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## SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

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Re: In the Matter of the Application by Otter Tail Power  
Company on behalf of Big Stone II Co-Owners for  
an Energy Conversion Facility Permit for the  
Construction of the Big Stone II Project  
Docket EL05-022

Dear Folks:

Enclosed each of you will find a copy of Surrebuttal Testimony of Olesya Denney, Ph.D.  
in the above captioned matter.

This is intended as service upon you by mail.

Very truly yours,

Karen E. Cremer  
Staff Attorney

KEC:dk  
Enc.

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BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

RECEIVED

DOCKET NO. EL05-022

JUN 19 2006

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

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 PERMIT FOR THE CONSTRUCTION OF  
THE BIG STONE II PROJECT

Surrebuttal Testimony of

Olesya Denney, Ph.D.

QSI CONSULTING, INC.

On Behalf of

the Staff of the Public Utilities Commission of South Dakota

June 19, 2006

3531

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**I. INTRODUCTION AND PURPOSE OF THE TESTIMONY**

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Olesya Denney. My business address is 6110 Cheshire Line North, Plymouth, MN 55446.

**Q. ARE YOU THE SAME OLESYA DENNEY WHO FILED DIRECT TESTIMONY IN THIS PROCEEDING?**

A. Yes.

**Q. ON WHOSE BEHALF WAS THIS TESTIMONY PREPARED?**

A. This testimony was prepared on behalf of the Staff of the Public Utilities Commission of South Dakota.

**Q. PLEASE STATE THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING.**

A. The purpose of this testimony is to respond to rebuttal testimonies of the Parties filed on June 9, 2006. Due to the short time frame between the filing date of the rebuttal and surrebuttal testimonies I address only the most important issues.

1     **II. THE ENVIRONMENTAL IMPACTS**

2     **A. *The Methodology and Appropriateness of Calculating The***  
3     ***Environmental Impact***

4     **Q. MESSRS. HEWSON AND GRAUMAN DISAGREE WITH YOUR**  
5     **INTERPRETATION OF SOUTH DAKOTA ADMINISTRATIVE RULES**  
6     **AS REQUIRING QUANTIFICATION OF THE ENVIRONMENTAL**  
7     **IMPACTS.<sup>1</sup> PLEASE COMMENT.**

8     A. Like Mr. Hewson, I am leaving it to the Commission to decide on the correct  
9     reading of the Administrative Rules.<sup>2</sup> However, even if such quantification is not  
10     required from the Applicants by the Rules, it nevertheless provides the  
11     Commission with a useful tool that reduces multi-dimensional issues – the  
12     economic development and pollution – to one-dimensional net benefit estimates.  
13     Given that the Applicants already calculated the benefits from the economic  
14     development (which is not required by Administrative Rules), the comparison of  
15     these benefits to the monetary estimates of environmental damages is the next  
16     logical step. This is especially true in the light of the fact that the environmental  
17     impact is one of the key criteria for evaluating the application (SDCL 49-41B-22).  
18     To quote another Applicants' witness, Mr. Morlock, my analysis did "illuminate  
19     the key element of this proceeding:"<sup>3</sup> The controversy about this project is related  
20     mainly to concerns about carbon dioxide emissions, and the judgment about

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<sup>1</sup> Rebuttal Testimony of Thomas A. Hewson, pp. 28-29 and Rebuttal Testimony of Terry Grauman, pp. 4-5.

<sup>2</sup> ARSD 20:10:22:13.

<sup>3</sup> Rebuttal Testimony of Bryan Morlock, p. 9.

1           whether the project is beneficial or harmful to the community and environment  
2           depends on how much weight the Commission should give to concerns about  
3           carbon dioxide.

