NorthWestern® Energy
Delivering a Bright Future

January 24, 2014

Ms. Kate Whitney
Montana Public Service Commission
1701 Prospect Avenue
P.O. Box 202601
Helena, MT 59620-2601

RE: Docket No. D2013.12.85
PPLM Hydro Assets Purchase
PSC Set 2 Data Requests (036-058)

Dear Ms. Whitney:

Enclosed for filing is a complete copy of NorthWestern Energy's response to PSC Set 2 Data Requests. As noted, certain of these responses were provided on January 17, 2014. For convenience, the January 17th responses are included here, but any associated attachments are not provided again.

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. These data responses will also be e-filed on the PSC website and emailed to counsel of record.

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

Sincerely,

Nedra Chase

Nedra Chase
Administrative Assistant
Regulatory Affairs

NC/nc
CC: Service List

CERTIFICATE OF SERVICE

I hereby certify that a complete copy of NorthWestern Energy's response PSC Set 2 Data Requests 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. They 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. These data requests will also be emailed to counsel of record. As noted, certain of these responses were provided on January 17, 2014. For convenience, the January 17th responses are included in this copy; any associated attachments are not.

Date: January 24, 2014

Nedra Chase

Nedra Chase
Administrative Assistant
Regulatory Affairs

Docket No D2013.12.85
Hydro Assets Purchase
ervice List

Joe Schwartzenberger
NorthWestern Energy
40 E Broadway
Butte MT 59701

Patrick R Corcoran
NorthWestern Energy
40 E Broadway
Butte MT 59701

Nedra Chase
NorthWestern Energy
40 E Broadway
Butte MT 59701

Al Brogan
NorthWestern Energy
208 N Montana Ave Suite 205
Helena MT 59601

Sarah Norcott
NorthWestern Energy
208 N Montana Ave Suite 205
Helena MT 59601

Kate Whitney
Montana Public Service Commission
1701 Prospect Ave Box 202601
Helena MT 59620-2601

Robert A Nelson
Montana Consumer Counsel
111 North Last Chance Gulch Ste1B
Helena MT 59620-1703

John W Wilson
J W Wilson & Associates
1601 N Kent Ste 1104
Arlington VA 22209

Albert E Clark
2871 Conway Rd. 127
Orlando FL 32815

Michael J Uda
Uda Law Firm, P C
7W 6th Ave Suite 4E
Helena MT 59601

Roger Kirk/Ben Singer
Hydrodynamics Inc.
521 E Peach, Suite 2B
Bozeman MT 59715

Joe Hovenkotter Gen Counsel
Energy Keepers Inc
110 Main Street Suite 304
Polson MT 59860

Ranald McDonald
CSKT Tribal Legal Dept
P O Box 278
Pablo MT 59855

Thorvald Nelson
Holland & Hart LLP
6380 South Fiddlers Green Circle
Suite 500
Greenwood Village CO 80111

Nikolas Stoffel
Holland & Hart LLP
6380 South Fiddlers Green Circle
Suite 500
Greenwood Village CO 80111

Charles Magraw
501 8th Ave
Helena MT 59601

Dr Thomas Power
920 Evans
Missoula MT 59801

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 2 (036-058)

Data Requests served January 2, 2014

PSC- 036

Regarding: PPLM Data Room, p. WTR-7
Witness: Unassigned

a. Provide the data in the PPLM data room.

b. Provide an index of the materials and information in the data room, with each file or item numbered using PPLM's numbering system and given a brief description. If any data room materials, information or files have already been provided to the Commission, please indicate where and when on the index.

RESPONSE (January 24, 2014):

a. NorthWestern objects to this subpart of this data request to the extent that it is overly broad and unreasonably vague, seeks information that is irrelevant, outside the reasonable scope of this proceeding, and not calculated to lead to the discovery of admissible evidence; seeks the production of documents without reference to a time period or with reference to a time period that has no relevance to the matters at issue in this proceeding; calls for the production of documents that are cumulative or contain duplicative information without a specific determination as to their relevance and the Staff's need for them, especially in light of the time and expense required to gather and produce the voluminous requested documents; imposes on NorthWestern undue expense or unreasonable burden; seeks information or documents relating to entities other than NorthWestern, including but not limited to information relating to plants of PPLM that are not part of this acquisition by NorthWestern; and requires public disclosure of information that is confidential or commercially sensitive to NorthWestern and/or PPLM.

Without waiving any of these objections, NorthWestern wishes to provide the Commission staff and the parties an orderly process for review of certain of the documents in the Data Room, and NorthWestern is willing to provide access to certain documents in the Data Room as follows: Commission staff and the parties would agree to maintain the full secrecy and confidentiality of documents while conducting *in camera* reviews, at a location away from the Commission's offices, of all documents designated in the index provided in response to part b, below, as Hydro-related or Mixed. Commission staff and the parties would then provide a list of any documents that are reasonably relevant to this proceeding and that they wanted NorthWestern to produce. NorthWestern would then prepare any objections or protective order motions and respond after those objections or protective order motions have been resolved.

PSC-036 cont'd

b. NorthWestern objects to this subpart of this data request to the extent that it is overly broad and unreasonably vague, seeks information that is irrelevant, outside the reasonable scope of this proceeding, and not calculated to lead to the discovery of admissible evidence; seeks the production of documents without reference to a time period or with reference to a time period that has no relevance to the matters at issue in this proceeding; and imposes on NorthWestern undue expense or unreasonable burden.

Without waiving any of these objections, NorthWestern is producing an index to the Data Room that PPLM provided to NorthWestern. NorthWestern notes that PPLM did not include certain filenames in this index. PPLM represented to NorthWestern that the filenames PPLM did not include contain employee personal information. See the folder labeled "PSC-036" on the attached CD. This index is organized by document and is marked as to whether each document is Hydro-related, Thermal-related, or related to both (Mixed).

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 2 (036-058)

Data Requests served January 2, 2014

PSC-037

Regarding: Assessments Of Litigation And Environmental Issues And Legal Review Of Mous

Witness: Rhoads

Exhibits_(WTR-2.1), (WTR-2.2) and (WTR-2.3) include references to reports or legal assessments that NorthWestern contracted for and received pertaining to the hydro facilities' litigation and environmental issues. In addition, there is at least one reference (Exhibit_WTR-2.3, p. 9) to a legal review of various MOUs between PPLM and various agencies/entities.

