# MONTANA-DAKOTA UTILITIES CO. TEN YEAR PLAN FOR SOUTH DAKOTA ELECTRIC PROPERTIES

For Planning Years January 1, 2006 through December 31, 2015

#### Submitted to

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION JULY 14, 2006



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MONTANA-DAKOTA UTILITIES CO. A Division of MDU Resources Group, Inc. 400 North 4th Street Bismarck, North Dakota 58501

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Exhibit A - South Dakota Electric System Map

# 20:10:21:04 <u>Existing Energy Conversion Facilities</u>

Montana-Dakota Utilities Co. (Montana-Dakota) has a 22.7 percent ownership interest in the 415 MW Big Stone Plant located near Big Stone, South Dakota. Otter Tail Power Company of Fergus Falls, Minnesota, operates the plant and reports information required by 20:10:21:04.

#### 20:10:21:05 <u>Proposed Energy Conversion Facilities</u>

Montana-Dakota, together with a number of other utilities operating in the upper Midwest, filed an application on July 20, 2005, with the South Dakota Public Utilities Commission for an Energy Conversion Facility Siting Permit for the addition of a second unit (Big Stone II) at the existing Big Stone Plant near Big Stone, South Dakota.

Otter Tail Power Company made the filing on behalf of the Big Stone Unit II co-owners and will report the Big Stone II information required by 20:10:21:05. The Big Stone II co-owners are:

- Central Minnesota Municipal Power Agency
- Great River Energy
- Heartland Consumers Power District
- Montana-Dakota Utilities Co.
- Otter Tail Corporation dba Otter Tail Power Company
- Southern Minnesota Municipal Power Agency
- Western Minnesota Municipal Power Agency

In December 2005, Montana-Dakota signed a contract to purchase all of the energy and capacity output from a wind farm to be constructed in South Dakota by the end of 2007. It is anticipated that this wind farm will have a nameplate capacity of 31.5 MW, with an accredited summer capacity of up to 7 MW.

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#### 20:10:21:06 <u>Existing Transmission Facilities</u>

Montana-Dakota has no transmission facilities of 250 kilovolts (kV) or more in South Dakota. Exhibit A shows the 115 kV and 46 kV transmission network which serves Montana-Dakota's South Dakota customers. It also shows 47.5 miles of 230 kV line extending northwesterly from the Big Stone Plant. This line transmits electric energy from the Big Stone Plant to Montana-Dakota's transmission network. Montana-Dakota owns this portion of the transmission line. Otter Tail Power Company owns the remaining portion of the line extending northerly.

Montana-Dakota, Basin Electric Power Cooperative (Basin Electric) of Bismarck, North Dakota, and Western Area Power Administration (Western) of Billings, Montana, own a 230 kV transmission line extending from Miles City, Montana through Baker, Montana; Bowman, North Dakota; and Hettinger, North Dakota to New Underwood, South Dakota. Western owns the South Dakota portion of this facility.

### 20:10:21:07 <u>Proposed Transmission Facilities</u>

As part of the Big Stone Unit II project reported in 20:10:21:05, the proposed transmission facilities associated with the unit consist of two high voltage transmission lines that will run from the Big Stone plant to substations in Minnesota. One line will be a 230 kV line from the plant to Morris, Minnesota, and the other will be a 345 kV line from the plant to Granite Falls, Minnesota. The Morris line will be located in Big Stone and Stevens Counties, and the Granite Falls line will be located in Yellow Medicine and Chippewa Counties.

#### 20:10:21:08 Coordination of Plans

Montana-Dakota has been coordinating the construction and operation of electric facilities with other utilities and agencies serving South Dakota since 1945. Montana-Dakota has agreements for joint planning and common use of area facilities with Basin Electric through the year 2007 and agreement with Western through the year 2015.

In 1945, Montana-Dakota signed a wheeling agreement with the United States Bureau of Reclamation, now Western, which coordinated construction of transmission facilities. This agreement was renewed in 1956 and again in 1988. Over the years since, cooperation among Montana-Dakota, Western, and rural electric cooperatives has resulted in numerous interconnections between Montana-Dakota's and Western's systems, avoiding duplication of hundreds of miles of transmission facilities.

In 1972, a thirty-five year agreement was entered into with Basin Electric which provides for joint planning and common use of facilities. Joint planning involving Montana-Dakota and Basin Electric and its member cooperatives continues to provide maximum utilization and benefit of existing and new transmission facilities. Load flow studies provided for under this agreement assure that adequate facilities will be provided to meet expected long-range demands.