4  
5           **Q.    INTERVENORS MR. SCHLISSEL AND MS. SOMMER CLAIM THAT**  
6           **YOUR ANALYSIS IS FLAWED BECAUSE IT DOES NOT COMPARE**  
7           **THE BIG STONE II PROJECT TO OTHER ALTERNATIVES.<sup>4</sup> DO YOU**  
8           **AGREE?**

9           A.    No. Mr. Schlissel and Ms. Sommer improperly expand the scope of my analysis.  
10           My analysis focused on the subject of this case, which is a facility sitting permit  
11           for Big Stone II. The purpose of my analysis was not to compare generation  
12           alternatives, but to evaluate the negative environmental impact of the Big Stone II  
13           project and put this impact in perspective by comparing it to the positive  
14           economic benefits of the project. In other words, my analysis was conducted  
15           under the assumption that Big Stone II is the least-cost generation alternative from  
16           the standpoint of “internalized” market costs,<sup>5</sup> and focused on the external costs  
17           of the Big Stone II project. Because my analysis required specific information  
18           about the proposed plant’s emissions, it could not be duplicated for other  
19           generation alternatives because the record lacks the specifics about the  
20           engineering design and emission control technologies for these alternatives.

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<sup>4</sup> Rebuttal Testimony of David A. Schlissel and Anna Sommer, pp. 4-5.

<sup>5</sup> Note that I did not address the issue of the comparative costs of the generation alternatives, but instead took as a starting point an assumption that Big Stone II is the least-cost alternative.

1       **Q.   MR. SCHLISSEL AND MS. SOMMER SPECIFICALLY DISAGREE**  
2       **THAT MORE SPENDING IN THE LOCAL ECONOMY IMPLIES**  
3       **HIGHER ECONOMIC IMPACT. PLEASE COMMENT.**

4       A.   Mr. Schlissel and Ms. Sommer disagree with the basic economic theory that is  
5       typically covered in introductory macroeconomic courses. This theory states that  
6       spending stimulates demand and creates a boost to the economy. Mr. Schlissel  
7       and Ms. Sommer suggest that instead, I should be comparing the direct cost of the  
8       Big Stone II project to the cost of other alternatives according to the rate-making  
9       “least-cost” principle. As I explained above, my analysis addresses a completely  
10      different issue: Assuming that Big Stone II is the least-cost alternative (from the  
11      standpoint of the Applicants’ cost), what is its impact on the local community and  
12      the environment? As I explained in my Direct Testimony, this direction of my  
13      analysis is dictated by the criteria for evaluation facility siting applications  
14      captured in South Dakota Codified Law (SDCL 49-41B-22).

15  
16      **Q.   MR. MORLOCK CRITICIZES YOUR NET BENEFIT ANALYSIS FOR**  
17      **NOT COUNTING ALL THE BENEFITS.<sup>6</sup> DO YOU AGREE?**

18      A.   Yes, as I explained in my Direct Testimony, this short-coming is due to the  
19      limited availability of the data. The environmental impacts are not confined to  
20      state boundaries,<sup>7</sup> while the economic benefits – calculated by the Applicants –

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<sup>6</sup> Rebuttal Testimony of Bryan Morlock, pp. 9-10.

<sup>7</sup> Direct Testimony of Olesya Denney, pp. 30-31.

1 represent only South Dakota impacts.<sup>8</sup> In addition, I explained that the  
2 Applicants' estimates of the economic benefits do not include the "primary"  
3 consumer benefits from the production of electricity – benefits that are called  
4 "consumer surplus" in economics,<sup>9</sup> and which Mr. Morlock describes as the  
5 "value to regional customers."<sup>10</sup> Because I relied on the Applicants' estimates of  
6 economic benefits,<sup>11</sup> I could not quantify the degree of bias caused by the  
7 exclusion of out-of-state economic impacts and consumer surplus. If the  
8 Applicants believed that out-of-state benefits or consumer surplus benefits are  
9 significant, they could have updated their economic impact estimates with the  
10 omitted components in their rebuttal testimony.