Provide copies of these legal assessments and/or reports and the MOU review(s).

RESPONSE (January 24, 2014):

NorthWestern objects to this data request to the extent that it seeks information or documents that are protected by privilege or work product. Privileged information and documents are not discoverable. M. R. Civ. P. 26(b)(1), § 26-1-803, MCA. NorthWestern has attached a Privilege Log that complies with the provisions of M. R. Civ. P. 26(b)(6).

Priv No.	Doc Type	Date	Description	From	To	CC	Bcc	Privilege Type
PRIV_400005	Memorandum	11/23/2012	Providing legal advice re: Environmental	Brown, B. Andrew; Stastny, Kristin	Grahame, Heather;Olson, Timothy			Attorney / Client; Work Product
PRIV_400006	Memorandum	11/20/2012	Providing legal advice re: Due Diligence	Brasher, Lance; Schultz, Ethan; Hochman, Michael	Grahame, Heather; Olson, Timothy			Attorney / Client; Work Product
PRIV_400010	Memorandum	12/31/2012	Providing legal advice re: Environmental	Brown, B. Andrew; Hammer, Bradley	Grahame, Heather; Olson, Timothy			Attorney / Client; Work Product
PRIV_400012	Memorandum	6/27/2013	Providing legal advice re: Environmental	Brown, Andrew; Stastny, Kristin	Grahame, Heather; Olson, Timothy			Attorney / Client; Work Product
PRIV_400017	Memorandum	9/19/2013	Providing legal advice re: Environmental	Brown, Andrew; Stastny, Kristin	Grahame, Heather; Olson, Timothy			Attorney / Client; Work Product
PRIV_400023	Memorandum	9/23/2013	Providing legal advice re: Regulatory	Brasher, Lance	NorthWestern Board of Directors			Attorney / Client; Work Product

PSC-038

Regarding: Compliance Obligations, Exhibit__(WTR-2.3), p. 9
Witness: Rhoads

Please provide the August 26, 2013 memorandum re: "Review of PPLM's List of License Articles with Compliance Requirements and Current Project Status."

RESPONSE (January 24, 2014):

NorthWestern objects to this data request to the extent that it seeks information or documents that are protected by privilege or work product. Privileged information and documents are not discoverable. M. R. Civ. P. 26(b)(1), § 26-1-803, MCA. NorthWestern has attached a Privilege Log that complies with the provisions of M. R. Civ. P. 26(b)(6).

Priv No.	Doc Type	Date	Description	From	To	CC	Bcc	Privilege Type
PRIV_300001	Memorandum	8/27/2013	Providing legal advice re: FERC license requirements	Naeve, Mike; Richman, Gerald; Gong, Karis Anne	Graham, Heather; McLain, M. Andrew			Attorney / Client; Work Product

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 2 (036-058)

Data Requests served January 2, 2014

PSC-039

Regarding: Avoided Market Purchases
Witness: Stimatz

a. Provide the contracts for market purchases referred to on 12:1 of your testimony, and produce a table that identifies their terms, prices, and conditions.

b. How does the price of the Hydros compare to the market purchases described in (a), in which NWE has contracted to engage?

RESPONSE (January 24, 2014):

a. See Attachment in the folder labeled "PSC-039" on the CD attached to PSC-036. These are confirmations under the associated master contract. The table below summarizes the transactions.

Deal Number	Trade Date	Location	Hours	Volume (MW)	Start Date	End Date	Price Per MWh	Price from June 7 Curve	Difference
On Peak Transactions									
31096	2/21/2013	MIDC	On Peak	25	7/1/2014	9/30/2014	$ 40.00	$ 41.80	$ 1.80
32426	6/11/2013	MIDC	On Peak	50	7/1/2014	9/30/2014	$ 41.50	$ 41.80	$ 0.30
31097	2/21/2013	MIDC	On Peak	25	10/1/2014	12/31/2014	$ 40.00	$ 40.97	$ 0.97
31628	4/9/2013	MIDC	On Peak	25	10/1/2014	12/31/2014	$ 39.95	$ 40.97	$ 1.02
32199	5/29/2013	MIDC	On Peak	25	10/1/2014	12/31/2014	$ 41.50	$ 40.97	$ (0.53)
32224	5/30/2013	MIDC	On Peak	75	1/1/2015	12/31/2015	$ 39.90	$ 39.00	$ (0.90)
32227	5/30/2013	MIDC	On Peak	25	1/1/2015	12/31/2015	$ 39.50	$ 39.00	$ (0.50)
32225	5/30/2013	MIDC	On Peak	50	1/1/2016	12/31/2016	$ 41.85	$ 40.91	$ (0.94)
32228	5/30/2013	MIDC	On Peak	25	1/1/2016	12/31/2016	$ 41.40	$ 40.91	$ (0.49)
32226	5/30/2013	MIDC	On Peak	25	1/1/2017	12/31/2017	$ 43.70	$ 42.53	$ (1.18)
32229	5/30/2013	MIDC	On Peak	25	1/1/2017	12/31/2017	$ 43.35	$ 42.53	$ (0.83)
32235	5/30/2013	NWMT	On Peak	200*	7/1/2014	12/31/2014	Index Based	NA	NA
Off Peak Transactions									
32230	5/30/2013	MIDC	Off Peak	50	1/1/2015	12/31/2015	$ 29.95	$ 28.99	$ (0.96)
32231	5/30/2013	MIDC	Off Peak	25	1/1/2015	12/31/2015	$ 29.75	$ 28.99	$ (0.76)
32232	5/30/2013	MIDC	Off Peak	25	1/1/2016	12/31/2016	$ 31.90	$ 30.26	$ (1.64)
32233	5/30/2013	MIDC	Off Peak	25	1/1/2016	12/31/2016	$ 31.50	$ 30.26	$ (1.24)
32234	5/30/2013	MIDC	Off Peak	25	1/1/2017	12/31/2017	$ 33.25	$ 30.71	$ (2.54)
Around the Clock Transactions									
32289	6/3/2013	NWMT	All Hours	50	7/1/2014	12/31/2015	Index Based	NA	NA

*Transaction to be terminated on closing of Hydro acquisition.

