

February 13, 2014

Ms. Kate Whitney
Montana Public Service Commission
1701 Prospect Avenue
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Helena, MT 59620-2601

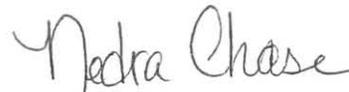
RE: Docket No. D2013.12.85
PPLM Hydro Assets Purchase
PSC Set 6 Data Requests (084-103)

Dear Ms. Whitney:

Enclosed for filing is a copy of NorthWestern Energy's responses to PSC Set 6 Data Requests (PSC-084-PSC-103). A hard copy will be mailed to the most recent service list in this Docket this date. The Montana Public Service Commission and the Montana Consumer Counsel will be served by hand delivery this date. This data response will also be e-filed on the PSC website and emailed to counsel of record.

Should you have questions please contact Joe Schwartzenger at 406 497-3362.

Sincerely,



Nedra Chase
Administrative Assistant
Regulatory Affairs

NC/nc
CC: Service List

CERTIFICATE OF SERVICE

I hereby certify that a copy of NorthWestern Energy's responses to PSC Set 6 Data Requests (PSC-084-PSC-103) in Docket D2013.12.85, the PPLM Hydro Assets Purchase, has been hand delivered to the Montana Public Service Commission and to the Montana Consumer Counsel this date. It will be e-filed on the PSC website and served on the most recent service list by mailing a copy thereof by first class mail, postage prepaid. It will also be emailed to counsel of record.

Date: February 13, 2014

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Nedra Chase
Administrative Assistant
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Hydro Assets Purchase
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PSC-084 RE: Combined Asset Valuation
Witnesses: Stimatz, parts a & e / Meyer, part b

- a. The date on the spreadsheet you provided in response to PSC-066 is June 24, 2013. Please confirm that the valuation of coal assets found in this spreadsheet reflects NorthWestern's understanding that the sale leaseback would be bought out prior to execution of the sale. (See Bird Direct Testimony, p. 10:1-2).
- b. Did you modify the conforming LT Rev Req model provided in PSC-003 to account for the removal of sale leaseback restrictions? If so, please provide the model.
- c. Did your analysis reveal that combining thermal assets with the Hydros hedged the NPV of the total package to some degree against uncertainty in the Carbon Adder? That is, did you find that although higher expected carbon costs would cause an increase in expected operating costs of the thermal assets, the increased costs would be offset to some degree by increased revenues to both types of assets; and that decreased thermal plant costs due to lower expected carbon costs would be accompanied by decreased revenues?
- d. How did NorthWestern value the potential of the combined thermal and hydro package to hedge net present value against changes in forecast carbon costs?
- e. Please explain why, in the "Dispatch" tab of the PSC-066 Mustang Valuation spreadsheet; Colstrip 1&2 and Corette power is assumed sold at Off-System prices, and Colstrip 3&4 and Hydros power is sold at On-System prices.

RESPONSES:

- a. Confirmed.
- b. While the LT Rev Req Model as provided in response to Data Request PSC-003 included the Colstrip lease expense, it never included the entirety of the "sales leaseback restrictions" or other unknown and unquantifiable environmental costs. Subsequently, when we were notified in round two we should assume a terminated sales leaseback, we removed the lease expense and associated cash lease payments from the LT Rev Req Model but still did not attempt to include or

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quantify all future environmental costs and or risks. However, for the numerous reasons discussed in the Rowe, Bird, Hines, and Stimatz Direct Testimonies, we determined not to pursue the thermal assets and didn't produce a final conforming model (i.e. including all thermal and hydro assets) for the round two process. Also see the response to Data Request PSC-003c.

- c. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- d. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- e. The valuation analysis recognized that the amount of generation in the thermal and hydro portfolios that was being sold exceeds the unmet load requirements in Montana. Some of the generation serves NorthWestern's load, some serves other load in the state such as the choice customers, and some must be moved off-system to market. The generation that is moved off-system will realize a lower net price than generation used to serve on-system load. For purposes of modeling, NorthWestern reflected this condition by using the on-system prices to value the units with the lowest variable costs (the Hydros and Colstrip 3) and the off-system prices to value the units with higher variable costs (Corette and Colstrip 1 and 2).