11  
12 **Q. INTERVENORS MR. SCHLISSEL AND MS. SOMMER SUGGEST THAT**  
13 **CONSUMER BENEFITS FROM THE BIG STONE II PROJECT ARE**  
14 **NOT SIGNIFICANT BECAUSE THEY HAVE TO BE COMPARED TO**  
15 **OTHER ALTERNATIVES. PLEASE COMMENT.**

16 A. As I explain above, I adopt a different methodological approach than the  
17 Intervenors. I conduct my analysis under the assumption that Big Stone II is the  
18 least-cost alternative. In other words, I am assuming that under other alternatives  
19 – which may include building additional facilities or even a "do nothing

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<sup>8</sup> *Id.*, p. 34.

<sup>9</sup> *Id.*, pp. 34-35 and footnote 94.

<sup>10</sup> Rebuttal Testimony of Bryan Morlock, p. 10.

<sup>11</sup> These benefits were calculated by using software applications to which I have no access.



1 approach,”<sup>12</sup> electricity costs and consumer rates would be higher. Nevertheless,  
2 the Intervenor raise a good point – it is not the total consumer surplus, but rather  
3 a gain in consumer surplus from the Big Stone II project that should be accounted  
4 for in the total economic impact of the project. This gain in consumer surplus is  
5 caused by the decrease in consumer rates relative to the rates that would exist  
6 under other alternatives.<sup>13</sup> Assuming that the Big Stone II project is the least-cost  
7 alternative, the change of consumer surplus from operation of Big Stone II would  
8 be positive. However, the size of this positive impact would depend on the  
9 difference between the rates under the Big Stone II project and alternative  
10 scenarios – the smaller the difference in rates, the smaller the gain in consumer  
11 surplus from the Big Stone II project.

12  
13 **Q. MR. SCHLISSEL AND MS. SOMMER ARE ALSO CONCERNED THAT**  
14 **THIS PROJECT WILL CAUSE A RATE INCREASE FOR CONSUMERS.**  
15 **DO YOU SHARE THIS CONCERN?**

16 **A.** Mr. Schlissel and Ms. Sommer point to the Applicants’ data response stating that  
17 residential rates of Montana-Dakota Utilities would go up 20% over current tariff  
18 as a result of Big Stone II.<sup>14</sup> As I explained above, a rate increase from Big Stone

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<sup>12</sup> Although the Intervenor point out that no party in this case proposes a “do nothing” alternative, this alternative is still valid for my analysis because a denial of the Big Stone II Application effectively means “doing nothing,” at least in the short term.

<sup>13</sup> As I discuss below, the rates under the Big Stone II project may actually increase compared to the current rates. However, what matters is that the rates would be even higher under other, more costly alternatives.

<sup>14</sup> Applicants’ Response to Information Request No. 44 in MN PUC Docket No. CN-05-619, incorporated by reference in Applicants’ Response to Intervenor’s 4th Set of Requests for Production of Documents in this docket.

1 II should be evaluated against potential rate increases under the alternative  
2 scenarios, including a “do-nothing” scenario. If the Big Stone II project is indeed  
3 the least-cost alternative, the potential rate increases under the alternative  
4 scenarios would likely be even higher. For example, in the same data response  
5 SMMPA stated that with the inclusion of Big Stone II as a new resource in  
6 service in 2011, SMMPA expects a reduction in fuel and purchased power costs  
7 from the prior year. Similarly, CMMPA stated that the project would help to  
8 lower the cost of power. Nevertheless, the Commission should be aware that the  
9 Big Stone II project may negatively affect retail rates, and that the rate increase  
10 may be significant.

11  
12 **Q. MR. SCHLISSEL AND MS. SOMMER SUGGEST THAT IT IS**  
13 **“UNETHICAL” FOR YOU TO NARROW DOWN THE**  
14 **ENVIRONMENTAL IMPACTS TO THE STATE OF SOUTH DAKOTA.<sup>15</sup>**  
15 **PLEASE RESPOND.**

16 A. My comment about narrowing down the environmental impacts to the state of  
17 South Dakota was of a technical nature. It was dictated by the fact that my point  
18 of reference – the economic impacts – was limited to the state of South Dakota  
19 due to the availability of data. I did not suggest that the Commission should  
20 ignore out-of-state impacts of South Dakota facilities. Instead, my comment was  
21 in recognition that my baseline analysis (the comparison of South Dakota  
22 economic impact and the geographically undefined environmental impact) is not

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<sup>15</sup> Rebuttal Testimony of David A. Schlissel and Anna Sommer, pp. 2-3.