PSC-039 cont'd

b. The market purchases are not directly comparable to the acquisition of the Hydros because their terms are much shorter (ranging from 3 to 18 months). However, the DCF analysis performed as part of the evaluation of the Hydros valued the output from the dams at the forward curve from June 7, 2013. The relevant price used in the DCF analysis and the comparison to the prices of the market transactions is shown in the two rightmost columns above.

PSC-040

Regarding: Carbon Regulation
Witness: Hines

NWE points to a Supreme Court decision "holding that EPA already has the authority under the Clean Air Act to regulate greenhouse gas emissions" (14:21-23). Has NWE analyzed more recent Supreme Court activity in respect to the legality of existing point-source regulation of greenhouse gas emissions and, if so, what are NWE's conclusions regarding that activity?

RESPONSE (January 24, 2014):

The purpose of my reference to the 2007 Supreme Court opinion was to point out that the EPA has the authority under the Clean Air Act to regulate greenhouse gas emissions and that the EPA is now exercising that authority through the Administration's Climate Action Plan. Our Legal Department, and not Energy Supply, analyzes U.S. Supreme Court cases.

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 2 (036-058)

Data Requests served January 2, 2014

PSC-041

Regarding: Carbon Price Escalation
Witness: Hines

Please provide a revised Graph 3 (p. 19) that does not include a forecast carbon price adder.

RESPONSE (January 24, 2014):

NorthWestern objects to this data request because it is beyond the proper scope of data requests in that it requires NorthWestern to undertake an analysis that it did not make in evaluating the acquisition or preparing its Application and to produce a document that does not currently exist.

PSC-042

Regarding: Incline in Hydros Cost in 2033
Witness: Meyer

What is the cause of the slight incline in Hydros cost in 2033 in Graph 3 (p. 19)?

RESPONSE (January 24, 2014):

The primary driver in the increasing cost per MWh in Graph 3 on page JDH-19 after 2033 relates to an increase in the effective tax rate from approximately 36.4% in 2033 to just under 39% in 2034. This increase is the result of ending state flow-through benefits related to accelerated tax depreciation in 2034 (vs. 40 year straight-line book depreciation) of the initial $900 million acquisition cost in the 21st year.

PSC-043

Regarding: Review of Data
Witness: Rhoads, part a / Hines, parts b & c

a. Provide a catalogue of the "substantial amount of data including information on plant operations, maintenance, and engineering activities" (22:9-12), including in it which NWE employees or contractors were responsible for reviewing this data.

b. Please identify the employee "who helped lead the FERC relicensing process for many of the generating facilities for MPC" (23:1-2).

c. Please identify all consultants referred to at 23:7-9.

RESPONSE (January 24, 2014):

a. Please see the response to Data Request PSC-036b. NorthWestern also reviewed documents on the FERC website

b. Mary Gail Sullivan.

c. Legal: Skadden, Arps, Slate, Meagher & Flom LLP
1440 New York Avenue, N.W.
Washington, D.C. 20005-2111

Dorsey & Whitney LLP
Suite 1500, 50 South Sixth Street
Minneapolis, MN 55402-1498

Engineering: CB&I
9201 E. Dry Creek Road
Centennial, CO 80112-2818

Environmental: Same as those firms cited above.

PSC-044

Regarding: Hydros Potential for Ancillary Services
Witness: Stimatz, part a / Hines, part b

a. Are the Hydros capable of providing any ancillary services other than "spinning reserves"?

b. What type of work is associated with "developing [NWE's] resource optimization function" (JDH-27:18-19)

RESPONSE:

a. (Response provided January 17, 2014.)
The Hydros are primarily run-of-river facilities. As noted in the Prefiled Direct Testimony of John D. Hines on page 27 and the Prefiled Direct Testimony of Joseph M. Stimatz on page 12, the Hydros are able to provide spinning reserves (subject to hydrological and operating conditions). NorthWestern has not yet determined whether the Hydros are capable of providing other ancillary services, so the provision of ancillary services other than spinning reserves was not considered in the analysis.

b. (Response provided January 24, 2014.)
As stated in my testimony (JDH-27:18-19), NorthWestern will be further developing this resource optimization function. The optimization of portfolio resources has been formalized with the hiring of a manager of asset optimization. This manager position will be responsible for creating value for ratepayers through optimizing NorthWestern's fleet of assets and will be defining this work in 2014. Replacing market contracts (many of which are essentially take or pay contracts) with additional owned generation will provide greater flexibility and opportunity for value creation.

PSC-045

Regarding: PowerSimm Capabilities on Hydro and Carbon
Witness: Dorris, parts a & b / Stimatz, part c

a. Describe how PowerSimm "models the characteristics of hydroelectric generation as well as weather" (JDH-30:23-31:2)

b. Was risk of carbon pricing modeled stochastically in PowerSimm?

c. Was carbon price modeled deterministically in the DCF and LT Rev Req modeling efforts?

RESPONSE (January 24, 2014):

a. PowerSimm uses historical weather data from six weather stations in Montana (see Table 6-1 in Volume 2, Chapter 4 of the 2013 Electricity Supply Resource Procurement Plan) to construct statistical models of future temperatures. The stochastic process used to generate future weather conditions produces realized meteorological variables (e.g. temperature) for each day of the study horizon (e.g. 2014-2043), for each individual simulation iteration. This process is based on a Gaussian bivariate autoregression of the historical weather data that takes into account historical meteorological variables by day-of-year as well as autocorrelation between these variables on adjacent days. The weather simulation produced results whose validation and coincidence with historical data are shown in Figure 6-1 of Volume 2, Chapter 4 of the 2013 Plan.

To model the characteristics of hydroelectric generation, PowerSimm uses historical hydro generation data to construct a statistical model for the aggregated hydro asset that preserves three key structural components of hydro generation variability: calendar variation in output (seasonal, daily, and hourly), weather influences, and temporal autocorrelation. By modeling hydro dependent on these factors and their interactions, PowerSimm preserves the structural form of hydro generation variability in future years' hydro simulations. Through the modeled dependence on simulated weather, which also drives load, price, and wind generation, the simulation maintains the important temporal correlation of hydro generation with these other variables. PowerSimm's validated hydro outputs and their coincidence with historical data are shown in Figure 6-28 of Volume 1, Chapter 6 of the 2013 Plan. PowerSimm does contain a more complex hydro optimization module for cascading hydro generation. However, we chose a more conservative method for asset valuation that used the time series model of hydro generation rather than applying a more complex hydro optimization module to realize additional value for hydro generation.

