to a specific class of customers were directly assigned to
12 the appropriate class. Finally, the remaining costs were allocated using
13 the various allocation factors shown in Statement O, pages 25-36, on the
14 basis of cost responsibility.

15 **Q. Would you please provide an overview of the allocation process**

1 **including the rationale underlying the choice of allocation factors?**

2 A. Yes. I will start with the plant in service items from the Gas Utility
3 Plant in Service, Statement C starting on Statement O, Page 5. The
4 allocation of distribution plant serves as the basis for allocating many of
5 the rate base items.

6 Turning now to the distribution plant investment; each distribution
7 plant account is analyzed and allocated based on the cause for the
8 investment. Distribution mains, services and meters represent
9 approximately 75 percent of the total gross distribution investment and
10 therefore the allocation of these three accounts drives the allocation of the
11 remaining distribution investment. The investment in distribution mains
12 has been assigned 75 percent to the demand component and 25 percent
13 to the customer component. The amount classified as demand related
14 was allocated to each rate class based on the design day demand
15 attributed to each class and the amount classified as customer related
16 was allocated to each rate class based on the average number of
17 customers in each rate class.

18 The investment in services, service regulators and meters is
19 related solely to a customer connection and therefore classified as
20 customer related. Service regulators and meters were allocated to the
21 rate classes based on Factor 9 which represents a meter weight for each
22 customer class. The meter weights were derived by comparing the
23 installed cost per meter for each rate class to the cost necessary to serve

1 residential customers with the residential class weighted as one. The
2 remainder of the rate base items is self explanatory with the allocation
3 factor noted for each line item.

4 **Q. Can you elaborate on why the investment in distribution mains was**
5 **assigned 75 percent to the demand component and 25 percent to the**
6 **customer component?**

7 A. If all customer classes had equal but minimal gas service needs,
8 the Company would install a system comprised of only two inch mains.
9 Seeing that two inch mains would be the minimal size of a system, it is
10 appropriate to assign a portion of the main costs to the customer
11 component to reflect the system design the Company would employ if all
12 customers were to use little or no gas. In actuality a two inch main system
13 would comprise about 50 percent of the total cost of the system that the
14 Company does have in place. To reflect customer needs, or demands on
15 the system, the Company installs larger mains when customers use more
16 gas than can be served from a two inch main system. The larger mains
17 comprise approximately 50 percent of the Company's system costs.

18 **Q. Would you please continue your discussion of the embedded class**
19 **cost of service study with an explanation of the income statement**
20 **items in the study?**

21 A. The allocation of the income statement items starts on Statement
22 O, Page 13 with the allocation of revenues. As shown, sales and
23 transportation service revenues are directly assigned based on the

1 revenues produced by each rate class. The other revenues are allocated
2 based on the source of the revenue item. Each item is shown along with
3 the allocation factor applied.

4 Operation and maintenance expenses consisting of cost of
5 purchased gas, production, distribution customer accounts, customer
6 service and information, sales and administrative and general expenses
7 are shown starting in Statement O, Page 13 as well. The cost of
8 purchased gas is directly assigned to each class based on the gas costs
9 included in the Pro Forma revenues. The cost of purchased gas is
10 recovered through the gas cost tracking adjustment and is not recovered
11 through the rates that will be established in this rate case. The remaining
12 operation and maintenance expenses are allocated based on cost
13 causation and typically follow the plant investment previously described in
14 the rate base section. The remainder of the income statement reflects the
15 allocation of depreciation expense, taxes other than income and income
16 taxes as denoted by each line item.

17 **Q. Can you please explain the rate class labeled as Minot Air Force**
18 **Distribution found on Statement O?**

19 A. The Minot Air Force Distribution rate class represents the cost of
20 service associated with the Minot Air Force Distribution system Montana-
21 Dakota purchased in 2008. The costs associated with Montana-Dakota's
22 ownership of this system are recovered under a contract with the Minot Air
23 Force Base and set forth on the Air Force Distribution System Rate 65

1 rate schedule authorized by the North Dakota Public Service Commission
2 in Case No. PU-06-470. Montana-Dakota has included an updated cost of
3 service analysis in this case to demonstrate that other customers are not
4 subsidizing this investment under the currently effective contract rate
5 applicable to the Minot Air Force Distribution system.

6 **Q. For what purpose has the embedded class cost of service study**
7 **been used?**

8 A. The study results have been used to guide the allocation of the
9 revenue requirement to the various classes as well as the rate designs
10 applicable to each customer class.

11 **Q. Does this conclude your direct testimony?**

12 A. Yes, it does.