NorthWestern Energy
Delivering a Bright Future

April 27, 2016

Mr. Will Rosquist
Administrator, Regulatory Division
Montana Public Service Commission
1701 Prospect Ave.
P. O. Box 202601
Helena MT 59620-2601

RE: Docket D2015.8.64 – Greycliff Petition
Updated Response to PSC-052b in PSC Set 5 Data Requests

Dear Mr. Rosquist:

Enclosed for filing is NorthWestern Energy's updated response to Data Request PSC-052b in the PSC Set 5 Data Requests (047-055).

It will be hand delivered to the Montana Public Service Commission and the Montana Consumer Counsel this day. It will also be e-filed with the PSC, emailed to counsel of record and mailed to the service list.

If you have any questions, please call Joe Schwartzenberger at (406) 497-3362.

Sincerely,

Pam LeProwse

Pam LeProwse
Administrative Assistant
Regulatory Affairs

PSC-052 RE: PowerSimm Modeling and Avoidable Resources
Witness: Hansen

a. Please confirm that the PowerSimm model used to estimate avoided costs in this case uses NorthWestern's current portfolio of resources for the base run rather than the "Economically Optimal Portfolio" (EOP) described in the 2015 Plan, Vol. 1, Ch. 12.

b. Please estimate the avoided cost of the Greycliff resource using the EOP as the base case, under each of the following alternative assumption sets:

i.) The avoidable resource when supply is long is the curtailable resource with highest variable cost,

ii.) The avoidable resource when supply is long is the market, and

iii.) The avoidable resource when supply is long and the highest cost curtailable resource is less than market is the curtailable resource, while the avoidable resource when supply is long and the highest cost curtailable resource is greater than market is the market.

RESPONSE:

a. Confirmed. The PowerSimm model used the current portfolio of resources for this analysis rather than the "Economically Optimal Portfolio" (EOP) as described in the 2015 Plan due to the fact that the current portfolio of resources (with the hydroelectric assets) was the preferred portfolio from the 2013 Plan. This was the most current preferred portfolio as the 2015 Plan had not been filed.

b. Per the Notice of Staff Action issued April 18, NorthWestern will respond to this subpart on April 27.

UPDATED RESPONSE (April 27, 2016):

b. i) See the table below.

PSC-052 cont'd

Avoided Cost			**Avoided Cost**	
Without Carbon Forecast			**With Carbon Forecast**	
Firm Energy & Capacity Value	$ 31.24		Firm Energy & Capacity Value	$ 41.24
DA Firm vs. RT price	$ (1.99)		DA Firm vs. RT price	$ (1.99)
Interconnection Network Upgrades	$ (5.02)		Interconnection Network Upgrades	$ (5.02)
Transmission Network Upgrades	$ -		Transmission Network Upgrades	$ -
Capacity Value	$1.98		Capacity Value	$ 1.98
Wind Generation Integration			*Wind Generation Integration*	
Regulation - 25 Year Levelized	$ (0.52)		Regulation - 25 Year Levelized	$ (0.52)
Spinning Reserve Service (BA Tariff)	$ (0.61)		Spinning Reserve Service (BA Tariff)	$ (0.61)
Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)		Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)
Avoided Cost	**$ 23.99**		***Avoided Cost with Carbon Forecast***	**$ 33.99**

The question asks NorthWestern to make certain calculations under alternative assumptions. This subpart asks NorthWestern to use the EOP as the base case and estimate the avoided cost with the avoidable resource as the curtailable resource with the highest variable cost when supply is long. The following resources are curtailable: Dave Gates Generating Station ("DGGS"), Basin Creek, and Colstrip Unit 4 ("CU4"). These resources, however, are not curtailable at all times. If the variable cost of the resource is higher than the market, the resource will not be run and therefore is not curtailable due to economic dispatch.

Given this fact, in order to answer this question, NorthWestern used DGGS variable costs in the calculation if that resource was curtailable as it has the highest variable costs. If DGGS was not curtailable due to economic dispatch, Basin Creek's variable costs were used in the calculation. If Basin Creek was not curtailable due to economic dispatch, CU4's variable costs were used in the calculation. If CU4 was not curtailable due to economic dispatch, a zero value was used in the calculation.

ii) See the table below.

Avoided Cost			**Avoided Cost**	
Without Carbon Forecast			**With Carbon Forecast**	
Firm Energy & Capacity Value	$ 36.38		Firm Energy & Capacity Value	$ 46.31
DA Firm vs. RT price	$ (1.99)		DA Firm vs. RT price	$ (1.99)
Interconnection Network Upgrades	$ (5.02)		Interconnection Network Upgrades	$ (5.02)
Transmission Network Upgrades	$ -		Transmission Network Upgrades	$ -
Capacity Value	$1.98		Capacity Value	$ 1.98
Wind Generation Integration			*Wind Generation Integration*	
Regulation - 25 Year Levelized	$ (0.52)		Regulation - 25 Year Levelized	$ (0.52)
Spinning Reserve Service (BA Tariff)	$ (0.61)		Spinning Reserve Service (BA Tariff)	$ (0.61)
Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)		Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)
Avoided Cost	**$ 29.14**		***Avoided Cost with Carbon Forecast***	**$ 39.06**

PSC-052 cont'd

iii) See the table below.

Avoided Cost			**Avoided Cost**	
Without Carbon Forecast			**With Carbon Forecast**	
Firm Energy & Capacity Value	$ 31.48		Firm Energy & Capacity Value	$ 43.80
DA Firm vs. RT price	$ (1.99)		DA Firm vs. RT price	$ (1.99)
Interconnection Network Upgrades	$ (5.02)		Interconnection Network Upgrades	$ (5.02)
Transmission Network Upgrades	$ -		Transmission Network Upgrades	$ -
Capacity Value	$1.98		Capacity Value	$ 1.98
Wind Generation Integration			*Wind Generation Integration*	
Regulation - 25 Year Levelized	$ (0.52)		Regulation - 25 Year Levelized	$ (0.52)
Spinning Reserve Service (BA Tariff)	$ (0.61)		Spinning Reserve Service (BA Tariff)	$ (0.61)
Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)		Supplemental Reserves Service (non-spin; BA Tariff)	$ (1.09)
Avoided Cost	**$ 24.23**		***Avoided Cost with Carbon Forecast***	**$ 36.55**

The calculation for this question is identical to the calculation in subpart i other than the circumstance when the market price is lower than the variable cost of all three potentially curtailable resources: DGGS, Basin Creek, and CU4. Under this circumstance, none of these resources would be economically dispatched so they wouldn't be available for curtailment. As a result, under this scenario, Greycliff's generation is valued at the market sales price rather than given a zero value as provided for in subpart i.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of NorthWestern Energy's updated response to Data Request PSC-052b in the PSC Set 5 Data Requests (047-055) in Docket No. D2015.8.64 has been hand delivered to the Montana Public Service Commission and the Montana Consumer Counsel this date. It has also been e-filed on the PSC website, emailed to counsel of record, and mailed to the remainder of the service list as follows:

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Date: April 27, 2016

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