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Public Service Commission of Wisconsin
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Response of
Wisconsin Power and Light Company
to
The Public Service Commission of Wisconsin
Data Request No. 6.04

Docket Number:	05-CE-137
Date of Request:	August 27, 2009
Information Requested By:	Jim Lepinski
Date Responded:	
Author:	Joe Holliman
Author's Title:	Sr Asset Strategy Consultant
Author's Telephone No.:	(319) 786-4882 / (608) 458-3841
Witness: (If other than Author)	

Data Request No. 6.04:

Provide a comparison and discussion regarding how lower capacity factors than those provided within the EGEAS analysis may affect the cost-effectiveness of the project, given the recent reductions in Midwest Independent Transmission System Operator (MISO) energy consumption, the recent decrease in natural gas costs, projected CO2 emission limits, etc.

Response:

Under a consideration that simply compares the fixed costs for the SCR against capacity factors, one might expect to see that a reduced capacity factor at Edgewater Unit 5—holding all else equal—would result in a higher dollar per MWh cost. However, WPL believes that a change in capacity factor at Edgewater Unit 5 would not occur in a vacuum. Rather, WPL believes that the events that would cause a reduced capacity factor at Edgewater Unit 5 would likely have additional effects, including, potentially, effects on the capacity factors at other generating units within and beyond WPL's fleet. As such, WPL believes that it is important to try to understand the conditions that could or would result in a lower capacity factor at Edgewater Unit 5.

Given the consideration at issue in this docket – control NOx emissions on Edgewater Unit 5 to comply with the Phase II of the RACT rule or retire Edgewater Unit 5 in 2012 -- WPL believes the cost-effectiveness and value of the SCR investment is the difference in PVRR between Plans 1 and 2 of WPL's EGEAS analyses. This measure of value is made within the confines of the EGEAS modeling. The impact that recent reductions in MISO energy consumption, recent reductions in natural gas costs and projected CO2 emission limits may have on the value of the SCR installation are addressed below.

The plan-future combinations WPL provided in its Third Supplemental response to Staff DR 3.22 includes futures with price variations in both natural gas prices and CO2. These futures serve as the basis for WPL's response to this data request, noting that capacity factors are a result of modeled conditions.

Recent reduction in MISO consumption

While WPL did not run a Midwest ISO load sensitivity case, WPL recognizes that a reduction in MISO load would likely reduce MISO energy requirements. Reduction in energy requirements is expected to lead to a reduction in generation output and associated unit capacity factors. This process would likely impact higher cost units initially and eventually impact base-load units depending on the degree of load reduction. Since MISO prices energy at the margin, this process is expected to reduce MISO prices.

A long-term reduction in MISO loads or consumption would likely reduce the value of the SCR installation since economic deployments of new plant in Plans 1 and 2 would likely be deferred. Such a deferral would likely reduce the PVRR of both Plans 1 and 2, but likely more so for Plan 2 since Edgewater Unit 5 would be retired. As such, WPL would expect the value to be reduced. However, the recent down turn in MISO consumption is likely tied to the current recession. WPL would expect economic recovery within the WPL service territory and/or across the MISO footprint to mitigate SCR value reduction under the forgoing scenario. This would assume that the recent economic down-turn is temporary relative to the 35-year planning horizon used in WPL's EGEAS analysis.

Recent reduction in natural gas prices

Future 8 addresses a 10 percent reduction in natural gas prices holding all other variables constant at their Future 1 assumptions. A comparison of Plan 1 under Futures 1 and 8 shows that the Edgewater Unit 5 capacity factors increase by an average of 4% over the planning horizon, yet the PVRR differential decreases by $ 57.6 million. The capacity factor increase is due to changes in the economically selected expansion plan. Namely, Future 8 has less wind generation selected up front and less coal-fired generation selected later on in the expansion plan compared to Future 1.

Applications of CO2 monetization

The analysis WPL provided in this case shows two variations in anticipated CO2 monetization:

1. Monetization without a cap on emissions as used by PSCW Staff in Docket no. 6680-CE-170 (Futures 2 and 5). Both Futures 2 and 5 show a positive value to install the SCR.

2. Monetization with a cap on emissions as used by We Energies (WEPCO) in its response to PSCW staff DR KD-2 in docket No. 6630-CE-302. (Futures 6, 7, and 10 show a positive value to install the SCR.

The following table compares the PVRR differentials and annual capacity factors for Futures 1, 6, and 10

	Future 1	Future 6	Future 10
PVRR Differential Between Plan 1 and 2	$616.5 million	$450.3 million	$110.4 million
Average Annual Capacity Factor for Edgewater Unit 5 Over the Planning Horizon for Plan 1	70%	67%	58%