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PSC-085 RE: Hydro and Thermal Assets
Witness: Stimatz, part a / Bird, parts b & c

- a. Did the net present value of \$736 million for the combined thermal and hydros assets, as shown in cell J:8 of the "Valuation" tab in the PSC-066 Mustang Valuation spreadsheet, or a similar value from a similar, previous spreadsheet, inform your non-conforming bid of \$740 million on January 7, 2013?
- b. On 9:1-3 you testify that "PPL noted that if NorthWestern increased the offer price on the all-asset bid and could resolve differences in NorthWestern's and PPL's positions on the terms of the PSA, a deal was possible." Did PPL ever indicate to you or other NorthWestern agents that the non-conforming bid of \$740 million was acceptable or near-acceptable as bid for the combined assets, conditioned on resolution of the PSA differences?
- c. On 10:1-7 you state that NorthWestern was no longer interested in PPL's thermal assets although PPL had removed the sale leaseback restriction. If so, then why the analysis dated June 24, 2013 provided in response to PSC-066?

RESPONSES:

- a. No.
- b. PPL did not indicate in Mustang I that a non-conforming bid of \$740 million was acceptable as the transaction's discussions terminated over our proposed terms and conditions, which PPL found unacceptable. Thus, it is difficult to say what price (with our terms) would have been acceptable.
- c. As I explain further in my testimony on pages 10 and 11, we continued to evaluate buying all of the PPLM assets after we entered into the bilateral agreement with PPLM. Ultimately, we determined that the risks of an all-asset bid to our customers and shareholders were too high. An all-asset bid would have resulted in NorthWestern acquiring more power than it needed, which raised numerous issues relating to cost recovery, market power and prudence. In addition, we determined that the environmental risks associated with additional coal at Colstrip were unacceptable. Thus, we bid only for the Hydro assets.

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PSC-086 RE Hydro and Thermal Assets
Witness: Hines

- a. On 7:1-4 you testify that “[NorthWestern’s] preference has always been to own just the Hydros. From NorthWestern’s perspective, it only needed about half the megawatts that PPL was selling, and the Hydros are a clean generation source that would provide diversity to NorthWestern’s fleet.” Please explain the consequence to NorthWestern of acquiring too much capacity.
- b. Would the expected consequence of acquiring over-capacity change if NorthWestern also acquired PPL’s Western Power Marketing Business, or “Book”, as described on p. 6 of the Confidential Information Memorandum?
- c. Regarding the “diversity” of NorthWestern’s fleet, do you agree that the primary objective of portfolio diversity is mitigating risks associated with unknown future values of important variables such as fuel and carbon costs?
- d. Do you agree that since all interested parties would be very aware of potential future carbon and other environmental costs associated with coal-fired electricity generation, that any bids for the Colstrip and Corette assets would be significantly discounted to account for environmental risk, and so NorthWestern could have bid competitively for those resources at a price that offset or neutralized that risk?
- e. How did NorthWestern value the potential of the combined thermal and hydro package to hedge net present value against the uncertainty of future environmental costs? That is, since the value of the thermal assets would be expected to decline with unexpected increases in environmental costs, and the value of the hydro assets would be expected to increase with unexpected increases in those costs, how did NorthWestern value the NPV stabilizing property of a combined package with respect to the uncertainty in future environmental costs?

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RESPONSES:

- a. This question is essentially asking: What would the consequences be of NorthWestern acquiring nearly double the generation capacity that it needs to meet its customers' needs?

First, if all of PPLM's coal and hydro assets were included in NorthWestern's regulated supply portfolio, the Commission would have had to agree that such an acquisition, which would be substantially in excess of the portfolio's total generation needs, was indeed prudent and that the costs associated with all of the assets would be included in rate base and borne by customers. One result is that the calculation of customers' rates would have to include a significant amount of revenue credits from the sale of this excess energy. The amount of the revenue credits would potentially have substantial variation as market prices change, meaning that rates would also vary.

