

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

Before the Public Service Commission of North Dakota

Case No. PU-10-\_\_\_\_

Direct Testimony  
of  
Andrea L. Stomberg

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

2 A. Yes. My name is Andrea L. Stomberg, 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 Vice President of Electric Supply for Montana-Dakota  
6 Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc.

7 Q. **What are your responsibilities as the Vice President of Electric  
8 Supply?**

9 A. My responsibilities include power production and transmission,  
10 system operations and planning, and electric dispatch.

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

13 A. I graduated from the University of Washington with a bachelor's  
14 degree in Geology, from Oregon State University with a Master of Science  
15 degree in Soils, and from the University of Mary, Bismarck, with a masters  
16 in business management. I worked for the North American Coal  
17 Corporation for ten years in surface mine permitting, reclamation planning

1 and oversight. I worked for Montana-Dakota for about 15 years in the  
2 environmental field prior to my current position.

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

4 A. Yes, I have testified before this Commission and filed written  
5 testimony with the Montana Public Service Commission and the  
6 Minnesota and South Dakota Public Utilities Commissions.

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

8 A. The purpose of my testimony is to provide information regarding  
9 Montana-Dakota's electric power supply and related activities that have  
10 contributed to the increase in investment that is the primary driver of the  
11 need for rate relief at this time. I will also provide support for the portion  
12 the Company's request relating to the deferred generation costs.

13 **Q Please describe Montana-Dakota's current power supply and status.**

14 A. Montana-Dakota serves the Company's electric customers in the  
15 states of Montana, North Dakota and South Dakota through an integrated  
16 electric system which has generation and transmission facilities in each of  
17 those states. Montana-Dakota's electric system has a summer peaking  
18 profile with the 2010 summer peak forecasted at 525 MW as published in  
19 the Company's Integrated Resource Plan filed with this Commission on  
20 July 1, 2009. Montana-Dakota plans to meet that demand requirement  
21 with its resource portfolio consisting of demand side management  
22 programs, company owned generation comprised of coal fired resources,

1 natural gas peaking capacity, renewable resources and purchased power  
2 contracts.

3 Power is delivered over Company-owned transmission lines, as  
4 well as lines owned by the Western Area Power Administration (Western)  
5 and Basin Electric Power Cooperative (Basin) under long-term  
6 agreements. Montana-Dakota is a member of the Midwest Independent  
7 Transmission System Operator (MISO). These transmission arrangements  
8 have allowed Montana-Dakota to efficiently serve customers throughout  
9 its service territory with minimal duplication of facilities.

10 **Q. Would you please describe the significant capital investment made**  
11 **by Montana-Dakota in transmission required to reliably meet**  
12 **customer needs and that are included in this request?**

13 A. Since its last filing Montana-Dakota has continued to maintain and  
14 expand its transmission system to meet the demands of its customers for  
15 reliable power. However, load growth, environmental requirements, risk  
16 mitigation and the quest for efficiency at existing facilities have driven the  
17 need for capital expenditures at a higher level than previously  
18 experienced. These investments include facilities serving both the  
19 integrated electric system as well as those required to provide service to  
20 North Dakota customers only.

21 Montana-Dakota shares transmission facilities with the  
22 cooperatives and Western and growth in their service areas also drives  
23 capital costs for the Company. In addition, changes in non-utility facilities

1 can also drive investments; the replacement of the old Memorial Bridge  
2 between Bismarck and Mandan with a new bridge is a recent example of  
3 such a cost. Montana-Dakota's transmission lines hung on the outside of  
4 the Memorial Bridge. This was not possible with the new bridge design,  
5 and Montana-Dakota elected to place the lines underneath the new  
6 bridge. The cost of this project, which was completed in 2007, was  
7 approximately \$6.6 million.

8 Work was recently completed in the Tioga, North Dakota area, in  
9 conjunction with Basin and Western, to make modifications to a Montana-  
10 Dakota substation including a new \$2.7 million transformer, ensuring  
11 continued reliable service in that area.

