BEFORE THE
PUBLIC SERVICE COMMISSION
OF WISCONSIN

Application of Wisconsin Public Service Corporation for its System Modernization and Reliability Project	6690-CE-198

PRE-FILED REBUTTAL TESTIMONY OF

STEVEN A. FENRICK

FOR
WISCONSIN PUBLIC SERVICE CORPORATION

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Steven A. Fenrick. My business address is 1532 West Broadway, Madison, Wisconsin 53713.

Q. By whom are you employed and in what capacity?

A. I am employed by Power System Engineering, Inc. Power System Engineering was founded in 1974 and is a full-service consulting firm serving the utility industry. My title at Power System Engineering is "Leader, Benchmarking & Economic Studies." I supervise the cost and reliability benchmarking and statistical cost research practice areas at Power System Engineering.

Q. What are your responsibilities with Power System Engineering?

A. I am responsible for energy utility performance benchmarking, productivity analysis, value-based reliability planning, statistical cost modeling, and demand side management economic analysis. The group I head works with regulatory commissions, utilities, and consumer advocate clients to provide economic and statistical analysis. Our benchmarking practice has examined the cost and reliability performance of over a hundred utilities. Part of our benchmarking research includes examining the trade-offs and proper balancing of reliability and cost levels for electric utilities.

Q. Please briefly describe your educational and professional background as it relates to this project.

A. I have a B.S. degree in Economics from the University of Wisconsin-Madison. I also received an M.S. degree in Agriculture and Applied Economics from the University of Wisconsin-Madison. I have worked at Power System Engineering since 2009. I initiated the benchmarking and statistical cost research practice areas at the company. Before starting at Power System Engineering, I was at Pacific Economics Group from 2001 until 2009, where I served as an Economist and later as a Senior Economist. I have published a number of academic journal articles on reliability benchmarking and statistical cost research. I regularly work with utilities, regulators, and consumer advocacy groups in conducting benchmark evaluations. These evaluations are used both for regulatory purposes and for internal management improvement initiatives.

Q. What is the purpose of your testimony?

A. I am responding to points made by Mr. Hahn in his pre-filed direct testimony. More specifically, Wisconsin Public Service Corporation (WPS) asked me to conduct a capital cost performance analysis related to the SMRP, and I am providing the results of that analysis.

Q. On Direct-CUB-Hahn-8c, Mr. Hahn states that SMRP will cost "more than $2.6 million per minute of outage reduced" and goes on to note that "[t]his seems like an extraordinarily high figure." Do you agree?

A. No. The cost per minute of outage reduced is not high by industry standards. In fact, the opposite is true. SMRP is less expensive on a cost per minute of outage reduced basis when compared to industry-wide metrics.

Q. What is your opinion based upon?

A. My opinion is based on the SAIDI impact benchmark result. This result is derived from a model I developed to address and evaluate the cost-effectiveness of reliability projects. I have used similar models in a number of different settings to estimate reliability and cost performance and to assist in the evaluation of the cost-effectiveness of utility reliability-driven projects.

Q. Please generally explain how you conducted your analysis.

A. The process involved a comparison of the estimated SMRP capital cost and expected SAIDI performance to industry-wide benchmark levels determined using two econometric models. The first, a SAIDI econometric model, examines the impact of utilities' capital cost levels on SAIDI values after controlling for the effects of other factors that influence SAIDI. These factors include the level of forestation of a service territory, customer density and weather conditions. Utilities that have high capital costs relative to the industry-wide benchmark values tend to have better SAIDI values. The capital cost levels used in the SAIDI model are actually capital cost performance scores obtained from another econometric model, which we call the capital cost model. The capital cost model develops capital cost performance scores by considering factors that affect cost but are outside the control of utilities.

Q. Are the models based on industry-wide data?

A. Yes. The capital cost benchmark model includes data from 96 U.S. investor owned utilities (IOUs) for the years 2002-2011. The SAIDI impact model includes data from 52 IOUs for the years 2002-2011. These utilities were the ones for which the requisite data were available. The capital cost data is mostly gathered from FERC Form 1s filed annually by IOUs. The SAIDI data is gathered by Power System Engineering through publicly-available regulatory filings of reliability.

Q. What inputs do your models generally consider?

A. In general, model inputs consider business conditions that are known to affect capital cost of electricity distribution and SAIDI. Three categories of variables are considered for the capital cost model: output, prices and “other” business condition variables. These include the number of customers served, line miles and retail deliveries; the price of capital; and the level of vertical integration and output diversification. The variables considered for the SAIDI model include the level of service territory forestation, customer density, weather and the capital cost performance scores.

Q. What did the models find relative to the interaction between SAIDI improvement and capital spending?

A. The capital cost elasticity of SAIDI is -0.285, such that a one percent increase in the capital score (increased capital spending of one percent) results in a 0.285 percent reduction in SAIDI. In other words, when a utility increases its capital spending by one percent, it is expected to see a SAIDI improvement equal to approximately 0.285%. This finding is quite logical and is statistically significant at a 90 percent confidence level. In the context of the SMRP, WPS is proposing to increase its distribution capital costs by approximately 43 percent. Our models predict that the industry-wide average SAIDI improvement associated with such spending would be approximately 12%. Yet WPS is expecting a SAIDI improvement of around 20 to 25 percent (which is between 67 and 84 minutes). Put another way, the industry-wide average cost per minute of outage reduction for a project of this size would be $5 million, and SMRP ranges from about $2.6 - $3.3 million per minute of outage reduction. SMRP is therefore very cost-effective and is expected to deliver twice the benefit that our industry-wide model predicts. The SMRP offers strong reliability benefits for the money spent.

Q. Mr. Hahn also argues that the project should be conducted over a ten year period rather than a five year period, do you agree?

A. Given WPS's current need for improved reliability and the cost-effectiveness of the SMRP based on our SAIDI improvement benchmark analysis, it is my opinion that the project should be implemented as soon as possible. Spreading out the project over a longer time frame would delay the realization of cost-effective reliability improvements to the customers of WPS.

Q. Does this complete your rebuttal testimony?

A. Yes.