Montana-Dakota has interconnection agreements with Otter Tail Power Company, NorthWestern Energy Corporation, and Minnkota Power Cooperative, Inc. These agreements, along with the Basin Electric and Western agreements, provide for the interconnection of Montana-Dakota's bulk transmission facilities with the Mid-Continent Area Power Pool (MAPP) bulk transmission facilities.

Montana-Dakota, Otter Tail Power Company, and NorthWestern Energy Corporation own the 415 megawatt (MW) Big Stone generating station near Big Stone, South Dakota, and associated bulk transmission facilities. Montana-Dakota owns 22.7 percent of the Big Stone Plant. In addition, Montana-Dakota is a participant in another joint venture with Minnkota Power Cooperative, Inc. (agent for Northern Municipal Power Agency), Otter Tail Power Company, and NorthWestern Energy Corporation. This is the 415 MW Coyote generating station located near Beulah, North Dakota, and associated bulk transmission facilities. Montana-Dakota owns 25 percent of the Coyote Station. These cooperative efforts permit

Montana-Dakota to realize economic benefits from construction and operation of a large generating station and to provide the service required of it and its partners through fewer facilities and minimal environmental impact.

To comply with the Federal Energy Regulatory Commission (FERC) Order 2000, Montana-Dakota joined the Midwest Independent System Operator, Inc. (Midwest ISO or MISO) in September 2001. The Midwest ISO is a FERC-authorized Regional Transmission Organization (RTO). MISO commenced tariff administration for the operational control of the transmission systems of its members in February 2002. The RTO has the obligation to coordinate the planning of transmission facilities. Montana-Dakota is actively participating in this planning process and is providing input to MISO in an advisory role. MISO commenced its energy market on April 1, 2005. As part of the market operation, Montana-Dakota's generating units are dispatched by MISO.

Montana-Dakota is a member of the MAPP Regional Transmission Committee, which coordinates the Regional transmission planning with MISO through its Transmission Planning Subcommittee. Montana-Dakota is active in the Northern MAPP and Missouri Basin Subregional Planning Groups of the Transmission Planning Subcommittee. The objective of the Northern MAPP and Missouri Basin Subregional Planning Groups is to provide coordinated planning of transmission systems in North Dakota, South Dakota, and western Minnesota for Montana-Dakota, Otter Tail Power, Minnkota Power Cooperative, Inc., Great River Energy, NorthWestern Energy Corporation, Minnesota Power, Inc., and Xcel Energy. The groups in turn coordinate with other subregional planning groups in MAPP to provide a coordinated regional transmission plan for MAPP.

Montana-Dakota is also a member of the Midwest Reliability Organization (MRO), which in January 2005 replaced MAPP as a North American Electric Reliability Council (NERC) regional reliability council responsible for the development and enforcement of regional and NERC reliability standards. As mentioned above, MAPP continues to exist as a regional transmission group and maintains the MAPP Generation Reserve Sharing Pool and the MAPP Regional Transmission Committee.

# 20:10:21:09 <u>Single Regional Plans</u>

Other than the coordination of plans described in 20:10:21:08, Montana-Dakota is not aware of any single regional plan. Montana-Dakota's memberships in the Midwest Independent System Operator, Inc. (MISO) and the Mid-Continent Area Power Pool (MAPP) provide coordination in operating facilities and assistance in developing joint facilities.

# 20:10:21:10 <u>Submission of Regional Plan</u>

There are no formal regional plans to be submitted.

#### 20:10:21:11 <u>Utility Relationships</u>

Montana-Dakota has several agreements with other electric utilities in its service area. These are described in Section 20:10:21:08 on the coordination of plans. In addition, Montana-Dakota is a member of the Midwest Independent System Operator, Inc., and Mid-Continent Area Power Pool which coordinates the joint operation and planning of electric facilities over the Region and permits Montana-Dakota to participate in the benefits and economics derived from large bulk electric systems. Montana-Dakota is also a member of the Midwest Reliability Organization, a NERC regional reliability council responsible for the development and enforcement of regional and NERC reliability standards.

#### 20:10:21:12 Efforts to Minimize Adverse Effects

The Corporate Environmental Policy of MDU Resources Group, Inc., the parent corporation of Montana-Dakota, states that:

Our company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are:

- *To minimize waste and maximize resources;*
- To support environmental laws and regulations that are based on sound science and cost-effective technology; and
- To meet or surpass all applicable environmental laws, regulations and permit requirements.