1 an apples-to-apples comparison. Because I did not have the data to expand the  
2 economic impacts to the same geographical area as the environmental impact, my  
3 only other choice was to narrow down the environmental impacts. Clearly, this  
4 was just a side note because all of my “results” tables include both in-state and  
5 out-of-state environmental impacts.  
6

7 **B. Externality Values and Pollution Compliance Costs for**  
8 **Carbon Dioxide**

9 **Q. MR. HEWSON SUGGESTS THAT YOU RECOMMEND USING THE**  
10 **CALIFORNIA EXTERNALITY VALUE IN THE CALCULATION OF**  
11 **THE ENVIRONMENTAL IMPACT OF BIG STONE II. IS THIS**  
12 **CORRECT?**

13 A. No. First, the word “recommend” is inappropriate in this context because I  
14 utilized the California externality adders as an alternative scenario that tests the  
15 sensitivity of results to assumptions. Note that my “baseline” calculation utilizes  
16 the externality range estimated for carbon dioxide reported in the EPA literature  
17 survey on the subject (“EPA’s CO<sub>2</sub> externality range”), rather than the California  
18 value.

19 Second, because the EPA’s CO<sub>2</sub> externality range is so wide, the resulting  
20 estimate of the net impact of Big Stone II (Table 6A of my direct testimony)  
21 ranges from negative to positive dollar values, making qualitative conclusions  
22 difficult. Therefore, I decided to pick a “point estimate” from the EPA’s CO<sub>2</sub>

1 externality range. The purpose of picking a point was to show that narrowing  
2 down the range produces more definite qualitative results. (Specifically, my  
3 calculations showed that the net result of the project becomes positive under the  
4 California CO<sub>2</sub> externality value).

5  
6 **Q. MR. HEWSON ALSO SUGGESTS THAT IT IS INCORRECT TO USE**  
7 **THE CALIFORNIA EXTERNALITY VALUE IN YOUR**  
8 **CALCULATIONS BECAUSE IT IS BASED ON COMPLIANCE COST,**  
9 **RATHER THAN AN ESTIMATE OF ENVIRONMENTAL DAMAGE.<sup>16</sup>**  
10 **PLEASE COMMENT.**

11 A. From the pure academic standpoint, Mr. Hewson is right. However, as I  
12 explained above, I utilized the California externality adder simply as a point that  
13 lies within the EPA's CO<sub>2</sub> externality range. Rather than choosing a hypothetical  
14 point such as "the mid-point of the range" or "lower boundary plus 30%," I chose  
15 a "real-life" value utilized by regulators. As I explained in footnote 81 of my  
16 direct testimony, I chose the California value, rather than, for example, the  
17 Minnesota or Oregon values because it was a somewhat "moderate" mid-range  
18 value. Another reason for choosing the California value (\$8) over the Minnesota  
19 value (\$3.64 used by the Applicants<sup>17</sup>) was to show that the net benefit of the  
20 project is positive not only under the Minnesota value, but even under the higher  
21 California value.

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<sup>16</sup> Rebuttal Testimony of Thomas A. Hewson, pp. 35-36.

<sup>17</sup> See Exhibit 23-A to the Applicants' Direct Testimony, p. 6-1.

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**Q. MR. HEWSON SUGGESTS THAT INTERVENORS MR. SCHLISSEL AND MS. SOMMER SHOULD HAVE USED THE MINNESOTA EXTERNALITY VALUES FOR CARBON DIOXIDE IN THEIR ANALYSIS OF GENERATION ALTERNATIVES. DO YOU AGREE?**

A. No. Mr. Hewson is contradicting his own statements. In one part of his testimony he notes that my use of the California carbon externality adder, which is based on compliance costs, is not “logically relevant”<sup>18</sup> to estimating the environmental damages. In another part of his testimony he advocates using the Minnesota PUC’s carbon externality values,<sup>19</sup> which are based on environmental damages, to estimate “the future carbon dioxide compliance cost.”<sup>20</sup> Because Mr. Hewson takes a position that externality cost is not equal to compliance cost,<sup>21</sup> his suggestion to use the externality costs in estimating compliance costs, but not vice versa, is nonsensical. The only explanation of Mr. Hewson’s inconsistent position is convenience. As he points out,<sup>22</sup> the Minnesota CO<sub>2</sub> externality values are set to zero for out-of-state generation.

