

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

CASE NO. EL05-022

IN THE MATTER OF THE APPLICATION BY OTTER TAIL POWER COMPANY

ON BEHALF OF THE BIG STONE II CO-OWNERS

FOR AN ENERGY CONVERSION FACILITY SITING PERMIT FOR THE

CONSTRUCTION OF THE BIG STONE II PROJECT

DIRECT TESTIMONY

OF

DAVID P. GESCHWIND

DIRECTOR OF OPERATIONS AND CHIEF OPERATING OFFICER

SOUTHERN MINNESOTA MUNICIPAL POWER AGENCY

MARCH 15, 2006



TESTIMONY OF DAVID P. GESCHWIND

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1 **BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

2 **DIRECT TESTIMONY OF DAVID P. GESCHWIND**

3 **I. INTRODUCTION**

4 **Q: State your name and business address.**

5 A: My name is David P. Geschwind. 500 First Avenue SW, Rochester, Minnesota 55902.

6 **Q: By whom are you employed, and in what capacity?**

7 A: I am the Chief Operating Officer at the Southern Minnesota Municipal Power Agency
8 (SMMPA). I am primarily responsible for directing SMMPA's power system operations, power
9 marketing, generation, and transmission functions. My position reports directly to SMMPA's
10 Chief Executive Officer.

11 **Q: What is your educational background?**

12 A: I have a Bachelor of Science degree in electrical engineering from the University of
13 Illinois and a Master of Business Administration degree from the University of Kansas. I am a
14 registered professional engineer.

15 **Q: What is your employment history?**

16 A: I joined SMMPA in 1998 as the Director of Planning, Contracts, and Marketing. Since
17 that time, I have had several roles at SMMPA before assuming my current role and
18 responsibilities as the Chief Operating Officer. Prior to joining SMMPA, I was employed with
19 the consulting engineering firm of Burns & McDonnell in Kansas City, Missouri for
20 approximately ten years. While at Burns & McDonnell, I was involved in conducting a variety
21 of planning analyses for the firm's utility clients, including resource planning studies,
22 transmission planning studies, and economic feasibility analyses.

1 **Q: What professional organizations do you belong to?**

2 A: I have been active within the Mid-Continent Area Power Pool (MAPP) organization and
3 have served on committees related to the power and energy market and the generation reserve
4 sharing pool. I am on the utility advisory board for the University of Minnesota Center for
5 Electric Energy. I am also SMMPA's alternate member of the board of directors of Western
6 Fuels Association, a fuel-supply cooperative that supplies coal for SMMPA's largest coal-fired
7 resource.

8 **II. PURPOSE AND SUMMARY OF TESTIMONY**

9 **Q: What is the purpose of your testimony?**

10 A: The purpose of my testimony is to provide information on SMMPA and why it chose to
11 participate in the Big Stone Unit II project.

12 **Q: Please summarize your testimony.**

13 A: SMMPA is a non-profit municipal corporation and political subdivision of the State of
14 Minnesota with 18 member municipal utilities. SMMPA currently meets its load-serving
15 obligations to its members through a combination of conventional resources, renewable
16 resources, and demand-side management programs. Through SMMPA's integrated resource
17 planning process and subsequent planning efforts, SMMPA has identified baseload resources as
18 part of SMMPA's least cost plan for meeting projected resource needs. After the completion of
19 SMMPA's most recent integrated resource plan, SMMPA undertook an effort to identify specific
20 resource and purchase options consistent with the identified least cost plan. SMMPA's
21 evaluation of the available resource options indicated that Big Stone Unit II would be the most
22 economical and viable baseload resource for SMMPA to pursue.

1 **III. DESCRIPTION OF COMPANY**

2 **Q: Please describe your company.**

3 A: SMMPA, incorporated in 1977, is a municipal corporation and political subdivision of
 4 the State of Minnesota. SMMPA was organized under an agreement among member
 5 municipalities for the purpose of securing and supplying economical and reliable electric power
 6 and energy to the members. Under Minnesota law, SMMPA is empowered, among other things,
 7 to (1) acquire, construct and operate generation and transmission facilities, (2) purchase, sell,
 8 exchange and transmit electric energy within and outside the State of Minnesota, and (3) issue its
 9 obligations to carry out any of its corporate purposes and powers. SMMPA may exercise the
 10 power of eminent domain in the purchase of property. Neither the Minnesota Public Utilities
 11 Commission nor any other outside regulatory agency regulates SMMPA's rates. Our rates our
 12 established by our Board of Directors.

