Exhibit ___ (JI-5)

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STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Otter Tail Power Company's Petition for an Advance Determination of Prudence for its Big Stone Air Quality Control System Project	)))	OAH Docket No. 8-2500-22094-2 MPUC Docket No. E-017/M-10-1082

Rebuttal Testimony of

Rachel S. Wilson

Synapse Energy Economics

On Behalf Of

Izaak Walton League of America - Midwest Office

Fresh Energy

Sierra Club

Minnesota Center for Environmental Advocacy

September 7, 2011

ATTACHMENT

Attachment JI-1-A: Current Resume of Rachel S. Wilson.

I. INTRODUCTION

Q. Please state your name, position and business address.

A. My name is Rachel Wilson. I am an Associate at Synapse Energy Economics, Inc, 485 Massachusetts Avenue, Cambridge, MA 02139.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Izaak Walton League of America – Midwest Office, Fresh Energy, Sierra Club, and Minnesota Center for Environmental Advocacy ("Joint Intervenors").

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government and utilities.

Q. Ms. Wilson, please summarize your educational background and recent work experience.

A. I hold a Master of Environmental Management from Yale University and a Bachelor of Arts in Environment, Economics, and Politics from Claremont McKenna College in Claremont, California.

At Synapse, I conduct research and assist in writing testimony and publications, focusing on a variety of issues relating to electric utilities, including: federal and state clean air policies; emissions from electricity generation; environmental compliance technologies, strategies, and costs; integrated resource planning; valuation of environmental externalities from power plants; and the nexus between water and energy.

I also provide project support through modeling-related analysis of electric power systems. I am proficient in the use of optimization and electricity dispatch models, including STRATEGIST, PROMOD, and PROSYM/Market Analytics, to conduct analyses of utility service territories and regional energy markets. I have participated in in-house trainings for STRATEGIST, and also attended an advanced training session at the Atlanta headquarters of Ventyx, an ABB Company.

Prior to joining Synapse in 2008, I worked for Analysis Group, Inc., an economic and business consulting firm, where I focused on issues relating to energy and the electric industry. I was also a Research Assistant at the Yale Center for Environmental Law and Policy and was responsible for collecting and processing data on corporate and environmental strategy, as well as environmental performance data on a country-by-country basis.

Attachment A to this testimony is a copy of my current resume.

Q. Have you previously submitted testimony before this Commission?

A. No, I have not.

Q. What is the purpose of your testimony?

A. My testimony describes the Strategist modeling I performed for this docket.

Q. Please describe your modeling.

A. It was my responsibility, using STRATEGIST databases provided by the Minnesota Department of Commerce (DOC) in Docket No. RP-10-623, to execute modeling runs with revised input assumptions.

Prior to executing any modeling runs with any changes to the inputs, I executed runs with DOC's preferred plan database, submitted by Dr. Steve Rakow, in order to recreate its results to verify that there would not be any issues with using different software versions or processors. I was able to exactly reproduce the results of the DOC's runs.

I then constructed a new base case scenario that modified specific STRATEGIST input assumptions developed by Otter Tail Power and included in the DOC base case. I used the modified input assumptions presented in testimony in this proceeding by David Schlissel as follows:

1. OTP coal costs plus 20%
2. OTP gas costs minus 150 cents
3. CO_2 costs of $21.50 per ton, beginning in 2016

In addition to the above modifications to Dr. Rakow's Base Case, his assumed efficiency for the gas-fired combined cycle ("gas CC") capacity needs to be corrected. A power plant conversion efficiency is typically referred to as a "heat rate" and expressed in terms

of fuel input (in Btu) per unit of electricity generation output (in kWh). [1] For this analysis, the gas CC heat rate assumption is important, because this is the source for much of the energy that replaces Big Stone. In Dr. Rakow's STRATEGIST model runs he has the gas CC heat rate at about **[TRADE SECRET MATERIAL BEGINS…**

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While this is efficient compared to steam units such as Big Stone, it is a poor efficiency for a combined cycle unit. The heat rate for a new gas CC should be much better than what Dr. Rakow assumed. Indeed, the Otter Tail Power levelized cost analysis, presented by witness Jeffrey Kopp, assumed a gas CC heat rate of 6680 Btu/kWh. I therefore modified the heat rate input assumption for the gas CC by 10 percent to make it closer to the assumption in OTP's levelized cost analysis. This puts the resulting heat rate from my STRATEGIST model results at about **[TRADE SECRET MATERIAL BEGINS…**

…TRADE SECRET MATERIAL ENDS]

Arguably the heat rate assumption for the gas CC should be even lower, e.g., the 6680 Btu/kWh from OTP's levelized cost analysis.

I executed two model runs with these revised input assumptions. The first model run included the retrofit of the Big Stone unit, while the second retired the unit in 2016. These model runs show that under this revised base case, with the four input assumption

[1] My understanding is that Dr. Rakow did not change the heat rate inputs that OTP used in its STRATEGIST modeling in Docket No. RP-10-623.

changes described above, retiring Big Stone results in a cost savings (using the Present Value Societal Cost) of approximately $72.4 million.

Q. Does this complete your testimony?

A. Yes.