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April 29, 2013

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501

RE: In the Matter of the Complaint by Oak Tree Energy, LLC against NorthWestern Energy for refusing to enter into a Purchase Power Agreement
Docket EL11-006

Dear Ms. Van Gerpen:

During the April 23, 2013, Commission meeting, Commissioner Nelson asked Mr. Rounds whether additional growth applied to the peak blocks would have a material impact on the price, given that the number of hours in those blocks is so small. Mr. Rounds replied that he had run some numbers during the evidentiary hearing that he thought indicated a drop of about $3 or $4.

Following the meeting, Staff decided to re-run its model. First, Staff ran the model using Commissioner Nelson's January 22, 2013, load shape with a 2.25% annual growth rate spread constant across all blocks. This is the method both NorthWestern and Staff argued would incorrectly place growth in the peak hours and cause an error in favor of Oak Tree. Next, Staff ran the same model using a load shape that has a 1% annual peak growth and a 2.25% annual energy growth. The additional energy was placed in the lower blocks in a way that evenly flattens load shape. The result was a levelized price *increase* of approximately $1, rather than a decrease of $3 to $4 that Mr. Rounds mentioned during the April 23, 2013, meeting. Staff's April 11, 2013, filing argued this point incorrectly as well, and Staff felt it was important to correct this misinformation. Additional details are found below.

Model Inputs
The original model submitted by Mr. Rounds had a number of inputs corrected by Commissioner Nelson and subsequent commission decisions, so it is important to point out the following adjustments made to the model since it was filed as testimony in the December evidentiary hearing:

- Capacity cost is $36/kW-year in 2013 and 2014, then growing at 5.84% annually.
- Accredited capacity is locked at 20% of 18.915 MW annually.
- NorthWestern baseload generation is set at 191 MW.
- Levelized cost calculation was corrected to account for the time value of money. Initial discount value is set at 7.86%.

Load Shape Adjustment
In order to evenly distribute the additional energy provided by the higher energy growth rate, Staff first calculated the amount of additional energy generated. Next, Mr. Rounds created a "total growth room" which sums each block's potential MWh growth before hitting the peak, which is growing at 1%. Finally,

the additional energy is spread across each block as a function of that block's growth room in comparison to the total growth room of all blocks. An example is given below for block B2 in 2013.

Block B2 2013 Example

Peak   = 2013 Block B1
                 = 319.8 MW

Load Factor   = (2012 Block B2) / (2012 Block B1)
                    = 305.0 / 316.6
                    = 0.964

B2 Growth Room   = (1 - Load Factor) x (Peak) x (# of hours in block)
                    = (1 - 0.964) x 319.8 x 25
                    = 287.88 MWh

Total Growth Room = (Room for Growth in B2 through B20)
                    = 1,112,544.747 MWh

Growth in B2   = (Additional Energy) x (B2 Growth Room) / (Total Growth Room)
                    = (20,761 MWh) x (287.88 MWh) / (1,112,544.747 MWh)
                    = 5.37 MWh

New B2 Value   = <u>(Load Factor) x (Peak) x (# of hours in block) + (Growth in B2)</u>
                                       (# of hours in block)
                    = <u>0.964 x 319.8 x 25 + 5.37</u>
                                25
                    = 308.5 MW

A comparison of the load shape is provided in Exhibit A, with the resulting avoided costs compared in Exhibit B. Staff is also including the excel spreadsheets that generated these exhibits, to be placed on the internet.

Acknowledged Error
When comparing Staff's recreation of Commissioner Nelson's January 22, 2013 model, there is a slight difference in resulting costs. Staff's model results in a 2013 cost of $35.17 increasing to a 2033 cost of $75.19 whereas Commissioner Nelson's model resulted in a 2013 cost of $35.18 increasing to a 2033 cost of $75.79. Staff believes this is due to two small modifications. First, the load shape calculated by Commissioner Nelson and used by Staff in this case was provided down to 3 decimals, but it appears Mr. Nelson's calculations are more precise load factors based on his calculations. That is – although his spreadsheet shows a load factor of 0.964 for Block B2, he might actually be using a more precise load factor of 0.963624986 or something similar that rounds to 0.964. This error, however, does not appear to be material. The second and more pronounced difference comes in capacity costs. Staff's model assumes capacity costs are held constant until 2015, whereas Commissioner Nelson's model begins escalation in 2013.

Sincerely,

Karen E. Cremer

Karen E. Cremer

CC: service list