13 SMMPA's members consist of the following 18 Minnesota municipalities, each of which
 14 owns and operates an electric utility system: Austin, Blooming Prairie, Fairmont, Grand Marais,
 15 Lake City, Litchfield, Mora, New Prague, North Branch, Owatonna, Preston, Princeton,
 16 Redwood Falls, Rochester, St. Peter, Spring Valley, Waseca, and Wells.

17 These municipalities represent a population of approximately 215,000 persons. SMMPA
 18 has entered into Power Sales Contracts with each of the members. The term of each Power Sales
 19 Contract extends to April 1, 2030, and thereafter until terminated upon one year's prior notice by
 20 either party. With the exception of the Power Sales Contract with the city of Rochester,
 21 Minnesota, each Power Sales Contract requires SMMPA to sell to the Member, and the Member
 22 to purchase from SMMPA, all electric power and energy required by such Member for the

1 operation of its municipal electric system for the term of the Power Sales Contract. The
 2 maximum amount of power and energy sold to the city of Rochester, on the other hand, is
 3 limited to the “contract rate of delivery” as defined in the Power Sales Contract. SMMPA and
 4 Rochester have agreed that Rochester’s contract rate of delivery is 216 MW.

5 **Q: Describe SMMPA’s supply resource portfolio.**

6 A: SMMPA owns a 41% undivided ownership interest in the Sherburne County Generating
 7 Unit No. 3 (“Sherco 3”) in Becker, Minnesota, with a net capacity of approximately 884 MW.
 8 Sherco 3 commenced commercial operation on November 1, 1987. Northern States Power
 9 Company (a wholly-owned subsidiary of Xcel Energy, Inc., “NSP”) owns the remaining 59%
 10 undivided ownership interest in Sherco 3 and is the construction and operating agent for the unit.
 11 Sherco 3 is fired with low-sulfur, sub-bituminous coal.

12 In addition, SMMPA has entered into capacity purchase agreements with fifteen
 13 members that own their own generating resources. SMMPA has entered into pass-through
 14 capacity purchase agreements with (1) Austin, for its coal-fired steam unit, its gas-fired steam
 15 units and for its gas-fired combustion turbine unit; (2) Owatonna, for its gas-fired steam unit and
 16 for its gas-fired combustion turbine unit; (3) Fairmont, for its gas-fired steam units and for its
 17 diesel units, and (4) Blooming Prairie, Litchfield, Mora, New Prague, North Branch, Preston,
 18 Princeton, Redwood Falls, Spring Valley, and Wells for their respective diesel units.

19 SMMPA has also entered into quick-start capacity purchase agreements with Blooming
 20 Prairie, Grand Marais, North Branch, Princeton, Redwood Falls and St. Peter for new diesel units
 21 with 10-minute start capability. Under both forms of these contracts, approximately 235 MW of
 22 capacity is available to SMMPA, including one coal-fired unit with an aggregate rating of

1 approximately 30 MW, eight oil or natural gas-fired steam units with an aggregated rating of
 2 approximately 67 MW, forty-eight diesel units with an aggregate rating of approximately 117
 3 MW and two combustion turbine units with an aggregate rating of approximately 21 MW.
 4 SMMPA also has 10 MW of leased diesel units located at Austin.

5 In 2003, SMMPA installed two 950 kW wind turbines that were interconnected to the
 6 City of Fairmont's distribution system. Between December 2004 and March 2005, SMMPA
 7 installed two additional 1.65 MW wind turbines in Fairmont and two 1.65 MW wind turbines in
 8 Redwood Falls, Minnesota.

9 SMMPA also purchases the net output of the Olmsted County Waste-to-Energy (OWEF)
 10 facility under a multi-year agreement. Under Minnesota law, that facility has been designated as
 11 a renewable biomass facility, and SMMPA and OWEF are currently renegotiating their
 12 agreement to reflect the renewable energy value of the facility.

13 SMMPA's resource portfolio also contains an aggressive demand side management
 14 (DSM) component. SMMPA and its members provide an extensive array of load management
 15 and conservation programs and rebates to residential, commercial and industrial market
 16 segments. In fact, SMMPA and its members received national Energy Star[®] awards in 2003 and
 17 2004 from the U.S Department of Energy and the U.S. Environmental Protection Agency for
 18 their program efforts. SMMPA's resource planning process uses a capacity expansion modeling
 19 process that ensures that DSM resources are considered on par with other supply alternatives.