PSC-045 cont'd

b. Yes, the risk of carbon pricing was modeled stochastically in PowerSimm, using a triangular distribution of possible prices shown in Figures 6-11 and 6-12 of Volume 1, Chapter 6 of the 2013 Plan.

c. Yes.

PSC-046

Regarding: Growth Opportunities
Witness: Masud

What specifically is meant by "opportunities for future growth" in the phrase "substantial increase in business scale provides opportunities for future growth" on Exh. 1, p. 6.

RESPONSE (January 24, 2014):

The phrase "opportunities for future growth" refers to the concept that, in general, larger business scale could better position NorthWestern in a variety of ways. With the acquisition of the Hydros, NorthWestern would be acquiring or putting in place additional operational infrastructure (generation assets, personnel and potentially increased technical and operational expertise) that could be leveraged for future acquisitions or internal development projects. With a substantial increase in business scale, resulting in a larger market capitalization, a larger asset base and increased cash flows, NorthWestern could potentially have better access to the capital markets to fund future growth.

PSC-047

Regarding: 2013 Resource Plan, Alternatives To Hydros
Witness: Fine

Please provide PowerSimm model results for the following resource portfolios and carbon cost input assumptions:

a. Portfolios:
   1. Current + 1 PW FT8 SCCT in 2020
   2. Current + 2 PW FT8 SCCT in 2020
   3. Current + 1 GE LMS 100 SCCT in 2020
   4. Current + 1 GE 7FA.04 ACC in 2020
   5. Current + 1 PW FT8 SCCT in 2020 + 100 MW wind in 2020
   6. Current + 2 PW FT8 SCCT in 2020 + 100 MW wind in 2020
   7. Current + 1 GE LMS 100 SCCT in 2020 + 100 MW wind in 2020
   8. Current + 1 GE 7FA.04 ACC in 2020 + 100 MW wind in 2020

b. Carbon cost input assumptions:
   1. Model all portfolios (including those above) with an initial carbon cost distribution mean of $15/ton and max of $30/ton starting in 2021
   2. Model all portfolios (including those above) with an initial carbon cost distribution mean of $10/ton and max of $20/ton starting in 2021
   3. Model all portfolios (including those above) with an initial carbon cost distribution mean of $15/ton and max of $30/ton starting in 2026
   4. Model all portfolios (including those above) with an initial carbon cost distribution mean of $10/ton and max of $20/ton starting in 2026
   5. Model all portfolios (including those above) without incorporating carbon emission costs

Summarize the modeling results in tables similar to Figure 6-1, p. 6-5, in Volume 1 of the 2013 Electricity Supply Resource Procurement Plan (2013 Plan). Provide detailed results similar to those included in Volume 2, Chapter 4, of the 2013 Plan.

RESPONSE (January 24, 2014):

NorthWestern is working with the Commission staff to narrow the scope of this data request. NorthWestern understands that staff's consideration is being informed by the Commission's consultant's report and that some delays have been caused by this. NorthWestern is confident that it and the staff will be able to reach an agreement on the proper scope. However, to avoid waiving any objection, NorthWestern objects to this data request because it is beyond the proper

PSC-047 cont'd

scope of data requests in that it requires NorthWestern to undertake an analysis that it did not make in evaluating the acquisition or preparing its Application and to produce documents that do not currently exist. NorthWestern further objects that this data request is unreasonable and unduly burdensome in that it will require NorthWestern to incur significant expense to respond.

PSC-048

Regarding: Carbon Pricing, 2013 Plan Capital Costs
Witness: Stimatz, part a / Fine, parts b & c

a. Please provide the supporting calculations for the monthly on-peak and off-peak carbon adders in Exhibit_(JMS-2).

b. Please provide the source for the resource cost information in Table No. 5-8, p. 5-32, in the 2013 Plan.

c. The CCCT capital and fixed O&M costs in Table No. 5-8 appear to be about 10 percent and 28 percent higher, respectively, compared to the costs in the 2011 Plan, after adjusting for inflation. The 2013 Plan notes that the modeled CCCT includes an air cooled condenser. Please explain whether that cooling equipment accounts for all of the CCCT cost increase and, if not, what other factors contributed.

RESPONSE (January 24, 2014):

a. See the file in the folder labeled "PSC-048" on the CD attached to Data Request PSC-036.

b. The resource cost information for the thermal units is a synthesis of data from equipment manufacturers, utility integrated resource plans ("IRPs") and published project information, and NorthWestern gas-fired projects (see table below). Performance metrics for the thermal units were developed specifically for units to be sited in Montana representing expected local conditions including climate and elevation above mean sea level. Cost information for the large-scale Montana hydro facility is based on information received from PPLM. Wind resource cost information is based on build-transfer bids received in NorthWestern's 2012 Community Renewable Energy Project RFP. Solar PV cost information was obtained from a northwest utility IRP.

PSC-048 cont'd

Resource Description	*Information Source*
CCCT (1x1)	ID Power 2012 Langley Gulch / Pacificorp 2013 IRP
SCCT - Small Aeroderivative	NWE 2012 Aberdeen Peaker
SCCT - Large Aeroderivative	Pacificorp 2013 IRP
SCCT - Frame	Avista 2013 IRP
Internal Combustion - Recips	Pacificorp 2013 IRP
Solar PV	ID Power 2013 IRP
Wind	NWE 2012 CREP RFP
Hydro - Montana Large Scale	NWE 2013 Hydro Acquisition

c. The 10% percent increase in CCCT capital cost is due to the assumption of an air-cooled condenser (5%) and decreased economies of scale in the 1x1 CCCT modeled in the 2013 Plan versus the general assumption of a 2x1 CCCT in the 2011 Plan (5%). The 28% percent increase in fixed O&M can be attributed in its entirety to decreased economies of scale in the 1x1 CCCT modeled in the 2013 Plan.

