BIG STONE II
PARTNERS IN GENERATION

48450 144th Street • Big Stone City, SD 57216
www.bigstoneii.com

August 1, 2007

Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501-5070

FILED BY ELECTRONIC FILING

Dear Ms. Van Gerpen:

Subject: Response to Public Utilities Commission request for additional information concerning Final Decision and Order; Notice of Entry EL05-022

The following additional information is provided in conformance with the Final Decision and Order for the Energy Conversion Facility Permit for the Construction of the Big Stone II Project Docket EL05-022, specifically Decision and Order 3. Supporting electronic documentation accompanies this filing.

Sincerely,

Mark Rolfes
Project Manager
Big Stone II Project

Final Decisions and Order
Energy Conversion Facility Permit for the
Construction of Big Stone II Project

EL05-022

August 1, 2007

The following response is provided to submit information requested in the Final Decision and Order for the Energy Conversion Facility Permit for the Construction of the Big Stone II Project Docket EL05-022 specifically within Finding 195 and Decision and Order paragraph 3.

Finding 195

> 195. As discussed in finding 101, under extended drought conditions, it is possible that operation of Big Stone II might have to be diminished or shut down. Although Applicants discussed the potential for use of groundwater or other alternative water sources in that contingency, no evidence relative to the specifics of such alternative supply was produced. The Commission believes that Applicants should undertake an evaluation of alternatives during the development phase of the project to enable timely response to this contingency should it occur.

Decision and Order paragraph 3

> 3. Applicants shall conduct an evaluation of alternative water supply options to provide water to the plant in the event that withdrawals from Big Stone Lake are curtailed for an extended period of time. Applicants shall file a report with he Commission detailing the findings of such study on or before September 1, 2007. Such study shall include (i) identification of particular potential source options, (ii) an assessment of the facilities which would be required to effectuate water delivery to the plant from such alternative sources, institutional and other impediments to contingent development of one or more of these options and the timing and logistics of implementing such options, (iii) a preliminary cost analysis of alternative supply options and (iv) a comparison of financial effects of development of one or more alternative supply options with the no-run option.

Since the date of the Final Decision and Order Docket EL05-022, Big Stone II Project contracted with Barr Engineering Company to examine a groundwater alternative to the 450-acre surface storage pond as a supplementary water supply. Barr Engineering Company was chosen due the company's comprehensive experience in water resource evaluation and engineering. Barr Engineering conducted extensive research on the availability for groundwater to meet Big Stone II's water requirements.

Barr Engineering found that there is adequate water available in the Veblen Aquifer located near the plant, drawing water from the aquifer would not adversely affect other local users in the area, drawing water from the aquifer would not cause a detriment to Big Stone Lake, Minnesota River, or other local bodies of water, and the plant's water requirements will not deplete the aquifer. On March 28, 2007 Otter Tail Power Company on behalf of the Big Stone II co-owners submitted an Application for Permit to Appropriate Water within the State of South Dakota dated March 2007 requesting approval to appropriate up to 10,000 acre-feet of groundwater per year (attached).

Following the July 11, 2007 public hearing, the South Dakota Water Management Board unanimously agreed to issue Permit No. 6846-3 allowing appropriation of up to 10,000 acre-feet of groundwater per year.

The overall approach to management of water resources available to the Big Stone site through existing permits and the approved permit is as follows: (1) appropriate surface water from Big Stone Lake when it is available pursuant to the terms of those permits; (2) appropriate water stored in the cooling ponds if withdrawals from Big Stone Lake are not allowed; (3) strive to keep the cooling ponds full by appropriating surface water from Big Stone Lake when allowed; and, (4) use groundwater appropriation when Big Stone Lake and water stored in the ponds cannot meet the Big Stone plant site needs.

Water from the wells would be pumped to the Big Stone Plant site either through a common pipeline or independent pipe depending of the location of the particular well. Whereas, the well field details continue to be developed, it is expected the plant will require between 7 and 14 wells located within approximately 5 miles of the plant site property. The well field pipeline would be predominately routed below grade along existing public road rights of way or other easements acquired by the Big Stone II project.

In addition to the study of water supply alternatives, Black & Veatch Corporation (B&V) completed a Heat Rejection Technology Assessment to review the water requirement differences, power consumption, effect on plant efficiency, and overall cost of various heat rejection alternatives. B&V has been involved with the Big Stone II Project acting as the owners Architect Engineer. B&V has extensive experience with power station design and is specifically well versed on heat rejection technologies currently available.

B&V's study studied the four following heat rejection technologies.
Option 1 - Wet cooling with surface water supply and makeup water storage pond
Option 2 - Wet cooling with surface water supply and groundwater supply
Option 3 - Hybrid cooling with surface water supply and groundwater supply
Option 4 - Dry cooling with surface water supply and groundwater supply

Option 2, 3,and 4 each use groundwater to satisfy plant water requirements during times of drought or whenever surface water is not available. For further information on the B&V study, please refer to the attached B&V Heat Rejection Technology Assessment.

B&V's study recommended Option 2 because it is the lowest net present worth when considering capital and operating costs. B&V study estimates the groundwater option will require $82.1M less expenditure than the storage pond approach. Option 2 also was found to provide the lowest station heat rate (highest efficiency) and consumes the least amount of power to operate. Options 3 and 4 represent lower water requirements, however they have substantially higher capital and operating costs and offer less efficient plant performance.

In conclusion based on the Barr Engineering and B&V studies, a wet cooling system using groundwater as the backup source is viable, the best economic solution, most efficient approach, and reduces overall station evaporative losses allowing a more efficient use of water.