

**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**

**PREFILED REBUTTAL TESTIMONY**

**OF**

**TERRY GRAUMANN**

**MANAGER OF ENVIRONMENTAL SERVICES**

**OTTER TAIL POWER COMPANY**

**JUNE 9, 2006**



**PREFILED REBUTTAL TESTIMONY OF TERRY GRAUMANN**

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1                   **BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

2                   **PREFILED REBUTTAL TESTIMONY OF TERRY GRAUMANN**

3   **I.       INTRODUCTION**

4   **Q:       Please state your name and occupation.**

5   A:       My name is Terry Graumann and I am the Manager of Environmental Services for Otter  
6   Tail Power Company.

7   **Q:       Did you provide direct testimony in this proceeding?**

8   A:       Yes I did. My direct testimony has been marked as Applicants' Exhibit 16.

9   **Q:       Whose direct testimony are you responding to?**

10   A:       I am responding to the testimony of South Dakota Staff witness Olesya Denney and  
11   Intervenor Mary Jo Stueve.

12   **Q:       What issues do you address in your rebuttal testimony?**

13   A:       I address the issues of mercury control, calculation of environmental impacts, the federal  
14   Environmental Impact Statement, and the status of other permits and authorizations required for  
15   Big Stone Unit II.

16   **II.       MERCURY**

17   **Q:       What commitments are the Applicants prepared to make to control emissions of**  
18   **mercury from both Big Stone Unit I and Big Stone Unit II?**

19   A:       The co-owners of Big Stone Unit II have committed to a voluntary site-wide cap of 189  
20   pounds of mercury per year at the Big Stone site beginning three years after commercial  
21   operation of Big Stone Unit II to afford the Applicants sufficient time to test and implement  
22   commercially available, technically feasible mercury emissions control measures. The 189

1 pounds reflects the amount of mercury emissions from Big Stone Unit I in 2004. On May 31,  
 2 2006, I wrote to the South Dakota Department of Environment and Natural Resources and put  
 3 this commitment of the co-owners in writing. A copy of my May 31 letter is attached as  
 4 Applicants' Exhibit 34-A.

5 As I explained in my letter, this commitment is significant because even though electrical  
 6 output from the combined units will increase to 230% of the current capacity, mercury emissions  
 7 from both units will not increase above the amount emitted during 2004. Using the New Source  
 8 Performance Standard for new units ( $42 \times 10^{-6}$  lb/MWh) as a benchmark, the addition of Big  
 9 Stone Unit II alone would have represented an expected increase of approximately 210 lbs/year  
 10 (i.e., we would be limited to the  $42 \times 10^{-6}$  lb/MWh following the 180 day shakedown period from  
 11 the date that fuel is first burned in the boiler).

12 Under the commitment made by the co-owners, there will be no such increase from the  
 13 site as a whole. The commitment has the added benefit of operation flexibility -- the owners can  
 14 put resources to work where it will control mercury most effectively and efficiently. Because the  
 15 owners must purchase allowances in excess of those allocated under the Clean Air Mercury Rule  
 16 and the South Dakota rules, they will have ongoing incentives to reduce mercury emissions.

17 **Q: Who will enforce the annual site limitation?**

18 A: The South Dakota DENR will enforce and regulate the site cap as part of the Applicants'  
 19 Prevention of Significant Deterioration Construction Permit and future Title V Permit to  
 20 Operate.

21 **Q: What potential adverse environmental impacts are expected from the emission of**  
 22 **mercury from operation of Big Stone Unit II?**

1 A: None. Ms. Denney in her testimony and other Interveners in their testimony have  
 2 expressed a concern about the possibility of adverse impacts from an increase in the emissions of  
 3 mercury when Big Stone Unit II comes online. These concerns are based on the assumption that  
 4 mercury emissions from the Big Stone site as a whole will more than double when Big Stone  
 5 Unit II goes into operation. However, as I have explained, the co-owners have committed to  
 6 keep mercury emissions from both units at the level they are today from Unit I. Because the  
 7 total emissions of mercury from the Big Stone site will not increase, no additional impacts  
 8 should occur.