PSC-049

Regarding: PowerSimm
Witness: Dorris

Please provide the following information regarding the PowerSimm model and Ascend Analytics:

a. Who are the principals at Ascend Analytics and what are their backgrounds related to electric utility resource planning and cost modeling?

b. When was the PowerSimm model developed and how long has it been in commercial use?

c. What other electric utilities currently use the PowerSimm model and how do they use it?

d. To the extent possible, please describe the primary functional differences between PowerSimm and models such as PROMOD, EGEAS, MIDAS, and Strategist?

e. What are the primary limitations of the PowerSimm model with regard to estimating NorthWestern's long-term electricity supply portfolio costs?

RESPONSE (January 17, 2014):

a. **Gary Dorris, PhD – President**

Dr. Dorris has pioneered innovative solutions for energy portfolio planning, risk management, and asset valuation for over two decades. His expertise with large-scale physical and financial risk modeling has proved his company, Ascend Analytics, and its resource planning and portfolio management solution to be indispensable to over 50 energy companies throughout the US and Europe. Industry leaders have appealed to Dr. Dorris for his delivery of expert testimony regarding resource planning, risk management, energy procurement, trading practices, asset valuation, market power, rate design, and emissions trading.

He has also provided independent expert reports to support utility acquisition of rate based generation assets and the financing of merchant generation of over $5 billion in electric generating assets. Prior to founding Ascend, he served as CEO for e-Acumen, a 60-person energy consultancy and software analytics firm. Dr. Dorris holds a Ph.D. in applied economics and finance from Cornell University, a BS in mechanical engineering, and a BA in economics with Magna Cum Laude distinction, also from Cornell University.

PSC-049 cont'd

Charles Tooman – Senior Managing Director

Charles Tooman is the Senior Managing Director of Services & Consulting. He has broad experience assessing, developing, and implementing comprehensive business and risk management programs for the largest utilities and merchant energy companies in the world. Much of his work is aimed at aligning the business strategy and enterprise risk management objectives of his clients, given challenges in global energy markets. Key considerations in his work include knowledge of leading practices and standards in risk management from rating agencies, oversight organizations, and regulatory groups. Additional insight in areas that impact risk management practices as well as business strategy – including changes in a variety of regulatory standards, energy and related market factors, and credit and capital allocation considerations – also supplement his delivery capability. Specific client work has focused on enhancing risk management and strategic decision-making through the development and implementation of innovative and "fit for purpose" business processes, risk and business policies, strategic plans, and corporate governance frameworks. He is National Futures Association Series 3, Commodity Trading Advisor certified, holds a Lean Certification from the University of Cardiff, and is a member of PRMIA's Subject Matter Expert (SME) Advisory Working Group: Change Management & Strategy.

Dr. Sean Burrows, Chief Technology Officer:

Dr. Burrows has thirteen years of energy analytics experience developing technology solutions and software for energy trading and risk management. Dr. Burrows leads the application of PowerSimm. He has focused on the development of innovative techniques for optimizing energy portfolios based on both physical and financial structures. Dr. Burrows has lead commercial development and implementations projects covering a large range of activities from solving complex statistical models to managing extremely large databases. Dr. Burrows holds a Ph.D. and M.S. from University of Wisconsin and a B.S. from Cornell University.

Vena Kostroun, Senior Vice President of Development:

Mr. Kostroun has fifteen years experience in developing high-end analytic and software tools for energy trading and risk management. He has previously worked as Senior Consultant at Nexant, Inc. where he led software development of PRYM for asset valuation and physical risk management of generating assets. Prior to Nexant, he served as technical lead and manager of the AcuPower analytics team at e-Acumen, Inc. Mr. Kostroun also has experience in energy risk management and asset valuation. Mr. Kostroun is Ph.D. ABD in physics from the University of California – Berkeley and holds a BS in physics from Cornell University with Cum Laude distinction.

PSC-049 cont'd

Dr. Keith Aubin, Senior Director of Development:
Dr. Aubin has over eight years of financial and scientific research and development experience. He has been nationally recognized as a scientist and inventor. With previous experience ranging from portfolio theory to rocket science to nanobiotechnology, Dr. Aubin's main interest is in the application of advanced mathematics to complex problems. Prior to working for Ascend, Keith held a position at MIT Lincoln Laboratory as a systems and architecture analyst. He holds a M.S. and Ph.D. in Applied Physics from Cornell University and a B.S. in Physics and a B.S. in Applied Mathematics from the University of Rhode Island.

b. PowerSimm has been developed since Ascend's founding in 2002. It has been in commercial use for approximately nine years.

c. Ascend's clients include: AES, NRG Energy, American Electric Power, Tennessee Valley Authority, RWE Power, PSEG Energy Holdings, Pacific Gas & Electric Company, InterGen, Dayton Power & Light, Riverside Public Utilities, Puget Sound Energy, Tri-State Generation & Transmission, MarkWest Energy Partners, Tacoma Power, Sempra U.S. Gas & Power, Texas Power, and Tucson Electric Power. Details of the use of Ascend software by individual clients are confidential. However, Ascend's clients almost uniformly use the simulation engine and dispatch routines core to PowerSimm.

d. Based on client feedback and our own modeling experience, Ascend has developed a matrix comparing PowerSimm to competing solutions. EGEAS and Strategist are capacity expansion models that use load duration curves. The inherent limitation of load duration curve models stems from their inability to capture hourly portfolio attributes such as start-up, shut-down, unit flexibility, and ancillary services. MIDAS and PROMOD are traditional production cost models dispatching generation to load or market prices on an hourly time step. EGEAS, Strategist, MIDAS, and PROMOD all are deterministic models incapable of systematically including risk into the portfolio selection process. Because these models were architected almost 20 years ago, their computational performance is staggeringly slow relative to the performance realized in PowerSimm. Because of the similarities between a) EGEAS and Strategist as load duration curve models and b) MIDAS and PROMOD as production cost models, we have consolidated our feature comparison matrix into three columns as shown on the Attachment accompanying this response.

PSC-049 cont'd

e. PowerSimm, like any model, has limited ability to predict future conditions such as weather, hydro flows, market prices, and generation outages. PowerSimm also requires diligence and effort to produce the appropriate validation of simulations that are necessary for robust resource planning decision analysis.

PSC-050

Regarding: Transferred Employees
Witness: Kliewer

a. Identify the positions of the 80 employees who are expected to transfer from PPLM to NWE.

b. How many PPL employees who do work that is in some way related to the Hydros are not being "transferred"?

c. Provide the IBEW-PPLM collective bargaining agreement referred to at 4:21-5:2.

d. How many of the 80 transferees are covered by the collective bargaining agreement?