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<sup>18</sup> *Id.*, p. 36.

<sup>19</sup> *Id.*, pp. 5-6.

<sup>20</sup> *Id.*, p. 2.

<sup>21</sup> Note that only under ideal “textbook” conditions the (marginal) damage from pollution would be equal to the (marginal) compliance cost. These ideal conditions require that the total level of allowed pollution is set at the socially optimal level, which implies that the regulators possess perfect information about the social cost (damage) and private compliance cost functions. In reality, the regulators do not have such information. Instead, the allowable levels of pollution are typically set as targets (reductions) in relation to the current levels of pollution.

<sup>22</sup> Rebuttal Testimony of Thomas A. Hewson, p. 6.

1       **Q.    WHY ARE THE MINNESOTA CO<sub>2</sub> EXTERNALITY VALUES FOR OUT-**  
2       **OF-STATE GENERATION SET TO ZERO? DOES IT MEAN THAT**  
3       **MINNESOTA ESTIMATED ZERO DAMAGES FOR OUT-OF-STATE**  
4       **POLLUTION?**

5       A.    No, the Minnesota PUC estimated non-zero damages for out-of-state carbon  
6       dioxide emissions.<sup>23</sup> The regulatory externality values for out-of-state generation  
7       were later set to zero to avoid jurisdictional complexities and account for concerns  
8       about “interstate comity” expressed by several out-of-state intervenors.<sup>24</sup>

9  
10       **Q.    MR. MORLOCK DISGAREES WITH THE EXTERNALITY VALUES**  
11       **THAT YOU USE.<sup>25</sup> PLEASE RESPOND.**

12       A.    Mr. Morlock’s main argument appears to be that the “range of externality values”  
13       that I use is “too high.” Further, Mr. Morlock appears to be more sympathetic to  
14       the CO<sub>2</sub> externality values used by the California PUC rather than the range  
15       reported in the EPA literature survey simply because the California values are  
16       lower. Clearly, rejecting some values just because they are unfavorable is not a  
17       credible argument. To support his claim, Mr. Morlock simply refers to the  
18       testimony of Mr. Hewson, to which I responded above.

19                Further, Mr. Morlock does not seem to fully understand the issue because  
20       he combines the externality values used in my analysis (values meant to represent

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<sup>23</sup> MN PUC Docket No. E-999/CI-93-583 *Order* dated January 3, 1997, p. 3.

<sup>24</sup> MN PUC Docket No. E-999/CI-000-1636 *Order* dated May 2, 2001, p. 5.

<sup>25</sup> Rebuttal testimony of Bryan Morlock, pp. 8-9.

1 the external damage from pollution) and the “carbon costs” used by Intervenors  
2 Mr. Schlissel and Ms. Sommer (values meant to represent the Applicants’ internal  
3 costs of compliance with carbon regulation). While the former is a measure of  
4 actual objective damages that have no direct relation to the specific form of  
5 regulation (costs not generally borne by the polluter), the latter is a measure of  
6 private costs caused by the specific form of regulation (costs borne by the  
7 polluter). Because the externality values are not directly dependent on the  
8 specific form of pollution regulation, Mr. Morlock’s suggestion that they are  
9 subject to future federal actions is without merit. Mr. Morlock’s confusion stems  
10 from his incorrect understanding of externalities as “penalty factors.”