Second, if some of the assets were treated as unregulated by the Commission, other issues arise. One issue would have been the difficulty in reaching agreement about which assets would be in the regulated book and which would be in the unregulated book. Also, NorthWestern was concerned that with the addition of the coal generation to its portfolio, NorthWestern could fail key market concentration tests that would result in it having to sell the surplus generation at cost-based rather than market-based rates.

- b. No. The challenges described in the response to part a, above, would still apply. Acquiring the "book" would merely place NorthWestern in the position of being a marketer to unregulated supply customers. As the Commission is no doubt aware, being a marketer would impose risks to NorthWestern's regulated customers due to fluctuations in market prices which would be reflected in fluctuations in revenue credits. Another risk is that "book" customers can leave to choose an alternative supplier in a relatively short time and create even longer portfolio positions.
- c. No, NorthWestern does not agree. Other objectives include timing of generation output, type of output (baseload, intermittent, peak, etc.) as well as mitigating future unknown values.

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- d. No, NorthWestern does not agree. NorthWestern will not speculate how other parties, including hedge funds, value risks such as future carbon regulations or decommissioning costs. NorthWestern, in the development of its resource procurement plans and in the evaluation of the hydro assets, prudently set forth its methodology, including identification of risks, and followed these parameters in its evaluation.
- e. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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PSC-087 RE: Quantifying Value of Coal Facilities' Liabilities
Witness: Bird or Other

The responses to PSC-003(c) and (d) are appreciated but they lack detail as to how the concerns regarding the coal facilities were actually quantified in NWE's valuation and analysis leading to its 2013 bid that included the facilities.

- a. Please demonstrate how you quantified or assigned a dollar value to the environmental liabilities discussed in response to PSC-003(c).
- b. Provide any analytic work that supports the negative value described in Bird's testimony, and the zero rate base value shown in the LT Rev Req model attached in response to PSC-003(b)
- c. Please demonstrate how you quantified or assigned a dollar value to the lease-back provisions discussed in response to PSC-003(d).
- d. Were the environmental and lease-back liabilities described in response to PSC-003(c) and (d) captured as data in the LT Rev Req model produced in response to PSC-003(b)?

RESPONSES:

- a. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- b. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- c. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- d. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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- d. The LT Rev Req Model produced in response to Data Request PSC-003b was used in the same manner in the first round process (January 7, 2013 bid) as it was in the second round process (July 1, 2013). It was used to estimate the total revenue requirement necessary to own and operate the hydro facilities as regulated utility assets over a period of 30 years. See also "Purpose of the LT Rev Req Model" in Meyer Direct Testimony starting at page TEM-4, line 20.
- e. No, there were not subsequent iterations of the LT Rev Req Models. The models as produced in response to Data Request PSC-003b were the "final" models immediately prior to our round one bid (January 7, 2013).

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PSC-089 RE: Destroyed Final Models
Witness: Meyer

NWE notes that it destroyed the final models used to inform its first bid in response to a PPLM request in February 2013.

- a. Did NWE retain the inputs to or outputs of the final model produced in response to PSC-003(b)? Please clarify whether each of the following, which appear as lines of data in the model, was retained in some format: cap-ex, depreciation, rate-base (ending balance), deferred taxes, market curve (\$ per Mwh), variable O&M, fixed O&M.
- b. Describe which of the lines of data would have changed between the LT Rev Req model produced in response to PSC-003(b) and subsequent models that were used to inform the Jan. 2013 bid.

RESPONSES:

- a. Beyond the inputs and outputs included within the final model produced in response to Data Request PSC-003b, NorthWestern did not retain any supporting files per the CA. See the response to Data Request PSC-088a regarding the recovery of NorthWestern's LT Rev Req Model.
- b. None of the lines of data would have changed between the LT Rev Req Model produced in response to Data Request PSC-003b and subsequent models that were used to inform the January 2013 bid. This is believed to be the final 30-year revenue requirement model utilized to inform the process. See also the response to Data Request PSC-088e.