RESPONSE (January 24, 2014):

a. See the following table for the positions expected to transfer from PPLM to NorthWestern:

Job Title	Count
Salary Positions	34
Operator Maintenance Journeyman	24
Maintenance Man	8
Foreman Hydro Plant	6
Assistant Operator	4
Hydro System Operator	4
Subforeman - Hydro	3
Senior Relay Technician	1
	84

b. We do not know how many PPL employees are not being transferred.

c. See Attachment in the folder labeled "PSC-050" on the CD attached to Data Request PSC-036.

d. Fifty.

PSC-051

Regarding: Plant Investments by PPLM
Witness: Kliewer

Provide what PPLM furnished NWE, described as a record of "additional plant cost activity" at 6:11-13.

RESPONSE (January 24, 2014):

The information PPLM furnished NorthWestern is included in the Attachment to this request. See the folder labeled "PSC-051" on the CD attached to Data Request PSC-036.

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 2 (036-058)

Data Requests served January 2, 2014

PSC-052

Regarding: Original Cost
Witness: Kliewer

Provide those "retained files from the 1999 sale of the generation facilities to PPLM" that justify NWE's calculation of original cost, referred to at 6:6-7.

RESPONSE (January 24, 2014):

Please see the folder titled "Kendall Kliewer" on the Witnesses' Electronic Supporting Data CD that was provided on December 23, 2013.

PSC-053

Regarding: Intangible Plant Cost
Witness: Kliewer

Please describe how the value of intangible plant cost of $63,853,971 was arrived at.

RESPONSE (January 24, 2014):

The following table represents the actual costs capitalized by The Montana Power Company associated with the Kerr hydro facility.

INTANGIBLE PLANT	Plant Balance 12/17/1999
Kerr License	$1,259,702.14
Kerr Wildlife	3,027,355.49
Kerr Mitigation	59,566,913.15
Total	$63,853,970.78

PSC-054

Regarding: Kerr Valuation
Witness: Kliewer

You refer to $30 million as a "reference price somewhere in the middle of the range of possible outcomes of the [valuation] dispute" regarding Kerr at 8:9-11 of your testimony. Yet your calculation suggests the original cost at 2013 of Kerr is significantly higher, nearly $120 million. Please explain this disparity and describe why the two numbers do not show more convergence.

RESPONSE (January 24, 2014):

The $30 million figure is simply the reference price. See the Prefiled Direct Testimony of Joseph M. Stimatz on pages JMS-16 through JMS-18 for additional information.

PSC-055

Regarding: Depreciation
Witness: Kliewer

a. Did NWE consider establishing different depreciation life-spans for different plants (e.g., the Rainbow Unit 9, recently constructed, may have a longer remaining life than a plant that has not experienced upgrades)?

b. What did NWE do to evaluate comparable Hydro owners' depreciation lifespans?

c. Provide the MPC 1995 Depreciation Study referred to at 9:17-18.

d. What would levelized cost of the Hydros be if the plant was depreciated (with the same residual terminal value) over 30 years (i.e., using a 3.33% accrual factor)?

e. What would be the first-year bill impact in the scenario described in (d)?

RESPONSE (January 24, 2014):

a. No.

b. NorthWestern did not evaluate comparable hydro facilities in the determination.

c. See Volumes 1 through 5 in the folder labeled "PSC-055" on the CD attached to Data Request PSC-036.

d. NorthWestern objects to this data request because it is beyond the proper scope of data requests in that it requires NorthWestern to undertake an analysis that it did not make in evaluating the acquisition or preparing its Application and to produce a document that does not currently exist.

e. See the response to part d, above.

PSC-056

Regarding: Production Tax Credit Eligibility
Witness: Kliewer

a. Why does Rainbow, given its recent upgrade, not qualify for PTC status?

b. Describe the upgrades to Kerr, Cochrane, Ryan & Mystic Lake dams that cause these facilities to be eligible for PTC status.

RESPONSE (January 24, 2014):

a. The new Rainbow facility is a qualified hydropower facility that was certified by FERC as producing incremental hydropower production described in IRC section 45(c)(8)(B) and would be eligible for production tax credits (PTCs). However, in 2009, PPLM elected to receive Investment Tax Credits (ITCs) in lieu of production tax credits with respect to the Rainbow facility. Taxpayers who elect to receive ITCs in lieu of production tax credits are not eligible for the PTCs at the same facility.

b. Production Tax Credit status is available for investments that provide incremental hydropower generation that meets efficiency improvement standards as certified by the Federal Energy Regulatory Commission ("FERC"). Please see Attachments 1 through 4, the respective FERC orders issued to PPLM for Kerr, Cochrane, Ryan, and Mystic Lake:

1. Kerr – Project No. 5-083 – Issued December 11, 2007.

2. Cochrane – Project No. 2188-187 – Issued January 27, 2010.

3. Ryan – Project No. 2188-208 – Issued April 11, 2013.

4. Mystic Lake – Project No. 2301-029 – Issued June 2, 2010.

121 FERC ¶ 62,177
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PPL Montana, LLC Project No. 5-083

ORDER CERTIFYING INCREMENTAL HYDROPOWER GENERATION FOR PRODUCTION TAX CREDIT

(Issued December 11, 2007)

On September 10, 2007, PPL Montana, LLC, licensee for the Kerr Hydroelectric Project, FERC No. 5, filed a request for certification for a renewable energy production tax credit for efficiency improvements due to the addition of capacity that started on-line on March 27, 2007. The licensee made the filing pursuant to Internal Revenue Service Code Section 45.[1] The project is located on the Flathead River in Flathead Lake County, Montana.

Section 1301 of the Energy Policy Act of 2005 (EPAct)[2] amended section 45 to apply the tax credit to incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed in service after August 8, 2005, and before January 1, 2009. Under EPAct section 1301(c), the Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service during that time period. Based on the above, we are issuing this certification order.

The Director orders:

(A) Based on our review of the information provided by the licensee, we certify the following:

Type of Improvement	Improved Efficiency due to Additional Installed Capacity
Historical Generation Baseline (kWh)	1,071,720,000
Generation with Improvements (kWh)	1,107,239,000
Incremental Generation (kWh)	35,519,000
Percentage of Generation Due to	3.31%

[1] I.R.C. § 45 (2000)

[2] Pub. L. No. 109-58, 119 Stat. 594, (2005), and Pub. L. No. 109-432, Title II, §201, (2006).

