

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

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IN THE MATTER OF NorthWestern Energy's)
Application for Approval to Purchase and) REGULATORY DIVISION
Operate PPL Montana's Hydroelectric Facilities,)
for Approval of Inclusion of Generation Asset) DOCKET NO. D2013.12.85
Cost of Service in Electricity Supply Rates, for)
Approval of Issuance of Securities to Complete)
the Purchase, and for Related Relief)

HUMAN RESOURCE COUNCIL, DISTRICT XI; AND THE
NATURAL RESOURCES DEFENSE COUNCIL
RESPONSE TO
DATA REQUESTS MCC-226 through MCC-231
OF THE MONTANA CONSUMER COUNSEL

MCC-226

Regarding: Historical Power and Natural Gas Prices
Witness: Thomas Michael Power

Dr. Power's response testimony contains a graph of daily Mid-C power and Sumas natural gas prices from 2000 through 2010, the source of which is said to be a "Puget Sound Energy 2013 Integrated Resource Plan, Appendix K, Figure K-5, Page K-13." See page 4 of Dr. Power's response testimony. Please provide a copy of the complete Puget Sound Energy 2013 Integrated Resource Plan, including all Appendices.

Response

The entire Puget Sound Energy 2013 Integrated Resource Plan is available at <https://pse.com/aboutpse/EnergySupply/Pages/Resource-Planning.aspx>

MCC-227

Regarding: Historical Power and Natural Gas Prices
Witness: Thomas Michael Power

With respect to the graph presented at page 4 of Dr. Power's response testimony:

a) Please describe in more detail the Mid-C power prices presented in that graph, e.g., are they the single highest price on each day, the simple average on-peak price each day, the volume-weighted average on-peak price each day, the simple average of all prices each day, the volume-weighted average of all prices on each day, or some other price.

b) Please describe in more detail the Sumas natural gas prices presented in that graph, e.g., are they the single highest price on each day, the simple average on-peak price each day, the volume-weighted average on-peak price each day, the simple average of all prices each day, the volume-weighted average of all prices on each day, or some other price.

Response

a) Dr. Power's understanding is that the Mid-Columbia daily electric prices in the cited Puget Sound Energy figure were calculated as the average of the daily Mid-C on- and off-peak prices weighted by the number of hours in those periods.

b) Dr. Power was presenting the cited figure to show the variation in Mid-Columbia electric prices. His response testimony does not deal with the variation in natural gas prices. Puget Sound Energy only specified that the Sumas natural gas market prices were "daily" prices.

MCC-228

Regarding: Historical Mid-C Power Prices
Witness: Thomas Michael Power

With respect to the graph presented at page 4 of Dr. Power's response testimony:

a) That graph describes historical Mid-C power prices from 2000 through 2010. Has Dr. Power reviewed, analyzed, or studied historical Mid-C power prices for periods after 2010?

b) If so, please provide copies of all documents relating to any such reviews, analyses, or studies.

c) Please describe the opinions reached by Dr. Power resulting from his reviews, analyses, or studies relating to the documents being provided in response to b) above.

d) If there are no documents responsive to b) above, please describe the opinions reached by Dr. Power from his reviews, analyses, or studies of historical Mid-C power prices for periods after 2010.

Response

a) Yes.

b) Dr. Power follows the trends and fluctuations in Mid-Columbia electric prices as reported by EIA, the financial press, and the reports of the Northwest Power and Conservation Council and regional utilities. He does not keep copies of that daily or weekly information.

c) Since 2010 Mid-Columbia prices trended downward, with considerable fluctuations, until mid-2012 when those prices began trending upward from very low levels. The Northwest Power and Conservation Council, in its "Update to the Wholesale Electricity Price Forecast" (February 2013) projected Mid-C real electric prices (2010\$s) would rise from their very low levels over the coming decades (2012-2032) (see <http://www.nwcouncil.org/media/6829307/wholesaleelectricity.pdf>). The steepness of the increase would depend on the level of carbon emission regulation as well as how much natural gas prices increased. NWE's projected market electric prices, in general, are below those projected by the Northwest Power and Conservation Council.

d) See c) above.

MCC-229

Regarding: Historical Sumas Natural Gas Prices
Witness: Thomas Michael Power

With respect to the graph presented at page 4 of Dr. Power's response testimony:

a) That graph describes historical Sumas natural gas prices from 2000 through 2010. Has Dr. Power reviewed, analyzed, or studied historical natural gas prices for periods after 2010?

b) If so, please provide copies of all documents relating to any such reviews, analyses, or studies.

c) Please describe the opinions reached by Dr. Power resulting from his reviews, analyses, or studies relating to the documents being provided in response to b) above.

d) If there are no documents responsive to b) above, please describe the opinions reached by Dr. Power from his reviews, analyses, or studies of historical Sumas natural gas prices for periods after 2010.