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PSC-090 RE: Cap-ex Estimates in LT Rev Req Model
Witness: Rhoads, part a / Meyer, part b

- a. How were cap-ex estimates for the coal facilities in the LT Rev Req model produced in response to PSC-003(b) derived? If they were sourced from PPLM, please describe what, if any, adjustments NWE made to them.
- b. Please confirm that the cap-ex estimates for the Hydros between the LT Rev Req model produced in response to PSC-003(b) and Exhibits TEM-1 and TEM-2 are substantially the same, and identify the cause for the few departures that appear to exist.

RESPONSES:

- a. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- b. Yes, the "Capital Expenditures" line in the cash flow statement for the Hydros between the LT Rev Req model produced in response to Data Request PSC-003b and Exhibits TEM-1 and TEM-2 are substantially the same. The capital expenditures are in fact equal each and every year through 2036 with a deviation starting in 2037 at which time the capital expenditures estimates for Exhibits TEM-1 and TEM-2 continue to escalate at 2.5% annually. The LT Rev Req Model, produced in response to Data Request PSC-003b and utilized in the January 7, 2013 process, holds the 2036 capital expenditures constant for the last 7 years.

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PSC-091 RE: DCF Analysis for Earlier Bids
Witness: Stimatz

Was a final DCF model retained that informed the NWE earlier bids for the PPLM facilities?

RESPONSE:

No. Please see the response to Data Request PSC-003b.

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PSC-092 RE Thermal CapEx vs. Hydro CapEx
Witness: John Vandaveer, part a / Stimatz, part c

In the spreadsheet provided in response to PSC-066, NWE in the “Thermal CapEx” tab lists both an “Expected Case” and a “High Case” for the Colstrip units. There appears to be only one cap-ex estimate, with no “high case” for the Hydros.

- a. Where did the cap-ex data appearing for the Thermal and Hydros come from?
- b. What specifically drives the difference between the “Expected” and “High” cases for the Colstrip units? Provide a list of the upgrades assumed in the Colstrip cap-ex forecasts.
- c. Why did NWE not try to produce other scenarios/cases of the Hydros’ required CapEx, as was the case with the Colstrip units?
- d. Did NWE consult other Colstrip co-owners’ publicly available information regarding cap-ex requirement estimates regarding Colstrip facilities (e.g., Puget Sound Energy) to check it against the cap-ex requirements assumed in the spreadsheet in response to PSC-066?

RESPONSES:

- a. On February 10, 2014, NorthWestern objected to the portion of this data request that pertains to thermal resources. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

As for the Hydros, all original backup data for the capital forecast was destroyed in accordance with the CA. The capital forecast was redeveloped from historical and forecast capital expenditures provided by PPLM. PPLM provided a specific five-year forecast for years 2013-2017 (see the response to Data Request PSC-018, parts a and b). Historical expenditures were also provided from 2008-2012 (see the response to Data Request MCC-057). Based on this information and the actual system upgrade status, a realistic capital annual aggregate amount was developed for year 2018 and escalated forward.

- b. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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- c. The purpose of the DCF modeling was to provide an estimate of the value that other potential bidders would place on the assets. "Expected" and "High" cases can be useful in estimating the potential valuation effects of significant future events, such as regulatory changes, that would dramatically impact expenditures. Since the regulatory environment for the Hydros is mature and stable, the difference between any "Expected" and "High" cases that potential bidders would have developed would likely have been minor. Because of this, it was not beneficial or necessary for NorthWestern to develop such cases for the DCF analysis.
- d. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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PSC-093 RE: Fuel & Carbon Inputs to O&M
Witness: Stimatz, part b

- a. In the DCF model provided in response to PSC-066, the fuel cost increases dramatically for Colstrip Unit 3 in 2020. Explain this increase, and the footnote included in the spreadsheet.
- b. Is the carbon price forecast that is used in the DCF model for the purposes of calculating the carbon O&M price the same as the carbon forecast that NWE presented in its Application?
- c. What tons/Mwh is assumed in the calculation of the carbon O&M price for the Colstrip 1 & 2 and Colstrip 3 plants?