11 Finally, Mr. Morlock rejects the use of the externality values reported in  
12 the EPA’s literature survey on the grounds that they have not been reviewed and  
13 subjected to formal rule-making in the region. Although it is true that the  
14 externality values from the EPA’s survey were not subjected to rule-making in the  
15 region to my knowledge, it is also true that these values passed several levels of  
16 review. First, because these values are taken from academic publications, they  
17 passed the scrutiny of peer review. Second, they were reviewed and summarized  
18 by the EPA, which, Mr. Morlock would likely agree, is a reputable source. Third,  
19 because the EPA’s externality values are based on a compilation of studies, rather  
20 than one study, they likely present a more accurate estimate of true externalities  
21 than one study, even if this one study was approved in a state proceeding. In  
22 essence, the EPA’s approach of surveying literature is similar to asking for a  
23 second opinion when faced with a complex medical condition.

1

2 **C. Externality Estimates for Criteria Pollutants**

3 **Q. WHEN DISCUSSING CRITERIA POLLUTANTS, MR. HEWSON**  
4 **STATES THE FOLLOWING: "SINCE THE PROJECT WILL NOT**  
5 **CAUSE ANY AREAS TO BE IN NONATTAINMENT, BY DEFINITION**  
6 **THE PROJECT CAN BE PRESUMED NOT TO CAUSE ANY HEALTH**  
7 **OR WELFARE IMPACT."<sup>26</sup> DO YOU AGREE?**

8 A. No. Although I do not dispute that concentration of pollutants in the air affects  
9 the degree of the adverse impacts, I dispute that the issue is that clean-cut and  
10 textbook-simple. First, Mr. Hewson's position assumes that the national ambient  
11 air quality standards ("NAAQS") are set perfectly at the levels that cause zero  
12 adverse effects, while in reality we deal with a great deal of uncertainty and  
13 constantly changing scientific knowledge. As the Minnesota PUC noted,

14 Some parties argued that there can be no damages/costs to the  
15 environment as long as emissions do not cause ambient air  
16 concentrations to exceed the NAAQS. However, the EPA has not  
17 been able to keep the NAAQS updated. They do not reflect the  
18 latest scientific knowledge. Based on the record established in this  
19 matter, it is clear that the NAAQS currently are not necessarily set  
20 at no-cost levels.<sup>27</sup>  
21

22 Second, Mr. Hewson disagrees with my argument that certain pollutants can be  
23 transported far away, thus contributing to pollution in other areas. Specifically,  
24 Mr. Hewson argues that particulate matter cannot be transported "hundreds of

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<sup>26</sup> Rebuttal Testimony of Thomas A. Hewson, p. 31.

<sup>27</sup> MN PUC Docket No. E-999/CI-93-583 *Order* dated January 3, 1997, p. 16.



1 miles.”<sup>28</sup> This statement contradicts the information posted on the EPA site  
2 which I referenced in my direct testimony:<sup>29</sup> According to the EPA information,  
3 particulate matter can be transported “thousands of miles” away from the  
4 source.<sup>30</sup> Further, even if lead is typically not transported far away from the  
5 source, it accumulates in soils, thus contributing to cumulative pollution in the  
6 area: “Because lead remains in the soil, soil concentrations continue to build over  
7 time, even when deposition rates are low.”<sup>31</sup>

8 Finally, from a practical standpoint the debate about the presence or  
9 absence of the negative environmental impacts from criteria pollutants in  
10 attainment areas is not very important because, as my calculation showed, it is the  
11 impact of another pollutant – carbon dioxide – that drives the net results. Even if  
12 we ignore the impact of pollutants other than carbon dioxide, the net impact of the  
13 project still lies in the range between negative (net loss) and positive (net benefit)  
14 values depending on the specific assumption about the carbon dioxide’s  
15 externality.<sup>32</sup>

16  
17 **D. Mercury**

18 **Q. MR. HEWSON CLAIMS THAT IT WAS INAPPROPRIATE FOR YOU TO**  
19 **ESTIMATE THE IMPACT OF MERCURY EMISSIONS BECAUSE OF**

<sup>28</sup> Rebuttal Testimony of Thomas A. Hewson, p. 31.

