BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Power & Light Company, Wisconsin Public Service Corporation, and Madison Gas and Electric Company for a Certificate of Authority to Install Emissions Reductions Systems at the Columbia Energy Center Units 1 and 2

DOCKET NO. 05-CE-138

SUPPLEMENTAL DIRECT TESTIMONY
OF DAVID A. SCHLISSEL
ON BEHALF OF
JOHN MUIR CHAPTER OF THE SIERRA CLUB

OCTOBER 9, 2009
List of Exhibits

Exhibit 429(DAS-16) Public EGEAS Analyses Planning Matrix Results for Intervenor Futures
Q. What is your name, position and business address?
A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

Q. What is the purpose of this Supplemental Direct Testimony?
A. I am presenting the results of some additional EGEAS runs that the Applicants undertook in response to Intervenor requests.

Q. Please describe the additional scenarios that Intervenors asked the Applicants to examine in new EGEAS runs.
A. Intervenors asked the Applicants to examine two new Futures (Nos. 11 and 13) with the four original Plans plus a Plan #7.

Future No. 11 asked the Company to modify its Future #5 in the following ways:
- Use the natural gas price forecast developed by LaCapra witness Hahn
- Use the Synapse Mid CO2 Price Forecast
- Move the first year of CO2 monetization from 2015 to 2013
- Add DSM as a resource equal to 2% of sales beginning in 2012
- Lower the biomass capital cost to $4,000 per kW
- Decrease the biomass fuel cost to $4.00 per MMBtu
- Start SO2 allowances prices at $65/ton decreasing over time to $28/ton.

Future No. 13 asked the Company to modify its Future #5 in the following ways:
- Use the Applicants’ gas price forecast increase by 10 percent to reflect greenhouse gas regulation instead of the 30 percent assumed by the Applicants
- Use the Synapse Mid CO2 Price Forecast
1. Move the first year of CO₂ monetization from 2015 to 2013
2. Add DSM as a resource equal to 2% of sales beginning in 2012
3. Lower the biomass capital cost to $4,000 per kW
4. Decrease the biomass fuel cost to $4.00 per MMBtu
5. Start SO₂ allowances prices at $65/ton decreasing over time to $28/ton.

Q. Please describe the new Plan that the Applicants included in their new EGEAS runs.

A. Plan #7 started with Future 5 and then assumed:
   1. That Hg ACI/BH would be installed on both units on January 1, 2015; decreasing the capacity of each unit by 4 MW and increasing their heat rates by 57 BTU/kWh
   2. The Columbia units would not be retired in 2018 and instead were retired in whatever year the Companies assumed for Plan 1.
   3. The following units would be retired on December 31, 2014:
      - WPL – Nelson Dewey 1&2 – 222.4 MW
      - WPS – PUL 5&6 – 121 MW
   4. All sunk and decommissioning costs were removed from the calculation of Columbia Station revenue requirements (and sunk costs from the Nelson Dewey or PUL units also were not included).

Q. What were the results of the Applicants’ new EGEAS runs?

A. The results of the Applicants’ new EGEAS runs are presented in Exhibit 429 (DAS-16). These results show:
   1. In each of the new Futures examined, delaying the installation of the FGD until 2018 (Plan 3) is a lower cost option that proceeding with adding the controls as the Applicants have proposed (Plan 1 or Plan 2).
   2. With the LaCapra natural gas prices, Plan 4, early retirement of Columbia Units 1 and 2 in 2013, has a lower NPV cost than Plan 1 and Plan 2.
• With the Applicants’ natural gas prices increased by an additional 10 percent, Plan 4 is more expensive than Plan 1 or Plan 2.

• Plan 7 is a lower cost option in both Futures 11 and 13—the only Futures for which it was modeled.

Q. Do the modeling results presented in Exhibit 429 (DAS-16) include the sunk costs for the Columbia, Nelson Dewey and PUL units?

A. Yes. The public modeling results presented in Exhibit 429 (DAS-16) do include the sunk costs for those units. In other words, they have not been removed.

Q. Do you believe that the results of the Future 13 EGEAS runs persuasively demonstrate that installation of the emission controls would be a lower cost and less risky alternative for the Applicants’ ratepayers than the retirement and replacement of Columbia Units 1 and 2 would be?

A. No. In Future 13, Plan 4 would be only 1.4 percent more expensive than Plan 1 and would be only 0.6 percent higher than Plan 2 (the plan that installs an SCR in addition to a scrubber on each unit). These are relatively minor differences given the substantial uncertainties of projecting such factors as loads and resources and power plant capital and operating costs over a nearly thirty year period. Moreover, there are also a number of factors which lead me to believe that the relative economic benefits of Plans 1 or 2 versus Plan 4 are overstated in Future 13.

First, as discussed by Staff witness Detmer, as part of the EGEAS modeling process, it is important to look at the current economic downturn and its effect on the Applicants’ forecast sales and peak demands.\textsuperscript{1} The Applicants do not appear to have revised the forecasted loads and energy sales assumed in their EGEAS modeling for Futures 11 or 13 to reflect the current economic downturn. It is
reasonable to expect that this will affect the relative economics of Plan 4 versus Plans 1 and 2.

Second, as I have discussed in my September 25, 2009 Direct Testimony, there is no persuasive modeling evidence that regulation of greenhouse gas emissions would increase natural gas prices over any extended period, let alone by 10 percent in every year of the analysis beginning in 2013. Even though Future 13 assumes that regulation of greenhouse gas emissions would increase natural gas emissions by 10 percent instead of the far higher 30 percent assumed by the Applicants in their earlier EGEAS analyses (Futures 5 through 10), I believe that even the 10 percent assumed increase in natural gas prices used in Future 13 overstates the impact that federal greenhouse gas regulation will have.

Third, the base natural gas prices used by the Applicants in the EGEAS runs are much higher than other gas price forecasts we have seen in recent months. These high base natural gas prices bias the Applicants’ modeling analyses in favor of continued operation of Columbia Units 1 and 2.

Finally, the Applicants’ new EGEAS runs did not examine the relative economics of the various plans under a higher set of CO₂ price forecasts such as Synapse’s High CO₂ prices. Use of these higher CO₂ prices certainly would significantly reduce, or perhaps even eliminate, any NPV benefit for Plans 1 and 2 shown in Exhibit 429 (DAS-16)

For these reasons, I would not recommend that the Commission give much, if any, weight to the results of the Future 13 comparisons between Plan 4 and Plans 1 and 2 presented in Exhibit 429(DAS-16)
Q. Do the modeling results for Plan 7 support a conclusion that the Commission should deny the current application and require the Applicants to analyze new alternatives that include retirement of smaller and/or less efficient existing coal units as a way to comply with CAIR, visibility, mercury, and other pollutant regulations?

A. Yes. As the model results for Plan 7 show that there is at least one scenario that involves retiring smaller and/or less efficient units is comparable or less costly than installing the proposed pollution controls on Columbia 1 and 2. It is reasonable to expect that there may be other scenarios, involving combinations of retirements and natural gas repowering of those units, would provide more options for lower cost reductions in multiple pollutants, including greenhouse gases.

Q. Does this complete your Supplemental Direct Testimony?

A. Yes.