Improvements (%)	

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

Mohamad Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

UNITED STATES OF AMERICA 130 FERC ¶ 62,095
FEDERAL ENERGY REGULATORY COMMISSION

PPL-Montana, LLC Project No. 2188-187

ORDER CERTIFYING INCREMENTAL HYDROPOWER GENERATION FOR PRODUCTION TAX CREDIT

(Issued January 27, 2010)

1. On November 25, 2009, PPL-Montana, licensee for the Missouri-Madison Hydroelectric Project, FERC No. 2188, filed a request for certification for a renewable energy production tax credit for efficiency improvement. The improvement was from upgrade of Unit #1 generator at the Cochrane Hydroelectric Development. The Cochrane Development is one of the nine developments of the Missouri-Madison Project. The upgrade and improvement of the unit was placed into service on January 7, 2008. The licensee made the filing pursuant to Internal Revenue Code section 45.[1] The project is located along the Missouri and Madison Rivers in Gallatin, Madison, Lewis and Clark, and Cascade Counties, Montana.

2. Section 1301 of the Energy Policy Act of 2005 (EPAct)[2] amended section 45 to apply the tax credit to incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed into service after August 8, 2005, and before January 1, 2014. Under EPAct section 1301(c), the Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service during that time period. Based on the above, we are issuing this certification order.

The Director orders:

(A) Based on our review of the information provided by the licensee, we certify the following:

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[1] I.R.C. § 45 (2000).

[2] Pub. L. No. 109-58 § 1301, 119 Stat. 594, (2005), Pub. L. No. 109-432 Title II, § 201, 120 Stat. 2922, (2006), Pub. L. No. 110-343, Div B, Title I, (2008), and Pub. L. No. 111-5, Div B, Title I, §1101, (2009).

Type of Improvement	Efficiency Improvement due to Unit Upgrade
Date of Operation	January 7, 2008
Historical Generation Baseline (MWh)	358,390
Incremental Generation (MWh)	1,580
Percentage of Generation due to Improvements (%)	0.44

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

M. Joseph Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

cc : File
FERC Ease
e-mail: GDC/JHJ/JCC/CAH

143 FERC ¶ 62,029
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PPL Montana	Project No.	2188-208

ORDER CERTIFYING INCREMENTAL HYDROPOWER GENERATION FOR PRODUCTION TAX CREDIT

(Issued April 11, 2013)

1. On January 24, and supplemented on February 7, 2013, PPL Montana, licensee for the Ryan Hydroelectric Project, FERC No. 2188, filed a request for certification for a renewable energy production tax credit for efficiency improvements. The improvements are due to the authorized turbine upgrades of units 2, 4, and 5, which would result in an increase in efficiency and 3 MW in capacity at the Ryan Development of the Missouri-Madison Project. The licensee's expected in-service date is September 1, 2013. The licensee made the filing pursuant to Internal Revenue Code section 45.[1] The project is located along the Missouri and Madison Rivers in Gallatin, Madison, Lewis and Clark, and Cascade Counties, Montana.

2. Section 1301 of the Energy Policy Act of 2005 (EPAct)[2] amended section 45 to apply the tax credit to incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed into service after August 8, 2005, and before January 1, 2014.[3] Under EPAct section 1301(c), the Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service during that time

[1] I.R.C. § 45 (2000).

[2] Pub. L. No. 109-58 § 1301, 119 Stat. 594, (2005), Pub. L. No. 109-432 Title II, § 201, 120 Stat. 2922, (2006), Pub. L. No. 110-343, Div B, Title I, (2008), and Pub. L. No. 111-5, Div B, Title I, §1101, (2009), and H.R.8 "American Taxpayer Relief Act of 2012", Title IV, § 407, (2013).

[3] Section 407 (a)(3)(E) of H.R.8 "American Taxpayer Relief Act of 2012", amended IRC § 45 (d), paragraph (9), such that an efficiency improvement or addition to capacity shall be treated as placed in service before January 1, 2014, if the construction of such improvement or addition begins before such date.

period. Based on the above, we are issuing this certification order.

The Director orders:

(A) Based on our review of the information provided by the licensee, we certify the following:

Type of Improvement[4]	Increase in Capacity and Efficiency
Date of Operation	September 1, 2013
Historical Generation Baseline (kWh)	437,480,100
Generation with the Improvements (kWh)	463,731,300
Incremental Generation (kWh)	26,251,200
Percentage of Generation due to Improvements (%)	6.00

(B) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2011). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

M. Joseph Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

[4] Information in this table pertains only to the Ryan Development.

UNITED STATES OF AMERICA 131 FERC ¶ 62,205
FEDERAL ENERGY REGULATORY COMMISSION

PPL Montana, LLC Project No. 2301-029

ORDER CERTIFYING INCREMENTAL HYDROPOWER GENERATION FOR PRODUCTION TAX CREDIT

(Issued June 2, 2010)

1. On January 27, 2010, PPL Montana, LLC, licensee for the Mystic Lake Project, FERC No. 2301, filed a request for certification for a renewable energy production tax credit
for additional capacity and efficiency improvements. The improvements were from replacing the two original 1920's Pelton Water wheels with two identical used 1970's Pelton Water wheels. These replaced units were placed into service for Unit 1 on April 20, 2007 and Unit 2 on March 28, 2008. The licensee made the filing pursuant to Internal Revenue Code section 45 [1] for the two units which are identical in output. The project is located on the West Rosebud Creek in Stillwater and Carbon Counties, Montana.

2. Section 1301 of the Energy Policy Act of 2005 (EPAct)[2] amended section 45 to apply the tax credit to incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed into service after August 8, 2005, and before January 1, 2014. Under EPAct section 1301(c), the Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service during that time period. Based on the above, we are issuing this certification order.

The Director orders:

(A) Based on our review of the information provided by the licensee, we certify the following:

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[1] I.R.C. § 45 (2000).

[2] Pub. L. No. 109-58 § 1301, 119 Stat. 594, (2005), Pub. L. No. 109-432 Title II, § 201, 120 Stat. 2922, (2006), Pub. L. No. 110-343, Div B, Title I, (2008), and Pub. L. No. 111-5, Div B, Title I, §1101, (2009).