Montana-Dakota maintains a liaison with local, state, and federal agencies involved with environmental protection and land use planning in its service area.

Transmission and energy conversion facilities will be designed and located in such a manner to maximize operational efficiency and economic benefits and to minimize impacts upon agriculture, extractable resources, health and safety, plant and animal life, communications, and the visual effect on the surrounding area. Transmission and energy conversion facilities will be sited in compliance with federal, state, and local laws and with the Public Utilities Commission's rules and regulations.

Montana-Dakota has developed plans to comply with the requirements of Title IV of the Clean Air Act Amendments of 1990 at all of its wholly-owned and jointly-owned generating stations. Operating permits under Title V are in place for all plants operated by Montana-Dakota.

Montana-Dakota anticipates that additional reductions in sulfur dioxide and nitrogen oxide emissions will be required with the next ten years.

#### 20:10:21:13 <u>Efforts Relating to Load Management</u>

Since 1987, Montana-Dakota has implemented Integrated Resource Planning. The process analyzes supply-side options and demand-side management (DSM) programs and determines the best means of providing electric energy to Montana-Dakota customers. Examples of supply-side options include central generating stations or alternate energy sources, while DSM programs include load management and conservation. The first integrated resource plan, or IRP, was published in October 1989, and the most recent IRP was published on September 15, 2005; both Plans are on file with the Public Utilities Commission.

Currently, Montana-Dakota has 2.0 MW of interruptible loads on its Integrated System, which comprises the service territories in Montana, North Dakota, and South Dakota. As outlined in the 2005 IRP, Montana-Dakota will implement an additional 6.5 MW of DSM and conservation measures during the 2006-2010 time period. These programs will result in approximately 38,000 MWh energy savings.

The effects of load management programs in South Dakota are, however, expected to be relatively small for the reported ten-year period. This is because the number of customers served by Montana-Dakota in South Dakota is a small percentage (8.2% in 2005) of those served on the Integrated System, In addition, a high percentage of these are residential customers located in small communities with no industry and few large commercial establishments.

There are load management procedures available to customers on a voluntary basis which are expected to be beneficial in reducing peak load demand and energy consumption.

- Montana-Dakota offers financial incentive to those customers willing to switch to an
  alternate fuel source for their space heating requirements during periods of high demand
  on Montana-Dakota's Integrated System. Marketed as the "Econo Heat" program, these
  dual-fuel space heating service rates also include controlled electric water heating.
- 2. Montana-Dakota offers optional residential and general service time-of-day rates which provide for low "off-peak" rates and higher "on-peak" rates. This service offers an incentive to those customers who are willing to shift loads away from the time of day where loads are heaviest on the system.

# 20:10:21:14 <u>LIST OF REPORTS</u>

NONE

# 20:10:21:15 Changes in Status of Facilities

No significant changes have occurred at Montana-Dakota's South Dakota facilities.

# 20:10:21:16 Projected Electric Demand (Megawatts)

	South Dakota		Integrated System	
Year	Summer Peak Demand (MW)	Winter Peak Demand (MW)	Summer Peak Demand (MW)	Winter Peak Demand (MW)
2006	32.9	22.6	483.1	397.7
2007	33.4	23.0	490.5	403.7
2008	33.8	23.3	496.5	408.6
2009	34.2	23.5	502.3	413.3
2010	34.6	23.8	509.0	418.9
2011	35.0	24.1	514.2	423.1
2012	35.3	24.3	519.4	427.4
2013	35.7	24.6	524.6	431.6
2014	36.0	24.8	529.8	435.9
2015	36.4	25.0	535.0	440.1

# 20:10:21:17 <u>Changes in Electric Energy (Megawatt-hours)</u>

South Dakota Total Annual <u>Energy (MWh)</u>	Percentage of Change
144,644	
146,433	1.2%
147,697	0.9%
148,833	0.8%
149,868	0.7%
150,938	0.7%
151,965	0.7%
152,896	0.6%
153,542	0.4%
154,209	0.4%
	Total Annual Energy (MWh)  144,644  146,433  147,697  148,833  149,868  150,938  151,965  152,896  153,542

# 20:10:21:18 <u>Map of Service Area</u>

Enclosed is Exhibit A which shows Montana-Dakota's South Dakota Service Area.