Response

- a) Dr. Power included the graph on page 4 of his response testimony to illustrate the fluctuations in electric market prices in the Pacific Northwest. That figure happened to also have Sumas Gas Prices on it too. Dr. Power's testimony makes no use of or reference to those natural gas prices.
- b) Dr. Power follows developments in natural gas markets through EIA publications, the planning documents of regional utilities, including NorthWestern Energy, and the financial and energy press. He does not keep copies of that daily and weekly information.
- c) See a) above.
- d) See a) above.

MCC-230

Regarding: Historical Mid-C Prices
Witness: Thomas Michael Power

With respect to the graph presented at page 4 of Dr. Power's response testimony:

- a) Does Dr. Power agree that the price spikes shown there in late 2000 to early 2001 were due to the California energy crisis?
- b) For periods after 2008, does Dr. Power agree that each upward Mid-C power price spike lasted only for a short period of time, and was then followed quickly by price declines? If not, please identify periods after 2008 when an upward Mid-C power price spike was followed by periods in which prices remained at or relatively near the price spike level for extended periods of time.
- c) Does Dr. Power agree that Mid-C power prices have been less volatile from 2009 through the present than they were during 2002 through 2008?
- d) Does Dr. Power agree that Mid-C power prices have been lower in most months from 2009 through the present than they were in most months during 2002 through 2008?

Response

- a) The high market electric prices were due to a regional electricity crisis that impacted a significant part of the Western United States.

b) By definition a “spike” is a short-period movement upward followed by a sharp decline (although such a sudden downward movement and then recovery could be considered a “spike” too). For that reason the answer, by definition, must be “yes.” All “spikes” involve a rapid movement away from previous values and then a rapid return to values closer to the original value.

However, Mid-C electric prices rose from early 2007 to mid-2008 and then moved downward from mid-2008 to mid-2009. Prices then moved upward for 6 months before fluctuating downward through mid-2012 before rebounding upward through mid-2013. So there were significant movements of regional electric prices up and down in addition to infrequent “spikes” in prices.

c) Dr. Power has not done a statistical test to determine the level of volatility in electric prices for different recent time periods. Volatility can be analyzed in terms of total variation or in terms of variation from a trend line, potentially leading to different conclusions. From the beginning of 2002 until the beginning of 2008 there were five narrow “spikes” of relatively large amplitude (as reflected in daily prices). After the beginning of 2009 there were four spikes of significant but smaller amplitude and a fifth, the latest in late January and the first weeks of February of 2014 of very large amplitude. During the winter of 2014 cold weather caused a reduction in stored natural gas, which in turn triggered natural gas price increases which drove regional electric prices upward. (EIA ICE Electric 2014)

d) In general, yes. Between 2009 and 2012 Mid-C electric prices were often lower than the prices between 2002 and 2008. However, there were periods when the prices were similar.

MCC-231

Regarding: Historical Sumas Natural Gas Prices
Witness: Thomas Michael Power

With respect to the graph presented at page 4 of Dr. Power’s response testimony:

a) Does Dr. Power agree that the price spikes shown there in late 2000 to early 2001 were due to the California energy crisis?

b) For periods after 2008, does Dr. Power agree that each upward Sumas natural gas price spike lasted only for a short period of time, and was then followed quickly by price declines? If not, please identify periods after 2008 when an upward Sumas natural gas price spike was followed by periods in which prices remained at or relatively near the price spike level for extended periods of time.

c) Does Dr. Power agree that Sumas natural gas prices have been less volatile from 2009 through the present than they were during 2002 through 2008?

d) Does Dr. Power agree that Sumas natural gas prices have been lower in most months from 2009 through the present than they were in most months during 2002 through 2008?

Response

a) See response to MCC-299(a) above. Dr. Power has not analyzed the impact of the California electric crisis in 2000-2001 on Sumas natural gas prices. On an annual basis the Sumas prices for those years were not unusually high. Sumas prices rose to significantly higher level than the 2000 and 2001 levels between 2003 through 2008.

b) See response to MCC-230(b) above. Sumas prices rose from mid-2007 through mid-2008 and then declined from mid-2008 through mid-2009. Whether these were “spikes” or normal fluctuations may be a matter of terminology. It is not clear that the Sumas prices ever “remained at or relatively near” any particular price level between 2000 and 2014.

c) Dr. Power has not done a statistical test to determine the level of volatility in natural gas prices for different recent time periods. Volatility can be analyzed in terms of total variation or in terms of variation from a trend line, potentially leading to different conclusions. From 2002 through 2008 Sumas prices, with considerable fluctuations and periodic “spikes” moved upward from about \$3 per MMcf to about \$12 per MMcf. Then Sumas prices dropped from about that \$12 peak to about \$3 in 2012 only to begin rising again to about \$6, spiking in the winter of 2014 at above \$25 before returning to a \$4 to \$5 range.

d) Yes. After peaking above \$10 at the end of 2008, Sumas prices declined to below \$5 for most of 2009. Sumas prices then hovered in the \$5 to \$6 range through the end of 2013. Sumas prices during 2003 through mid-2005 were in that same range. From late December 2013 through February 2014, Sumas prices spiked due to cold winter weather and concern over the drawdown of stored natural gas.