12 Continued growth in population and power demand in cities served  
13 by Montana-Dakota, especially Bismarck, Mandan, Williston and  
14 Dickinson, as well as power demand requirements in smaller cities and  
15 towns, has resulted in facilities that served reliably for years becoming  
16 fully utilized and unable to accommodate more demand. Some parts of  
17 Montana-Dakota's system are over 50 years old and are simply wearing  
18 out. This has resulted in the need to rebuild or upgrade substations and  
19 lines to ensure continued reliable service. Montana-Dakota has replaced  
20 transformers in numerous small towns throughout North Dakota to  
21 continue to reliably serve growing electric load in those areas. Montana-  
22 Dakota is building a new 230/115 substation north of the Heskett Station  
23 to support growing loads. Portions of this \$10.6 million substation used to

1 serve the integrated system will be operational in 2010. Also in Mandan,  
2 Montana-Dakota is constructing a \$1.7 million distribution substation to  
3 support growth in this area. Other substation and transmission projects  
4 undertaken from 2002 to 2006 include:

- 5 • Bismarck- 26<sup>th</sup> and Expressway conversion to higher voltage
- 6 • New Turnpike Avenue substation in Bismarck for the Pinehurst  
7 retail load
- 8 • New Cabin Creek substation located in Montana to support the  
9 western portion of the integrated system.
- 10 • Beulah-Heskett 115 kV line rebuild
- 11 • Southeast Bismarck 115 kV line rebuild/upgrade.

12 Investment associated with these projects was approximately \$5.8 million.

13 **Q. Describe some of the significant capital projects associated with**  
14 **Montana-Dakota's generation facilities.**

15 A. At Montana-Dakota's power plants, in addition to routine  
16 maintenance and replacements, numerous other projects have been  
17 undertaken since the last electric rate filing. These projects are  
18 substantial in size and have been required by environmental regulations,  
19 recommended by the insurance carrier to minimize risk, made to improve  
20 operating efficiencies, or needed to sustain generation facility operation.

21 Montana-Dakota's need to meet its customer's load requirements  
22 as efficiently as possible and participation in the MISO markets drive the  
23 company to seek any available efficiency from existing generation.

1 Montana-Dakota has a long history of making incremental efficiency  
2 improvements to reduce fuel costs and emissions. Between 2003 and  
3 2009, these improvement projects include:

- 4 • Replacement of process control systems
- 5 • Installation of variable frequency motor drives
- 6 • Turbine component modifications and retrofits
- 7 • Generator excitation system replacement.

8 These efficiency projects represent \$14.2 million of investment during the  
9 period.

10 To ensure the most cost effective compliance with environmental  
11 regulations, Montana-Dakota has conducted numerous studies and tests,  
12 and has installed emissions control equipment where needed. The  
13 environmental projects completed between 2003 and 2009 include:

- 14 • Mercury monitoring system installations
- 15 • Mercury emissions control testing
- 16 • Lewis & Clark Station mercury emissions control system installation
- 17 • Big Stone Plant particulate emissions control system installation
- 18 • Combustion turbine fuel oil spill prevention and containment.

19 These environmental projects account for \$12.7 million of investment  
20 during the period noted.

21 Montana-Dakota has installed additional fire detection and  
22 suppression systems to mitigate the fire risk to the generation facilities.  
23 Redundant equipment has been purchased to provide a back up for the

1 loss of critical, long-lead time equipment such as transformers. Improved  
2 over-speed protection equipment has been installed to better protect the  
3 turbine and generator equipment. From 2003-2009, these risk reduction  
4 projects accounted for \$3.1 million of investment.

5 To ensure sustained operation of the generation facilities a number  
6 of other large projects were undertaken from 2005-2009. These projects  
7 include.

- 8 • Generator rewind
- 9 • Switch gear replacements
- 10 • Replace Heskett #2 FD fan motor
- 11 • Glendive Unit 2 natural gas compression equipment additions
- 12 • Glendive Unit 2 fuel oil heating equipment installation

13 These other operation sustaining projects account for \$6.9 million of  
14 investment during the period.

15 Additionally, necessary work on the turbine and generator, and  
16 boiler element and header replacement at Heskett Station Unit 1 will be  
17 completed in 2010, after being deferred and rescheduled to allow the work  
18 to be completed at a time when labor is expected to cost less, and to  
19 extend the schedule in an effort to avoid overtime charges. The cost of  
20 this project is estimated at \$3.56 million, and should allow that plant to  
21 continue to achieve exceptional capacity factors and reliability.