Improvement	Unit 1	Unit 2	Total
Date of Operation	04/20/2007	3/28/2008	
Historical Generation Baseline (kWh)			56,770,000
Generation with Improvements (kWh)			63,212,000
Incremental Generation (kWh)	3,221,000	3,221,000	6,442,000
Percentage of Generation due to Improvements (%)	5.67	5.67	11.34

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

M. Joseph Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

PSC-057

Regarding: Capital Structure
Witness: Bird

On page 16 of your testimony, you state that NWE worried that it would be outbid by an equity or infrastructure fund that carries a higher amount of debt to equity in its capital structure, causing a lower required return. Why could NWE, in a transaction of this magnitude, not be expected to finance a greater share of the acquisition through debt, rather than equity, thereby reducing the overall cost to ratepayers?

RESPONSE (January 24, 2014):

NorthWestern will be financing a slightly greater share of the acquisition through debt than equity (52% debt). However, we will not finance it with the same debt percentage as a financial buyer may carry because we do not want to harm the credit worthiness of NorthWestern. Another utility would likely maintain the same general debt to total capital ratio that we are recommending in this case. Financial buyers look for larger returns and are less concerned with credit ratings, so tend to apply more debt to their investments than we, or another utility, are comfortable carrying.

Something more important to consider is how much debt does NorthWestern use to finance our business (including this acquisition) versus other utilities. The summary attached, which is based upon information gathered from SNL, shows that over the last two years the debt percentage that NorthWestern was allowed (52%) was higher than the average/median allowed by the industry, which was around or slightly less than 50% respectively. Therefore, we are already carrying a higher level of debt than our peers to keep our overall capital costs low.

NorthWestern and the MPSC have worked hard to bring up the credit ratings of NorthWestern over the last 10 years and have achieved an acceptable level of credit worthiness that has provided low debt costs for our customers. Particularly with a bankruptcy in our history, it is hard to fathom why we would want to risk lowering our credit ratings by increasing our debt percentage now, particularly when it is already higher than other utilities. The debt percentage we are proposing here is in line with debt levels we have used in the past and we believe will support our existing credit ratings.

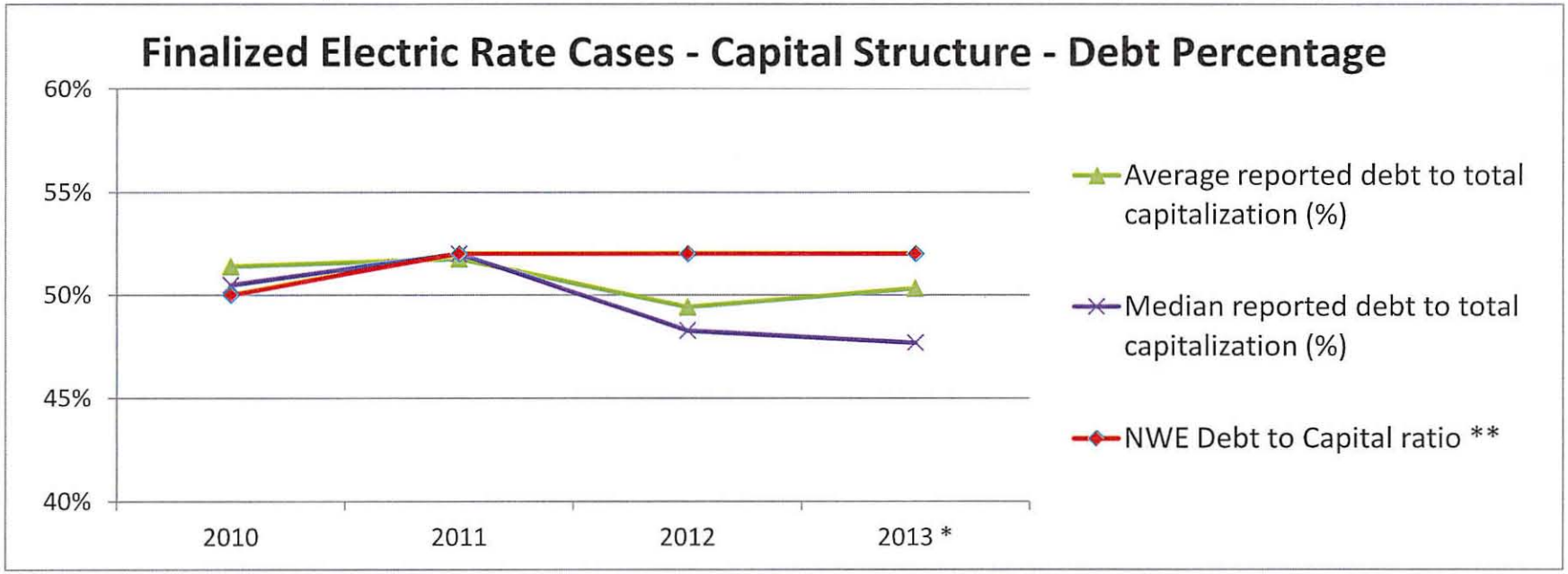
NorthWestern Energy
Authorized/Final Order Rate Cases 2010-2013
Capital Structure - Percentage of Debt

Finalized Electric Rate Cases - Capital Structure

	2010	2011	2012	2013 *
Number of Rate Cases Finalized	78	57	71	41
Number of rate cases reporting Capital Structure	57	42	52	29
Average reported debt to total capitalization (%)	51.37%	51.74%	49.41%	50.32%
Median reported debt to total capitalization (%)	50.48%	52.00%	48.29%	47.70%
NWE Debt to Capital ratio **	50.00%	52.00%	52.00%	52.00%

* 2013 data is reported thru 10/31/2013

** Authorized NWE Debt to Cap Ratio: Colstrip in 2009 at 50%, DGGS & MT Elec Delivery in 2011 at 52%, Spion Kop in 2012 at 52% & Hydro in 2013 at 52%



All data provided from SNL database as of 10/31/2013

PSC-058

Regarding: Future Cost of Service
Witness: DiFronzo

When you say that "all other changes in the cost of service for the Hydros would be included in future revenue requirement filings," (16:1-2) do you mean General Rate Cases?

RESPONSE (January 24, 2014):

Yes.