9 Ms. Stueve, in her direct testimony, cited a study from EPA prepared in 1997, for the  
 10 proposition that mercury emissions from power plants are likely to result in mercury "hot spots"  
 11 (i.e. localized areas of high ambient mercury deposition). The 1997 study predates EPA's  
 12 determination that it was not necessary or appropriate to regulate coal-fired power plants under  
 13 hazardous air pollutant provisions because of mercury emissions. See 70 Fed. Reg. 15994  
 14 (March 29, 2005). EPA's determination is based on the realized or projected effect of new air  
 15 emission control programs that have been implemented since this earlier study or that have been  
 16 adopted and will be implemented, and which have the intent or co-benefit of reducing mercury  
 17 emissions. These other control programs include Phase II of the Acid Rain Program, the NOx  
 18 SIP (State Implementation Plan) Call, the Clean Air Interstate Rule, and the Clean Air Mercury  
 19 Rule. Contrary to the earlier 1997 study cited by Interveners, EPA subsequently found, based on  
 20 computer modeling, that due to the reductions of mercury emissions resulting from these other  
 21 programs, mercury emissions will not result in "hot spots." 70 Fed. Reg. 15994, 16027 -28  
 22 (March 29, 2005).

1 **Q: Given that the 189 lbs Hg/yr site-side cap is still in excess of the South Dakota**  
2 **budget for mercury allowances, have the Applicants considered the monetary risk**  
3 **associated with the requirement to either obtain additional mercury removal or purchase**  
4 **mercury emission credits or allowances?**

5 **A:** Yes, we are aware that there will be costs incurred in installing mercury control  
6 equipment or purchasing emission allowances. We do not know what the next generation of  
7 emission control equipment will cost but it is certain it will be several millions of dollars in  
8 capital costs and annual operating costs. The cost of mercury emission allowances has not been  
9 determined either. Estimates range from a few thousand dollars per pound to tens of thousands  
10 and hundreds of thousands of dollars per pound.

11 **III. ENVIRONMENTAL EFFECTS**

12 **Q: Did the Applicants qualitatively examine the environmental effects of the proposed**  
13 **Big Stone Unit II?**

14 **A:** Yes, we did. The potential environmental effects are described in detail in the  
15 Application and in testimony by various witnesses.

16 **Q: Will Big Stone Unit II pose a threat of serious injury to the environment or health of**  
17 **nearby inhabitants because of its potential environmental impacts?**

18 **A:** No, as described in the Application, we have not identified any serious injuries to the  
19 environment or health that would be caused by Big Stone Unit II.

20 **Q: Did the Applicants attempt to “calculate” the potential environmental effects of Big**  
21 **Stone Unit II?**

1 A: No, we didn't attempt to put a dollar figure on the potential environmental effects  
 2 associated with Big Stone Unit II.

3 **Q: Why didn't you attempt to "calculate" the potential environmental effects?**

4 A: In the usage and context of ARSD 20:10:22:13, the Applicants interpreted "calculate" to  
 5 mean "to evaluate" or "to forecast consequences." That interpretation is consistent with the  
 6 remaining portion of ARSD 20:10:22:13, which asks the applicant to provide a description of the  
 7 existing environment, estimates of changes in the existing environment, and an identification of  
 8 irreversible changes. In that context, the Applicants believed that a narrative description was not  
 9 only consistent with the rule requirements, but also common regulatory practice.

10 **Q: What was your understanding regarding the interpretation and approach followed**  
 11 **by the South Dakota PUC in other matters involving a request for an Energy Conversion**  
 12 **Facility Siting Permit?**

13 While I have not reviewed all of the previous submittals, I did review Basin Electric's  
 14 application for their East Side Peaking Project dated December 2004 and the descriptive  
 15 evaluation that is included in the Big Stone Unit II application appears to be consistent in  
 16 approach to Basin's application. The Basin Electric Application did not attempt to calculate the  
 17 environmental effects in monetary terms but rather provided a narrative description of the  
 18 possible environmental effects.

19 **IV. FEDERAL ENVIRONMENTAL IMPACT STATEMENT**

20 **Q: What is the current schedule for development of the Federal Environmental Impact**  
 21 **Statement (EIS)?**

1 A: EPA published the Notice of Availability of the Draft EIS in the May 19th Federal  
 2 Register. Western's Notice of Availability and Public Hearings was published in the May 23,  
 3 2006 Federal Register. Western will hold public hearings in the next week at the following  
 4 locations to take comments on the DEIS:

- 5 June 13 Big Stone City, SD
- 6 June 14 Morris, MN
- 7 June 15 Granite Falls, MN
- 8 June 16 Benson, MN

9 There is a 45-day public comment period that is slated to close on July 3, 2006.  
 10 Following close of the public comment period, Western will incorporate the public comments  
 11 into the final EIS. At that time, Western will issue a Record of Decision and announce the  
 12 availability of the Final EIS. The current schedule shows the release of the Record of Decision  
 13 near the end of December 2006.

14 **Q: Has a copy of the Draft EIS been distributed to the parties in this case?**

15 A: Yes it has.

16 **Q: When and how did the distribution occur?**

17 A: Copies were mailed for overnight delivery to all parties on the service list in this docket  
 18 on May 5, 2006. Copies were also sent to all parties and participants in the certificate of need  
 19 proceeding for transmission facilities before the Minnesota Public Utilities Commission.