RESPONSES:

- a. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- b. No. The carbon cost for the thermal units in the DCF model provided in response to Data Request PSC-066 reflects the carbon assumptions from the 2011 Plan, which included the benefit of allowances that were assumed to be allocated to coal plants owned by utilities. This resulted in a lower cost (and therefore higher valuation) for the coal plants in the DCF model than would have been calculated had the full carbon price been applied as costs for the coal plants.
- c. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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PSC-094 RE: Environmental Risks in DCF Model
Witness: Rhoads, part a / Stimatz, parts b-e

Under the "G&A, Contingency Items" tab in the spreadsheet provided in response to PSC-066, several environmental liabilities are listed.

- a. Is "Thompson Falls Reservoir" the expenses related to the cleanup of contaminated river sediments described on WTR-43-44.
- b. Why are some rows, including "Sierra Club Litigation," "Kluver Case" and "Colstrip Coal Ash Ponds" listed, but blank of expected G&A expenditures?
- c. Is there any significance to the fact that "Sierra Club Litigation" is highlighted, and, if so, what is that significance?
- d. In the row "Colstrip Coal Ash Ponds," it is parenthetically noted that this is "included in Colstrip capital." Does this mean it is included in the CapEx forecast within this spreadsheet and, if so, is it included in the "Expected" or "High" case?
- e. Are the other liabilities that are not quantified in the "G&A, Contingency Items" tab, somehow elsewhere in this spreadsheet numerically quantified as risks?

RESPONSES:

- a. Yes. See also the response to Data Request PSC-080.
- b. See the response to part e, below.
- c. No.
- d. Again, the backup to inputs to the model were destroyed in accordance with the CA with PPL. However, the capital expense anticipated for Colstrip Coal Ash Ponds was included in the 10-year capital budgets provided by PPLM for Colstrip and, as such, was included in both the Expected Case and the High Case since both cases used the PPLM 10-year capital budget as presented for years 2014 through 2022.

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- e. No, with the exception of the Colstrip ash ponds as noted in the response to part d, above. However, not all environmental risks could be quantified for purposes of the model. See also the response to Data Request PSC-003c.

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PSC-095 RE: Financial Consequences of Worst-Case Scenarios
Witness: Rhoads

In the response to PSC-023 and PSC-024 you characterize the potential financial liabilities that could result from worst case scenarios at dams as “not relevant” to this docket, notwithstanding that the Commission is charged with, among other things, identifying whether the cost of the Hydros (including risk) favorably compares to other resources.

Is NWE contending that identifying worst case scenarios and their financial consequences is “not relevant” because the company, and not its customers, should those scenarios occur, would bear their financial consequences?

RESPONSES:

No. The author of this data request has confused the legal definition of “relevant” for purposes of discovery (reasonably calculated to lead to the discovery of admissible evidence) with the common meaning of “relevant” (having a bearing on the matter at hand). NorthWestern is not contending that identifying worst case scenarios and their financial consequences is “not relevant” in the common sense. NorthWestern is contending that attempting to identify worst case scenarios related to the matters raised in the specific data requests is not relevant in the legal sense for discovery.

Please reference the Emergency Action Plans (EAPs) attached as Exhibit __ (WTR-8.4) [Hebgen] and Exhibit __ (WTR-8.7) [Madison]. Both of these exhibits were attached to the Prefiled Direct Testimony of William T. Rhoads and provided on a protected CD to parties who signed the appropriate non-disclosure agreement pursuant to Protective Order No. 7323.