20 **Q: Describe, generally, SMMPA's transmission arrangements.**

21 A: In order to fulfill its obligations under the power sales contracts and capacity purchase
 22 agreements, SMMPA has entered into a variety of transmission arrangements. SMMPA is a

1 party to a shared transmission agreement with Dairyland Power Cooperative and an integrated
 2 transmission agreement with Great River Energy. SMMPA has certain rights to use transmission
 3 facilities included within the shared transmission systems, regardless of ownership, in serving its
 4 members. SMMPA also presently obtains network transmission services from NSP and the
 5 Midwest Independent Transmission System Operator (MISO).

6 SMMPA has joined MISO as a market participant for its loads in the control areas of
 7 Xcel Energy, Alliant Energy, and Great River Energy. For its loads in the Great River Energy
 8 control area, SMMPA is operating under a transmission service agreement that has been “carved-
 9 out” of the MISO market. This effectively allows SMMPA to serve its members under
 10 transmission arrangements that pre-existed MISO’s start-up. SMMPA also has loads in its own
 11 control area and in the Dairyland Power Cooperative control area that are not currently a part of
 12 MISO. However, SMMPA anticipates that it will be moving its entire control area into the
 13 MISO footprint effective April 1, 2006, when its grandfathered network transmission service
 14 with NSP terminates.

15 **Q: Describe the governance structure of your company.**

16 A: Representatives from the three members with the greatest number of votes under the
 17 weighted voting formula in SMMPA’s formation agreement (currently Rochester, Austin, and
 18 Owatonna) each have a seat on SMMPA’s Board of Directors. The remaining four Board
 19 members are elected by the representatives on the basis of one vote for each representative.
 20 Voting on Board matters is based upon one vote per Board member.

21 **IV. INTEREST IN BIG STONE UNIT II**

22 **Q: Why did the company become interested in participating in Big Stone Unit II?**

1 A: SMMPA became interested in participating in Big Stone Unit II shortly after completing
 2 its 2003 integrated resource plan (IRP), which it files with the Minnesota Public Utilities
 3 Commission (MPUC) and which effectively guides our resource planning. That IRP, accepted
 4 and approved by the MPUC, indicated SMMPA would have a future need for intermediate and
 5 base load resources. Sensitivity analyses conducted as part of our 2003 IRP indicated that
 6 SMMPA's least cost plan would shift from away from intermediate resources toward base load
 7 resources under higher gas price scenarios. In fact, subsequent to the completion of the IRP,
 8 natural gas price increases created the need for SMMPA to re-evaluate its projected need for
 9 intermediate resources, which typically rely on natural gas. Additional modeling using revised
 10 natural gas price projections confirmed that base load coal resources were projected to be the
 11 lowest cost resources for SMMPA. Recent natural gas prices have exceeded even the
 12 assumptions used in the high gas cost scenarios analyzed in the IRP. Thus, our resource
 13 planning indicated that a base load resource was most economical for SMMPA.

14 A key assumption made in SMMPA's modeling of its future resource needs was the
 15 assumption that SMMPA would most likely participate with other partners in the construction of
 16 future base load resources. Because SMMPA's future resources are projected to be added in
 17 approximately 50 MW blocks, economies of scale would be difficult to achieve independently.

18 Shortly after the completion of SMMPA's IRP, we began a process of identifying
 19 particular projects and purchase opportunities that would be available for consideration. Our
 20 primary goal was to identify projects consistent with the results of the IRP. As mentioned above
 21 and consistent with the supply-side recommendations from the IRP, SMMPA sought base load
 22 resources. In our discussions with other regional utilities and independent power producers

1 about future base load resources, it became apparent that the Big Stone Unit II project was the
 2 most viable project for the Minnesota region. SMMPA had expressed to Dairyland Power
 3 Cooperative an interest in participating in a potential coal-fired project that Dairyland was
 4 attempting to develop in northern Iowa. However, Dairyland elected not to proceed with that
 5 project and instead chose to participate in the Weston 4 coal-fired project in Wisconsin. Once
 6 that occurred, SMMPA expressed an interest in participating in a portion of Big Stone Unit II.
 7 However, at that point, the project was fully subscribed. It wasn't until one of the project
 8 participants dropped out of the project that SMMPA was able to participate.