<sup>29</sup> See page 31 and footnote 86.

<sup>30</sup> [http://www.epa.gov/airtrends/pmreport03/pmunderstand\\_2405.pdf#page=1](http://www.epa.gov/airtrends/pmreport03/pmunderstand_2405.pdf#page=1).

<sup>31</sup> <http://www.epa.gov/airtrends/lead2.html>.

<sup>32</sup> This result can be shown by zeroing externality values for all pollutants but carbon dioxide in Exhibit B to my Direct Testimony.

1           **THE APPLICANTS' COMMITMENT TO CAP MERCURY EMISSIONS.**  
2           **PLEASE COMMENT.**

3           A.    Mr. Hewson must have not realized that my testimony pre-dated the Applicants'  
4           commitment. Clearly, I could not have been aware on May 19, the filing date of  
5           my testimony, that on May 31 the Applicants would commit to the voluntary  
6           mercury emissions cap.<sup>33</sup> Nevertheless, Mr. Hewson's comments on the  
7           Applicants' voluntary mercury cap contain several inaccuracies. First, he states  
8           that the Applicants made a commitment to reduce mercury emissions to levels  
9           below the currently emitted levels.<sup>34</sup> This statement contradicts with the Rebuttal  
10          Testimony of Mr. Grauman who explained that the Applicants committed to the  
11          mercury cap that is equal to current mercury emissions.<sup>35</sup> Second, Mr. Hewson  
12          omits another nuance about the Applicants' commitment. The commitment  
13          begins three years after commercial operation of Big Stone II.<sup>36</sup> In other words, it  
14          is still appropriate to calculate externalities associated with mercury emissions in  
15          the first three years of the plant's operation.

16  
17          **Q.    HOW DO YOU EVALUATE THE APPLICANTS' COMMITMENT TO**  
18          **THE VOLUNTARY MERCURY EMISSIONS CAP?**

19          A.    I certainly welcome this commitment. However, neither the Applicants' rebuttal  
20          testimony, nor Mr. Grauman's Letter to the South Dakota Department of

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<sup>33</sup> See May 31, 2006 Letter from Mr. Grauman to South Dakota Department of Environment and Natural Resources provided as Exhibit 6A to Applicants' Rebuttal Testimony.

<sup>34</sup> Rebuttal Testimony of Thomas A. Hewson, p. 32.

<sup>35</sup> Rebuttal Testimony of Terry Grauman, pp. 1-3.

<sup>36</sup> *Id.* and Exhibit 6A to Applicants' Rebuttal Testimony.

1 Environment and Natural Resources<sup>37</sup> explain how the Applicants plan to achieve  
2 this goal. Mr. Grauman's rebuttal testimony contains only a brief general  
3 discussion about financial risks associated with the need to purchase the "next  
4 generation" of mercury control equipment and the fact that the cost of such  
5 equipment is unknown.<sup>38</sup> Mr. Grauman's comments suggest that the Applicants  
6 do not know specifically how the commitment will be met, but rather gamble that  
7 by 2014<sup>39</sup> some mercury-control technology will become commercially available.  
8 Of course, this gamble adds to the risk of the project. If such technology is not  
9 commercially available by 2014, or prohibitively expensive, how would the  
10 Applicants keep the commitment? Would they cut the plant output to lower the  
11 emissions? Would alternative generation technologies be more cost-effective if  
12 the Applicants account for the future costs of mercury controls?

13 Note that on May 31, 2006, the EPA re-affirmed its final rules regarding  
14 mercury trading and state mercury budgets. The annual federal mercury budget  
15 for South Dakota is set at 0.072 tons (approximately 144 pounds) for 2010-2017,  
16 and 0.029 tons (approximately 58 pounds) for years starting in 2018.<sup>40</sup> The  
17 Applicants' voluntary cap is 189 pounds annually (Exhibit 6A to Applicants'  
18 Rebuttal Testimony). In other words, the voluntary mercury emissions cap

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<sup>37</sup> Exhibit 6A to Applicants' Rebuttal Testimony.