20 **Q: Was notification on the availability of the Draft EIS provided by other media?**



1 A: Yes it was. As the lead Federal agency, Western published a Notice of Public Hearing in  
 2 twelve local newspapers on two different occasions. In addition, mailings were made to  
 3 approximately 6000 landowners in the transmission line corridors.

4 **V. STATUS OF OTHER PERMITS**

5 **Q: Do you have an updated list and status of potentially required permits and**  
 6 **approvals?**

7 A: Yes, I have included with my testimony a revised version of Table 1-1 from the Energy  
 8 Conversion Facility Siting Permit Application. It is attached as Applicants' Exhibit 34-B.

9 **Q: What is the status of the PSD Construction Permit?**

10 A: The South Dakota Department of Environment and Natural Resources published the  
 11 Notice of Prevention of Significant Deterioration Permit Application and Draft Permit on April  
 12 26th. Public comments will be accepted for a period of 30 days. The Sierra Club and Region  
 13 VIII EPA have requested a 30-day extension to the comment period and following their requests,  
 14 Otter Tail filed a similar request on behalf of the Big Stone II co-owners. The South Dakota  
 15 Department of Environment and Natural Resources granted the requests for the 30-day extension  
 16 and comments are now due on July 26, 2006.

17 **Q: What is the status of the Water Appropriations Permit?**

18 A: The Notice of Hearing on the application to appropriate water was publicly noticed on  
 19 April 5 and 12, 2006. Subsequent to the publication, the South Dakota Department of  
 20 Environment and Natural Resources received three requests for an automatic delay of hearing,  
 21 and the hearing was rescheduled to July 12 and 13, 2006.

22 **Q: What is the status of the Permit to Operate a Solid Waste Facility?**

1 A: The draft Permit to Operate a Solid Waste Facility was public noticed on May 10, 2006  
2 for a 30-day public comment period.

3 **Q: Are you able to identify the dates for filing the applications for remaining permits**  
4 **that are not as yet submitted?**

5 A: I am unable to provide specific dates, but those permits that are necessary to have prior to  
6 construction, for construction, and for operation are noted on Table 1-1.

7 **Q: Does this conclude your rebuttal testimony?**

8 A: Yes it does.

# BIG STONE II

May 31, 2006

Mr. Kyrik Rombough  
Air Quality Program  
South Dakota Department of Environment  
and Natural Resources  
Joe Foss Building  
523 East Capitol  
Pierre, SD 57501-3181

Dear Mr. Rombough:

Subject: Prevention of Significant Deterioration Construction  
Big Stone II

I am writing to update the Department on plans to control mercury emissions from Big Stone Units I and II. In the permit application for Big Stone II submitted in July of 2005, the applicant agreed to comply with the federal Clean Air Mercury Rule ("CAMR") promulgated by EPA in May of 2005. CAMR imposes New Source Performance Standards ("NSPS") on new units and imposes a cap-and-trade emissions allowance system on new and existing units. The NSPS varies depending on the rank of coal burned and the type of control equipment. New units such as Big Stone II which burn subbituminous coal and are equipped with a wet flue gas desulfurization unit must meet an emission standard of  $42 \times 10^{-6}$  lb (*i.e.*, 42 millionths of a pound)/MWh. Using the NSPS for new units ( $42 \times 10^{-6}$  lb/MWh) as a benchmark, the addition of Big Stone II would have represented an expected increase of approximately 210 lbs/year. The rule also caps mercury emissions from all power plants nationwide at 38 tons per year in 2010 to 2017 and then at 15 tons by 2018 and thereafter. The rule allocates a budget to each state based on past emissions. South Dakota's mercury allocation in 2010 is 144 lbs/year in 2010 to 2017 and 58 lbs/year thereafter. Adding the 210 lbs/year for the new unit based on the NSPS to the 144 lbs/year allocated to South Dakota yields an anticipated emission level for Big Stone I and II as high as 354 lbs mercury/year.

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OTTER TAIL POWER COMPANY, LEAD DEVELOPER  
CENTRAL MINNESOTA MUNICIPAL POWER AGENCY  
GREAT RIVER ENERGY  
HEARTLAND CONSUMERS POWER DISTRICT  
MISSOURI RIVER ENERGY SERVICES  
MONTANA-DAKOTA UTILITIES Co.  
SOUTHERN MINNESOTA MUNICIPAL POWER AGENCY

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Mr. Kyrik Rombough  
May 31, 2006  
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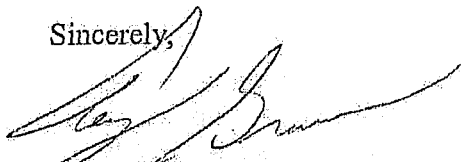
In the spirit of reducing emissions of mercury, the Big Stone II co-owners agreed last week to voluntarily commit to a site-wide cap of 189 lbs/year provided the facilities are allowed a period of three years after commercial operation date to test and implement commercially available, technically feasible mercury emissions control measures. This agreement is significant because, even though electrical output from the combined units will increase to 230% of current capacity, mercury emissions from both units will not increase above the amount emitted during 2004.

