

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

Before the South Dakota Public Utilities Commission

Docket No. NG15-_____

Direct Testimony
of
Sara J. Cardwell

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

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

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

5 A. I am the Manager, Regulatory Affairs–Pricing & Tariffs for Montana-
6 Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources
7 Group, Inc.

8 **Q. What are your responsibilities as Manager, Regulatory Affairs-
9 Pricing & Tariffs?**

10 A. My responsibilities include the preparation of the embedded class
11 cost of service studies, rate designs and miscellaneous tariff revision
12 filings. I also administer utility tariffs and rules and regulations effective
13 for each of the jurisdictions in which Montana-Dakota provides utility
14 service.

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

17 A. I graduated from the University of Wisconsin-Stout with a Bachelor
18 of Science degree in Business Administration and received my Masters in
19 Business Administration from the University of Portland. I have worked for
20 PacifiCorp, Portland General Electric Company, Xcel Energy and the

1 North Dakota Public Service Commission. I started working in my current
2 position at Montana-Dakota in 2014.

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

4 A. Yes. I have previously presented testimony before the Public
5 Service Commissions of North Dakota and Montana as well as the
6 California and Idaho Public Utilities Commissions, the Oregon Public
7 Utility Commission and the Washington Utilities and Transportation
8 Commission.

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

10 A. The purpose of my testimony is to present the results of the class
11 cost of service study.

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

14 A. I am sponsoring Statement N.

15 **Q. Would you please explain the embedded class cost of service study
16 contained in Statement N?**

17 A. Yes. Statement N, Schedule N-1, pages 1 through 5 provide a
18 report entitled "Cost of Service by Component." This report shows the
19 total dollars and unit cost required under each rate if the overall requested
20 rate of return of 7.588 percent is to be earned for the demand, energy and
21 customer cost components of each rate schedule. The rate of return
22 before allocation of the requested increase is also shown on Schedule N-
23 1. As an example, the resulting rate of return on the rate base allocated to
24 residential customers under Residential Service Rate 60 is 2.94 percent
25 and a revenue increase of approximately \$1,977,000 would be necessary
26 to bring the residential rate of return to the overall average return.

Schedule N-1, page 1 also indicates that the customer related component associated with providing service to the residential class is \$16.69 per month. This same information is shown for each rate schedule on pages 2 through 5 of Schedule N-1.

A summary of the results by the major rate classifications, Residential, Small Firm General Service, Large Firm General Service, Small Interruptible Sales and Transportation, and Large Interruptible Sales and Transportation is provided in Statement N, Schedule N-1, pages 6-7. Statement N, Schedule N-2, pages 1 through 45 is a report of the rate base, income statement and pro forma adjustments as allocated to each rate schedule. The allocation factor applied to the total South Dakota gas amount is shown on each line item and allocation factors used to allocate the total South Dakota gas amount to each class and cost component as referenced are provided in Statement N, Schedule N-3.

The embedded class cost of service study is based on the results for South Dakota gas operations recorded for the 12 months ended December 31, 2014 as adjusted to reflect pro forma adjustments as sponsored by Mr. Jacobson.

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

A. The overall South Dakota rate of return, based on the 2014 test period presented by Mr. Jacobson, is 5.09 percent. The returns by customer class are as shown below:

Customer Class	ROR
Residential Service	2.94%
Small Firm General Service	3.30%
Large Firm General Service	13.19%
Small Interruptible Sales & Transportation	18.92%
Large Interruptible Sales & Transportation	3.67%

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 vary with the natural gas
8 commodity the customer uses, and customer-related costs are fixed costs
9 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 N, Schedule N-3, on the
14 basis of cost responsibility.

15 **Q. Would you please provide an overview of the allocation process**
16 **including the rationale underlying the choice of allocation factors?**

17 A. Yes. I will start with the plant in service items on the rate base
18 schedule starting on Statement N, Schedule N-2, page 1. The distribution
19 plant investment serves as the basis for allocating many of the other rate
20 base items. Each distribution plant account is analyzed and allocated
21 based on the cause for the investment. Distribution mains, services and
22 meters represent approximately 94 percent of the total distribution
23 investment and therefore the allocation of these three accounts drives the

1 allocation of the remaining distribution investment. The investment in
2 distribution mains has been assigned 75 percent to the demand
3 component and 25 percent to the customer component. The amount
4 classified as demand related was allocated to each rate class based on
5 the design day demand attributed to each of the first service classes with
6 the interruptible service classes based on a 100 percent load factor
7 assignment. The amount classified as customer related was allocated to
8 each rate class based on the average number of customers in each rate
9 class.

10 The investment in services, service regulators and meters is
11 related solely to a customer connection and therefore classified as
12 customer related. Services were allocated to the rate classes based on
13 Factor 37, Weighted Services at Distribution, representing services
14 weighted by customer class derived by comparing the installed cost per
15 services for each rate class to the cost to serve Residential customers.
16 Service regulators and meters were allocated to the rate classes based on
17 Factor 10, representing total weighted customers, derived by comparing
18 the installed cost per meter for each rate class to the cost necessary to
19 serve Residential customers. The weights were then applied to the
20 number of customers in each rate class. The allocation of the remainder
21 of the rate base items is self explanatory with the allocation factor noted
22 for each line item.

23 **Q. Can you elaborate on why the investment in distribution mains was**

1 **assigned 75 percent to the demand component and 25 percent to the**
2 **customer component?**

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

14 **Q. Would you please continue with an explanation of the income**
15 **statement items in the class cost of service study?**

16 A. Yes. The allocation of the income statement items starts on
17 Statement N, Schedule N-3, page 3 with the allocation of revenues. As
18 shown, sales and transportation revenues are directly assigned based on
19 the revenues produced under each rate schedule. The other revenues
20 are allocated based on the source of the revenue item. Each item is
21 shown along with the allocation factor applied. Operation and
22 maintenance expenses consisting of the cost of purchased gas,
23 production, distribution, customer accounts, customer service and

1 information, sales and administrative and general expenses are shown
2 starting at Schedule N-2, Page 3. The cost of purchased gas is directly
3 assigned to each class based on the gas costs included in pro forma
4 revenues. The cost of purchased gas is recovered through the purchased
5 gas cost adjustment and is not recovered through the rates that will be
6 established in this rate case. Other gas supply expenses are classified as
7 energy related and allocated based on Dk sales (Factor 3) to each class.
8 The remaining operation and maintenance expenses are allocated based
9 on cost causation and typically follow the plant investment previously
10 described in the rate base section. The remainder of the income
11 statement reflects the allocation of depreciation expense, taxes other than
12 income and income taxes as denoted by each line item. Finally, the pro
13 forma adjustments set forth in the Overall Cost of Service section, Rule
14 20:10:13:96, Schedule M, pages 3 through 4 are allocated beginning at
15 Schedule N-2, Page 6. Again the allocations primarily follow the
16 corresponding plant or expense item previously allocated. The allocation
17 of costs to each rate schedule is presented in the same format as
18 described above.

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

21 A. The study results have been used for the purpose of analyzing the
22 various components comprising the total rate applicable to each customer
23 class. In addition to providing the rate of return provided by each

1 customer class, the class study provides the basis for the customer
2 related costs to be collected under the Basic Service Charge component
3 of each rate schedule.

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

5 **A.** Yes, it does.