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

TINA PINT

GEOLOGIST/HYDROGEOLOGIST

BARR ENGINEERING COMPANY

MARCH 15, 2006

BIG STONE II

PARTNERS IN GENERATION

TESTIMONY OF TINA PINT

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BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DIRECT TESTIMONY OF TINA PINT

I. INTRODUCTION

Q: Please state your name and business address.

A: Tina Pint. 4700 West 77th St., Suite 200, Minneapolis, Minnesota 55435-4803.

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

A: I am employed by Barr Engineering Company as a geologist/hydrogeologist.

Q: What is your educational background?

A: I have a B.S. in Geology from the University of Wisconsin-Eau Claire and an M.S. in Geology from the University of Wisconsin-Madison where I focused on hydrogeology.

Q: What is your employment history?

A: I have worked at Barr Engineering Company as a staff geologist/hydrogeologist since July, 2002.

Q: What work experience have you had that is relevant to your testimony?

A: While at Barr, I have worked on numerous projects that have involved geologic and hydrogeologic interpretation and fieldwork. I have worked on a variety of pipeline, power plant and mining projects, providing geology and hydrogeology expertise to those efforts. I have conducted field investigations for environmental assessment, including borehole drilling and monitoring-well construction observation; soil logging, screening, and sample collection; and groundwater sample collection. This has included characterizing subsurface glacial geology from geoprobe and split-spoon samples and drill cuttings. I have provided geologic interpretation and site-conceptual-model development for geologically complex sites in Montana, Minnesota,

and Michigan. I have mapped bedrock features and provided geologic interpretation at a contaminated bedrock site in Michigan. I have also assessed the effects bedrock fractures would have on groundwater flow into an unlined tunnel in Illinois.

In addition, I have worked on numerous projects that have used groundwater flow and contaminant transport models to solve a variety of problems.

Q: What professional organizations do you belong to?

A: I belong to the Geological Society of America and the Minnesota Groundwater Association.

Q: What classes and other training have you taken relating to [your subject matter]?

A: I attended "Improving Hydrogeologic Analysis of Fractured Bedrock Systems" presented by the Midwest Geosciences Group.

II. GEOLOGY

Q: Were you involved in evaluating the potential impacts of the proposed BS Unit II unit on the surrounding physical environment?

A: Yes

Q: Please describe your involvement.

A: I wrote Section 4.1.2 of the Application and generated Figures 4-2 and 4-3 (Surficial and Bedrock Geology).

Q: Please explain the issues as they are related to potential impacts to the physical environment from the proposed Big Stone Unit II.

A: There are no notable issues adversely affecting the geology at the site.

Q: Describe the results of your work.

A: The Big Stone II site is located on top of 150-200 feet of glacial drift, which includes end moraine and ground moraine till that is from the Upper Wisconsin stage of Pleistocene glaciation. The Whetstone River valley, which runs through the site, contains younger alluvium that can be up to 75 feet thick. Beneath the unconsolidated sediments is a sequence of Cretaceous aged sedimentary rocks. A buried bedrock valley, trending southwest to northeast, underlies the site. At the southern boundary of the study area, older (upper Archean) granite subcrops.

Q: Did you review other studies or work product in making your evaluation and/conclusions?

A: The Section 4.1.2 text and figures 4-2 and 4-3 were based on the following sources:

- Martin, J.E, J.F. Sawyer, M.D. Fabrenbach, D.W. Tomhave, and L.D. Schulz. 2004. Geologic Map of South Dakota. South Dakota Department of Environment and Natural Resources – Geological Survey.
- Tomhave, D.W., and L.D. Schulz. 2004. Bedrock Geologic Map Showing Configuration of the Bedrock Surface in South Dakota East of the Missouri River. South Dakota Department of Environmental and Natural Resources – Geological Survey.

Q: Are there any specific permitting issues we need to be concerned about with respect to this issue?

A: No.

Q: How did you obtain and analyze information relevant to your work?

A: Data used was downloaded from the South Dakota Department of Environment and Natural Resources website: http://www.sdgs.usd.edu/printedpubmaps/index.html

Q: Are there any constraints that should be imposed on Big Stone Unit II because of geological characteristics as required by ARSD 20:10:22:14(8)?

A: No, the analysis showed that the overall indirect or cumulative geological characteristics do not require any constraints on the project.

Q: Does this conclude your testimony?

A: Yes.