<sup>38</sup> Rebuttal Testimony of Terry Grauman, p. 4.

<sup>39</sup> This is the starting date of the mercury cap commitment (three years after the start of commercial operation of the plant).

<sup>40</sup> Note that for consistency with the numbers quoted in the Applicants' Direct Testimony, I utilized the rounded conversion factor 0.0005 tons/lb used by the Applicants – see footnote 76 in my Direct Testimony. A copy of the EPA final mercury rules is available at the following link:  
[http://www.epa.gov/air/mercuryrule/pdfs/camr\\_recon\\_fr\\_final\\_053106.pdf](http://www.epa.gov/air/mercuryrule/pdfs/camr_recon_fr_final_053106.pdf).

1 exceeds the state mercury budget by 45 pounds (24%) before 2018, and by 131  
2 pounds (69%) after 2018. Even if the Applicants meet their voluntary cap  
3 commitment, they would still have to buy additional mercury emission  
4 allowances to meet the state mercury budget.

5  
6 **III. THE APPLICANTS' RESPONSE TO STAFF'S**  
7 **SPECIFIC RECOMMENDATION**

8 **Q. DID THE APPLICANTS ADEQUATELY ADDRESS YOUR SPECIFIC**  
9 **RECOMMENDATIONS CONTAINED IN SECTION V OF YOUR**  
10 **DIRECT TESTIMONY?**

11 A. Generally, yes. The Applicants indicated<sup>41</sup> that they accepted and plan to adopt  
12 recommendations of the Local Review Committee and the Draft Environmental  
13 Impact Statement that Staff also recommended. In addition, the Applicants  
14 supplemented the record with the majority of information required by the  
15 Administrative Rules – information that Staff identified as missing from the  
16 record in Table 2 of my Direct Testimony. The most notable addition concerned  
17 a discussion of rail delivery issues, which were addressed by Mr. Robert  
18 Brautovich, an employee of Burlington Northern Santa Fe Railway Company, as  
19 well as by Mr. Uggerud. The Applicants did not supplement the record in areas  
20 where they disagreed with Staff regarding the interpretation of the Rules, such as  
21 the calculation of the environmental impacts (ARSD 20:10:22:13) or the required

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<sup>41</sup> Rebuttal Testimony of Mark Rolfes, p. 6.

1 level of detail, such as the requirement to provide demand information (ARSD  
2 20:10:22:10).  
3

4 **IV. CONCLUSIONS**

5 **Q. STAFF'S PRELIMINARY RECOMMENDATION WAS THAT THE**  
6 **APPLICATION SHOULD BE APPROVED SUBJECT TO THE**  
7 **CONDITION THAT ALL APPLICABLE PERMITS ARE ISSUED. DO**  
8 **YOU CHANGE THIS RECOMMENDATION BASED ON THE NEW**  
9 **EVIDENCE FILED BY PARTIES SINCE THE FILING DATE OF YOUR**  
10 **DIRECT TESTIMONY?**

11 A. This preliminary recommendation stands, though additional evidence uncovered  
12 at the evidentiary hearing and in written testimony yet to be submitted in this case  
13 may alter this recommendation.  
14

15 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

16 A Yes.

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE APPLICATION BY )	CERTIFICATE OF SERVICE
OTTER TAIL POWER COMPANY ON BEHALF )	
OF BIG STONE II CO-OWNERS FOR AN )	EL05-022
ENERGY CONVERSION FACILITY PERMIT )	
FOR THE CONSTRUCTION OF THE BIG )	
STONE II PROJECT )	

I hereby certify that true and correct copies of Surrebuttal Testimony of Olesya Denney, Ph.D. were served via the method(s) indicated below, on the 19th day of June, 2006, addressed to:

(Name and Address)

See attached Exhibit A.

- First Class Mail
- Hand Delivery
- Facsimile
- Overnight Delivery
- E-Mail



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**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

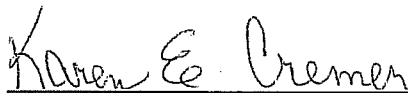
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