9 **Q: What general factors did the company consider in determining there was a need for**
 10 **participating in the ownership of the proposed Big Stone Unit II?**

11 A: The general factors SMMPA considered in determining the need to participate in Big
 12 Stone Unit II included:

- 13 • The type of resource (i.e., base load versus peaking) and its fit with SMMPA's projected
- 14 resource needs;
- 15 • The commercial viability of the resource technology;
- 16 • The proposed in-service date of the unit;
- 17 • The ability of the regional transmission system to deliver the output of the facility;
- 18 • The anticipated capital and operating cost of the resource; and
- 19 • The mutual interests that exist among SMMPA and the other project partners.

20 These factors were considered either qualitatively, quantitatively, or both, in our evaluation to
 21 participate in Big Stone Unit II.

22 **Q: What percentage of the output of Big Stone Unit II has SMMPA committed?**

1 A: SMMPA is contractually committed to 7.833333% of the output of Big Stone Unit II.
 2 Assuming the unit has a net capacity of 600 MW, SMMPA's share is proposed to be 47 MW.

3 **Q: How does SMMPA intend to pay its share of the construction and operating costs of**
 4 **the proposed Big Stone Unit II?**

5 A: To pay for its share of the construction costs, SMMPA is currently expecting to issue tax-
 6 exempt long-term revenue bonds. Additional funding needs could be met with the issuance of
 7 commercial paper. SMMPA's share of the operating costs of Big Stone Unit II, along with the
 8 principal and interest payments of the bonds and any commercial paper issuances, will be
 9 recovered in the wholesale rates charged to SMMPA's members.

10 **V. BENEFITS AND ALTERNATIVES OF BIG STONE II**

11 **Q: What benefits do you see Big Stone Unit II affording SMMPA's customers?**

12 A: Big Stone Unit II will provide SMMPA's customers with a reliable future baseload
 13 resource that is consistent with the type of resource identified in SMMPA's planning studies as
 14 the lowest cost alternative. In particular, Big Stone Unit II will provide SMMPA with a needed
 15 source of low-cost energy using proven technology to meet SMMPA's growing energy needs.
 16 Big Stone Unit II will also allow SMMPA to minimize its exposure to the volatile natural gas
 17 markets that have been providing upward price pressure on regional electricity prices and
 18 SMMPA's costs.

19 Without Big Stone Unit II, SMMPA projects it will need to rely more and more upon its
 20 relatively expensive oil and gas-fired resources to serve its projected loads. After Big Stone Unit
 21 II is in service, we project that our reliance on oil and gas-fired generation will decrease and so
 22 will our operating costs.

1 **Q: What alternatives exist to Big Stone Unit II for your customers in the timeframe**
 2 **beginning in 2011 and beyond?**

3 A: There are different alternatives to Big Stone Unit II that exist for SMMPA, but they are
 4 projected to be higher cost than Big Stone Unit II. For example, natural gas options such as
 5 combustion turbines or combined-cycle units could be constructed in time to meet SMMPA's
 6 needs. While these types of units enjoy capital costs that are lower than those of coal-fired units,
 7 their operating costs are higher. The operating cost difference between gas-fired units and coal-
 8 fired units is now even more exaggerated with the recent run-up in natural gas prices. As stated
 9 earlier, SMMPA's planning analyses has indicated the need for additional low-cost energy
 10 resources. Our planning model has indicated that Big Stone Unit II would be a lower-cost
 11 alternative than the available gas-fired options. In fact, study work performed by R.W. Beck on
 12 behalf of SMMPA showed participating in Big Stone Unit II would provide SMMPA with a
 13 projected net-present-value savings of approximately \$90 million below the cost of using gas-
 14 fired resources to meet SMMPA's 2011 resource needs.

15 Renewable resources could be an alternative to Big Stone Unit II, but we do not believe
 16 that renewable resources can completely replace the need for Big Stone Unit II. One of the
 17 difficulties with using renewable resources such as wind generation to replace traditional
 18 resources, such as a Big Stone Unit II, for instance, is the lack of accredited capacity that can be
 19 achieved from wind resources. While SMMPA needs resources capable of producing low-cost
 20 energy, it also needs capacity to meet its capacity requirements under the MAPP generation
 21 reserve sharing pool. From a pure capacity standpoint, because of the intermittent nature of wind
 22 generation and the MAPP rules for capacity accreditation, SMMPA would have to install

1 approximately 5 MW of nameplate wind capacity for every 1 MW of nameplate capacity from
2 Big Stone Unit II to arrive at the same level of MAPP-accredited capacity. Our analyses show
3 that Big Stone Unit II is a lower-cost alternative for SMMPA than a renewable-only expansion
4 scenario.

5 **Q: Does this conclude your testimony?**

6 **A: Yes.**