The purpose of the EAPs is to provide maximum early warning to all persons involved in the unlikely event of a failure (catastrophic or otherwise) of the dam or other water retaining structures at the Hebgen and Madison Developments. In addition to providing maximum early warning, the objective is to minimize or eliminate danger to all people and/or property downstream of the project.

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Through consideration of both “fair weather” and “major flood” failure modes and their consequences, areas which may be affected by a dam failure have been identified. The plans are based on notification of inhabitants, property owners and recreationists through various public safety agencies and authorities.

The probability of an emergency of the magnitude considered in these plans is extremely remote and it does not imply that there are concerns about the integrity of the projects. The dam is inspected regularly by PPLM operations and engineering personnel, annually by FERC engineers, and at five-year intervals by FERC-approved independent engineering consultants.

EAP Section VIII Appendix contains a section which discusses the assumption used in the dam break analysis. Figure A-1 in the Appendices portrays elevation and section views of the dams, including dimensions, with the assumed breaches for the Hebgen and Madison Plants indicated in yellow. Comparing the failures identified in PSC-023 and PSC-024 to those in the EAPs, the EAPs' failure assumptions are the more conservative failure assumptions.

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PSC-096 RE: Likelihood of Risks
Witness: Dorris

With reference to your response to PSC-016, how is it decided which risks fall above or below the 99th or 95th percentiles?

RESPONSE:

The PowerSimm analysis performed for the 2013 Plan incorporated risks that can be calibrated using historical data, including plant forced outages, annual and seasonal hydro energy availability, load & price spikes, etc. The magnitude, frequency, and correlations of these risk factors are estimated using the historical record, and the factors' simulation in the PowerSimm dispatch module informs the variability of expected costs. These factors are considered to be within the 99th or 95th percentile of likely outcomes based solely on their simulated occurrence based on the estimated statistical models.

Risk factors that cannot be calibrated accurately using historical data were not included in the PowerSimm analysis performed for the 2013 Plan. These include catastrophic plant outages, dam failures, etc. that are absent from the historical record and thus were not included in the statistical models that drive the PowerSimm simulation engine. Because no robust data exist to calibrate the likelihood of these major events, PowerSimm does not attempt to estimate their likelihood nor force their inclusion in the dispatch simulations. These events are thus considered to be above the 99th percentile of likely outcomes and their potential impact was not captured in the PowerSimm analysis prepared for the 2013 Plan. For these and other very low-probability events, PowerSimm can optionally be configured to manually represent their occurrence using a scenario analysis approach; however, given the lack of data to inform the likelihood of these events, the analysis for the 2013 Plan did not attempt to include them.

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PSC-097 RE: FERC Regulation of Hydros
Witness: Rhoads

With respect to your response to PSC-020, when has the process you outline, where consensus between FERC, the licensee and its consultants is reached, occurred during the period of PPLM's ownership, and with respect to which issues?

RESPONSE:

Consensus is routinely reached during any given year on any number of processes or topics which include items that can arise from Annual FERC Dam Safety Inspections, Part 12 Safety Inspections, or operational or environmental-related items that occur.

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PSC-098 RE: Short-Term CapEx Estimates
Witness: Vandaveer

With respect to the list of itemized capital expenditures needed in the short term, provided in response to PSC-018(a), would you characterize these upgrades as routine and typical of the requirements of the Hydros into the future, or somehow out of the ordinary? Please explain in either case.

RESPONSE:

The level of capital expenditures forecast for the short term (five years) is an adequate amount to sustain reliable operation with strategic generation equipment upgrades. The level of forecast expenditures beyond the next five years is also sufficient for normal system improvements. The system upgrade summary over the recent past that includes major modernization and the conclusion of planned system strategies supports the relatively level amounts forecast near and long term. The upgrade summary provided by PPLM and reviewed through the due diligence process identifies major plant unit upgrades and the substantial completion of auxiliary support systems across the operations. The smaller plants (Hauser, Black Eagle and Madison) remain to have substantial improvements initiated that are included in forecasts.