22 Montana-Dakota also installed and commissioned a 2 Mw diesel  
23 engine driven portable generator in 2004, accounting for an investment of

1 approximately \$335,000. Other significant new generation investment  
2 includes Montana-Dakota's two wind generation facilities and the Glen  
3 Ullin waste heat recovery unit, which will be discussed in detail by Mr.  
4 Neigum.

5 **Q. Describe Montana-Dakota's request for rate recovery of amortized**  
6 **costs associated with securing new electric generation resources.**

7 A. The costs related to Montana-Dakota's efforts in securing new  
8 electric generation fall generally into the following cost categories:  
9 engineering, project development, permitting, legal, other expenditures,  
10 and Allowance for Funds Used During Construction ("AFUDC"). The total  
11 costs include \$2.1 million associated with the Lignite Vision 21 (LV21)  
12 Project, \$13.9 million associated with the Big Stone II project, and  
13 \$332,000 associated with the Milton R. Young III Project.

14 **Q. Why should Montana-Dakota's rates include costs for the Lignite**  
15 **Vision 21 and the Milton R. Young III projects?**

16 A. Montana-Dakota had a long-term power purchase contract for 66  
17 MW that expired in October, 2006. This power purchase contract  
18 accounted for nearly 20 percent of Montana-Dakota's base load capacity.  
19 Given the magnitude of this resource, Montana-Dakota sought new  
20 resources to replace the contract and to meet Montana-Dakota's retail  
21 customers' projected requirements. This included pursuing extension of  
22 the contract, preliminary discussions with OTP regarding the possibility of  
23 participating in a second unit at the Big Stone generation station site, and

1 evaluation of construction of gas turbines and wind resources. At about  
2 the same time, the State of North Dakota proposed its LV21 program, and  
3 Montana-Dakota began to evaluate the development of a 500 MW coal  
4 fired unit in North Dakota under that program. A possible North Dakota  
5 resource was an attractive option to include in evaluations seeking the  
6 best new resource to meet the long term needs of Montana-Dakota's  
7 customers.

8 Having a partner to utilize much of the output of the proposed 500  
9 MW LV21 plant was essential, as Montana-Dakota's projected power and  
10 energy requirements, even including anticipated load growth, were not this  
11 large. When the Company's efforts to locate such a partner were  
12 unsuccessful, the plant design was downsized, ultimately to 175 MW. As  
13 this size plant was under evaluation, Montana-Dakota was approached  
14 again about participating in Big Stone II. Preliminary engineering and  
15 pricing estimates from the LV 21 projects made it clear that the economies  
16 of scale achieved by the larger proposed Big Stone II plant were  
17 significant compared to a smaller plant. There were additional economies  
18 available from the location of Big Stone II next to the existing Big Stone  
19 plant, as well as cost savings to be recognized at the existing plant.  
20 Because of the overwhelmingly favorable economics of the Big Stone II  
21 project relative to the LV21 plant, Montana-Dakota discontinued further  
22 work on this plant design.

1 Montana-Dakota knew from projected load growth analysis that  
2 even with ownership of 116 MW of the Big Stone II plant, additional  
3 capacity would be required almost as soon as that plant became  
4 commercial. Montana-Dakota approached Minnkota Power Cooperative  
5 about ownership in a possible new 250-500 MW multi-owner unit located  
6 at the Milton R. Young plant near Center. This unit was expected to  
7 become commercial in the 2010-2015 time frame, which fit well for a  
8 resource to succeed the Big Stone II, expected to be on-line in 2011.  
9 Montana-Dakota participated in discussions and preliminary engineering  
10 studies including technology, fuel availability and transmission, for about  
11 three years- 2005 to 2007. At that time other participants determined to  
12 indefinitely suspend further effort on this project for a variety of reasons.  
13 Because of current conditions make it is doubtful that further effort will be  
14 given to the project in the near future, Montana-Dakota believes it is  
15 appropriate to amortize the costs incurred in the preliminary studies of the  
16 project.

17 Both LV21 and Milton R. Young III, along with the Big Stone II  
18 plant, were potential regional base load power resources Montana-Dakota  
19 evaluated to provide power to its customers, faced with the expiration of a  
20 significant contract and steady customer demand growth.