Under the agreement reached among the owners, there will be no such increase from the site as a whole. The agreement has the added benefit of operation flexibility — the owners can put resources to work where it will control mercury most effectively and efficiently. Finally, because the owners must purchase allowances in excess of those allocated under the South Dakota rules, they will have ongoing incentives to reduce mercury emissions.

We will contact you at a later date to discuss how this voluntary cap can be incorporated into the PSD Construction Permit.

Please call me if you have any questions.

Sincerely,



Terry Graumann  
Manager, Environmental Services

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**Table 1-1 Potentially Required Permits and Approvals (Revised June 1, 2006)**

Timing	Gov't Level	Agency	Type of Permit/Approval	Permit Status
Prior to Construction	Federal	Western Area Power Administration	Environmental Impact Statement	Draft EIS public noticed on May 19 <sup>th</sup> - Public hearings June 13-16, 2006
		Corps of Engineers	404 Dredge and Fill	Permit application filed on March 7, 2006
		FAA	Stack height and lighting approval	No activity at this time
		Federal Land Managers	Class I Area Analysis	Determined to be not applicable
		FERC	(To Be Determined)	
		USFWS	Threatened and Endangered Species	In progress as part of the EIS
	State	SD Aeronautics Commission	Aeronautical Hazard Permit	No activity at this time
		SD DENR	401 Certification	No activity at this time
		SD DENR	PSD (Air) Permit	Permit application filed on July 21, 2005 – Draft permit public notice on April 26 <sup>th</sup> , 2006
		SD PUC	Notification of Intent to file Energy Conversion Facility Permit application	Notice of Intent filed on November 8, 2004
		SD PUC	Plant Siting	Permit application filed July 20, 2005 – Contested case hearing June 23-26, 2006
		SD PUC	Transmission Facility Route Permit	Permit application filed January 16, 2006
		MN PUC	Certificate of Need for High Voltage Transmission Line	Certificate of Need filed on October 3, 2005-MN – Pre-filed testimony filed on June 1, 2006
		MN PUC & MN DOC	MN Transmission Line Route Permit/MN EIS	Permit application filed on December 9, 2005-MN DEIS scheduled for completion on July 31, 2006
		SD – Water Rights Program	Water Appropriation	Permit public hearing scheduled for July 12–13, 2006
		SD State Historic Preservation Office	Cultural and Historic Resources Review	In progress as part of the EIS
MN State Historic Preservation Office	Cultural and Historic Resources Review	In progress as part of the EIS		
Local	Grant County Planning Commission	Zoning Approval	No activity at this time	

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Timing	Gov't Level	Agency	Type of Permit/Approval	Permit Status
For Construction	Federal	Corps of Engineers	Section 10 River Crossing Permits	No activity at this time
	State	SD DENR	NPDES Storm Water Permit for Construction	No activity at this time
		MN DNR	Work in waterfowl or wildlife management areas?	No activity until transmission line route permit is issued
		MN DNR	State-listed Endangered Species	In progress as part of the EIS
		MN DNR	License to cross	No activity until transmission line route permit is issued
		MPCA	NPDES Construction Storm Water	No activity at this time
		MNDOT	Work in ROW	No activity until transmission line route permit is issued
		Grant County	Erosion and Sediment Control	No activity until transmission line route permit is issued – county approval may not be required
		Grant County or Big Stone Township	Driveway Permit for Construction Lay Down Area	No activity at this time
		Multiple LGU's	Wetland filling or excavation for transmission line	No activity until transmission line route permit is issued
County Highways	Work in ROW	No activity until transmission line route permit is issued		
For Operation	Federal	DOE	Fuel Use Act Certification	Requirements under review
		DOE	ORIS code number designation	Issued upon application – no approval necessary
		EPA	SPCC Plan	SPCC Plan required – no approval necessary
	State	SD DENR	Acid Rain Allowances	Issued upon purchase – no approval necessary
		SD DENR	AST certification	Notification required – no approval necessary
		SD DENR	Solid waste disposal permit.	Draft permit public noticed on May 10, 2006
		SD DENR	Title V Permit Application	Submittal due within 12 months of commencing operation
		SD DENR	NPDES Storm Water Permit	No activity at this time