NorthWestern Energy
Docket D2013.12.85
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Public Service Commission (PSC)
Set 6 (084-103)

Data Requests served January 30, 2014

PSC-100 RE: Capital Costs in 2013 Plan
Witness: Fine

With respect to the response to PSC-048:

- a. Why does NWE now consider it necessary to include the assumption of an “air-cooled condenser” for its next-best portfolio, which includes a CCCT?
- b. Another Montana regulated utility, in its IRP, has avoided modeling a premium for a small-scale CCCT by assuming that it would enter into a partnership to build one with another entity. Why is that not a reasonable assumption for NWE?
- c. Another Montana regulated utility has recently entered into a significant, low-cost PPA for wind. Why, for NWE, is wind modeled using a build-transfer assumption, as opposed to a PPA?
- d. Please explain the significant divergence in natural-gas generating resources’ capital costs between the 2013 RPP and the PPLM CIM.

RESPONSES:

- a. Please see the response to Data Request PSC-082c.
- b. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- c. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.
- d. On February 10, 2014, NorthWestern objected to this data request. NorthWestern will respond, if necessary, after the Commission has ruled on the objection.

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Public Service Commission (PSC)
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PSC-101 RE: Customer Bill Impacts
Witness: DiFronzo/Stimatz

Assume that this acquisition is approved and that rates reflecting the cost of service become effective of Jan. 1, 2015. Referencing the spreadsheet provided in response to PSC-034, is it then accurate to conclude that rates for a typical residential consumer will rise from an estimated \$80.56 per month to \$87.22 per month, an increase of 8.3%?

RESPONSE:

Yes. The figures referenced above accurately reflect what is depicted in the spreadsheet provided in response to Data Request PSC-034. However, it is important to recognize that the supply portfolio without the Hydros is very dependent on wholesale market prices. The amount of the typical residential customer bill without the Hydros would depend on spot and forward market prices experienced between now and January 1, 2015, as well as on any market purchases NorthWestern executed in that time. While the addition of the Hydros is expected to cause an initial increase in rates, their inclusion in the portfolio is expected to significantly contribute to long-term rate stability.

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Public Service Commission (PSC)
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PSC-103 RE: Capital Upgrades
 Witness: Gary Wiseman

- a. In response to PSC-064(a), it was stated that “[t]he installation of self-contained governors and auxiliary systems has also reduced large bulk oil systems at some of the projects.” Please explain how the stated installations reduced large bulk oil systems.

- b. In the response referenced above, it was also stated that “[t]he new components [of numerous upgrades that have occurred since 2000], of modern design and fabricated with modern materials, will provide for an extended, more reliable operational life for equipment and plant.” Please identify the most significant changes in design and fabrication that have been implemented, as well as any empirical evidence of extended operational life that result from them.

RESPONSES:

- a. At some of the plants, the older systems had one common large oil tank(s) system with oil feeding to all the generating units. Modern self-contained governor systems or bearing lubrication systems are individualized for each generating unit and these systems operate at higher pressures and thus have relatively smaller oil volume to provide their operational control or lube functions. The net result for the plant is that the overall oil volume in these systems is less than that in the older common bulk oil system. This distributive arrangement of individual systems contributes to unit operational reliability. And the reduction in plant oil volume limits the environmental risk of a potential oil leak or spill.

- b. Changes in design and fabrication include the following:
 - Unit control systems upgraded from electro-mechanical design to solid state;
 - Generator rewinds providing winding insulation materials of improved insulating properties;
 - Generator step-up transformers (GSU) of water cooled design replaced with GSUs with oil cooled system;

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PSC-103 cont'd

- Turbine runner replacements providing runners of improved metallurgy, and;
- Turbine upgrades providing self-lubricating polymer alloy bearings and seals for turbine shaft and wicket gates, replacing components requiring oil or grease lubrication.

The experience of hydro plant owners (industry experience) and information from equipment suppliers indicate that these items contribute to improved operational reliability, reduced maintenance issues, and extended operational life of the equipment or component.