21 **Q. Would you describe why Montana-Dakota discontinued its**  
22 **development efforts for Big Stone II and now seeks recovery of**  
23 **development costs associated with the Big Stone II plant?**

1 A. Yes. The Big Stone II project was a proposed multi-owner coal-  
2 fired generating plant to be located at the site of the existing Big Stone  
3 Generating Plant near Big Stone City, South Dakota. At the time that  
4 Otter Tail Power Company (OTP) withdrew from the project in September  
5 2009, Montana-Dakota had a 26.54 percent share of the project and a  
6 corresponding responsibility for shared project costs.

7 In June of 2005, Montana-Dakota entered into project agreements  
8 with six other utilities for purposes of pursuing the project. At that time,  
9 the participants applied for the necessary permits, and began preliminary  
10 engineering and other development work for the project. The Commission  
11 issued an Advance Determination of Prudence for Montana-Dakota's  
12 participation in the project in August 2008, in Case No. PU-06-482, for a  
13 minimum of 121.8 MW up to a maximum of 133 MW and proportionate  
14 ownership share of the associated transmission additions. The  
15 Commission's order was based on an updated analysis by the Big Stone II  
16 participants for the cost of a 500 MW to 580 MW facility with an on-line  
17 date of mid-2013. Other permits were received from the South Dakota  
18 Public Utilities Commission ("SDPUC"), who approved the project Site  
19 Permit in July 2006, and the Minnesota Public Utilities Commission  
20 ("MPUC"), who issued a Certificate of Need ("CON") for the Big Stone II  
21 transmission lines in March 2009. The project also obtained a water  
22 allocation permit, the air quality permit, other necessary permits, and  
23 completed a Federal Environmental Impact Statement for the project. The

1 plant was initially permitted as a nominal 600 MW plant, and was expected  
2 to be commercial in 2011. Montana-Dakota has incurred approximately  
3 \$14.3 million for the permitting, engineering and other development  
4 activities for the project to date. The North Dakota jurisdictional share of  
5 the total costs is 69.351586 percent or approximately \$9.9 million.

6 On September 11, 2009, OTP withdrew from further participation in  
7 the project. Montana-Dakota was one of four participants remaining after  
8 OTP withdrew from the project. The remaining participants actively  
9 sought, but were unable to obtain commitments from new project  
10 participants. Lacking new participants to replace OTP, on November 2,  
11 2009, the project participants determined it was no longer feasible to  
12 continue the development of the Big Stone II project at a size and cost that  
13 was permitted and would be economically efficient.

14 **Q. Why should Montana-Dakota's customers pay for plant development**  
15 **costs that did not ultimately result in a resource providing service to**  
16 **customers?**

17 A. The plant development costs were a necessary cost associated  
18 with Montana-Dakota's continuing effort to secure needed new electric  
19 generating resources to serve its customers. Because the efforts were in  
20 furtherance of potential long term capital projects, the costs associated  
21 with those efforts were properly capitalized. In each instance, Montana-  
22 Dakota efforts as well as the associated costs were prudently incurred.  
23 Montana-Dakota pursued the Big Stone II project after determining that it

1 was a prudent long-term source of reliable electricity for its customers. It  
2 made that determination after it studied an alternative generation source  
3 located in North Dakota that was supported by the State of North Dakota.  
4 The Commission agreed with Montana-Dakota's determination as  
5 evidenced in its Order issued on August 27, 2009 in Docket No. PU-06-  
6 482 finding that Montana-Dakota's investment in Big Stone II was  
7 reasonable and prudent to ensure reliable electric service to their  
8 customers. In that proceeding, the Commission questioned whether  
9 Montana-Dakota had prudently and thoroughly studied potential  
10 generation resources located in North Dakota. When due to changing  
11 circumstances it became clear that the Big Stone II project was not likely  
12 to be constructed, the plant participants discontinued development of the  
13 project.

14 Montana-Dakota seeks recovery of the amortization of the costs  
15 that were prudently incurred toward its efforts in securing generating  
16 resources for its customers, although unfortunately, the plants will not be  
17 built.

18 **Q. Would you please explain future supply plans given the demise of**  
19 **the plant development you just described?**

20 A. Yes. Montana-Dakota has secured a purchased power agreement  
21 that along with existing resources will serve to meet customer needs  
22 through May 31, 2015. The Company is currently analyzing other supply  
23 options that are reliable and cost-beneficial to meet the electric

1 customers into the future.

2 **Q. Does that complete your direct testimony?**

3 **A. Yes, it does.**