



May 16, 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 13 Data Requests (269-304)

Dear Ms. Whitney:

Enclosed for filing is a copy of NorthWestern Energy's responses to PSC Set 13 Data Requests (269-304). 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 Request 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
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 13 Data Requests (269-304) 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. These Data Request responses 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 and will also be emailed to counsel of record.

Date: May 16, 2014



Nedra Chase
Administrative Assistant
Regulatory Affairs

**Docket No D2013.12.85
Hydro Assets Purchase
Service List**

Joe Schwartzenger
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 32812

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

Roger Kirk/Ben Singer
Hydrodynamics Inc
825 W Rocky Creek Rd
Bozeman MT 59715-8693

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

Fred Szufnarowski
Essex Partnership, LLC
65 Main St. Suite 22
Ivoryton, CT 06442

Monica Tranel
Tranel Law Firm PC
30 W. 14th Street Suite 204
Helena MT 59601

NorthWestern Energy
Docket D2013.12.85
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Public Service Commission (PSC)
Set 13 (269-304)

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PSC-269

Regarding: Flashboard/Stanchion Systems
Witness: Wiseman

- a. How many of the hydro facilities still use flashboard/stanchion systems as opposed to gates or rubber dams?
- b. Please provide a list of flashboard maintenance and repairs that were performed within the last 10 years. For each repair indicate the reservoir level and the normal reservoir operating level.

RESPONSE:

- a. Eight hydro facilities use flashboard/stanchion systems. They are listed below.

Development	Spillway water flow control devices
Black Eagle	8 sluice gates, and also flashboards
Hauser	5 bays with vertical lift gates, and also flashboards
Holter	10 vertical lift gates, and also flashboards
Madison	Trippable slide panels (flashboards)
Mystic	Crest stoplogs (height = 3.5 ft)
Rainbow	5 sluice gates, 2 rubber dam gates, and also flashboards
Ryan	6 sluice gates and 1 butterfly valve on low-level outlets, 1 vertical lift trash gate, and also flashboards
Thompson Falls	2 radial gates, and also vertical panel flashboards

Flashboards are used in effective spillway control arrangements combined with gates. Madison and Mystic are specifically discussed below. The use and operation of flashboards in the hydro system is adequate and appropriate. Any concern about the use of flashboards is not as significant as implied or characterized by Essex.

As stated in previous Additional Issues Testimony in response to Essex's checklist provided on March 31, 2014 ("Checklist") and a memorandum provided on April 2, 2014: "Flashboard systems are an effective means to maintain normal operational reservoir water level and still have the capability for high discharge flows in the event of low probability extreme flooding. Flashboard/stanchion systems should be evaluated in the context of the plant physical layout and the overall equipment and means available to control water flow releases, not in isolation." Six of the above developments have gates in addition to flashboards. The gates provide discharge capability and operational

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PSC-269 cont'd

flexibility. For Mystic, the stoplogs are actually not flashboards. The stoplogs do not need to be removed or tripped since the dam structure is designed to be stable for the condition of overtopping with the stoplogs in place. For Madison, the vertical slide panels have rollers for ease of movement or removal. Six of the 6-foot-wide panels are hydraulically driven with screw actuators. This operator arrangement allows for ready and flexible movement of these panels to provide gate-type water discharge control.

b. See Attachment.

FLASHBOARD MAINTENANCE (Refer to Data Request PSC-269b)
FLASHBOARD TRIP EVENTS (Refer to Data Request PSC-270)

Flashboard Maintenance

- Mystic - The far right set of 4 stoplogs were replaced as recommended in the 2008 Part 12 inspection.
- Hauser - All boards and stanchions were replaced from 2005 to 2009; normal operating reservoir was maintained with use of bulkhead.
- Madison – N/A.
- Thompson Falls, Main Dam - 130 of 272 boards with corresponding stanchions were replaced in 2011; level for replacement 2383 / operating level 2397. Dry Channel Dam - All boards and stanchions were replaced in 2011; level for replacement 2386.0 / operating level 2397. The addition of Unit 7 and its significantly greater hydraulic capacity has resulted in significantly reduced flashboard operations.
- Holter - All bays were re-worked as part of the stanchion job last year, any damaged boards or suspect boards were replaced, roughly 10%. Prior to that, the boards were all replaced down to crest in 2000.
 - Crest Elevation = 3548, Normal Operation Level = 3564 (= 16' pond)
- Black Eagle – The top 3-5 bays are pulled to manage water as dictated by high flows. These boards are placed back in after they are pulled, any damaged boards are replaced at that time. Prior to this activity the boards were all replaced down to crest in 1999.
 - Crest Elevation = 3279, Normal Operation Level = 3291 (= 12' pond)
- Rainbow – The commissioning of the new Powerhouse and Unit 9 adds significant hydraulic capacity and operational flexibility. This coupled with the installation of the rubber dam now means that the boards will rarely be pulled. The boards were all replaced down to crest in 2004.
 - Crest Elevation = 3212, Normal Operation Level = 3224 (= 12' pond)
- Ryan – The top 3-5 bays are pulled to manage water as dictated by high flows. These boards are placed back in after they are pulled, any damaged boards are replaced at that time. Prior to this activity the boards were all replaced down to crest in 1999.
 - Crest Elevation = 3023, Normal Operation Level = 3035 (= 12' pond)

Flashboard Trip Events

- Mystic – N/A, the stoplogs (height = 3.5 ft) are not trippable.

- Hauser – No trip events.
- Madison – N/A.
- Thompson Falls, Main Dam - 7 of 34 bays were tripped because of high water flows in June 2011. Dry Channel Dam – No trip events; the installation of unit 7 and the Main Dam flashboards have provided sufficient discharge capacity.
- Holter – Stanchions have not been tripped. Mock trip of one bay was conducted in 2012 behind bulkhead under full head conditions to protect reservoir. All stanchions were rebuilt in 2013 with new design. **Spill capacity before needing to trip flashboard stanchions is approximately 41,400 cfs, no recorded flows over this amount.**
- Black Eagle – Confirmed trip of 2-4 bays in the spring of 1975, and 1981. Tripping of bays in the spring of 1953 and 1964 is supported by the Great Falls annual peak discharge table below.
- Rainbow – Confirmed trip of 2-4 bays in the spring of 1975, and 1981. Tripping of bays in the spring of 1953 and 1964 is supported by the Great Falls annual peak discharge table below.
- Ryan – Confirmed trip of 2-4 bays in the spring of 1975, and 1981. Tripping of bays in the spring of 1953 and 1964 is supported by the Great Falls annual peak discharge table below.

Recorded Annual Peak Discharge:

06090300 Missouri River near Great Falls, MT

Location.-- lat 47° 34'04", Long 111° 50'30", Hydrologic Unit 10080100.
 Drainage area.-- 21782.0 square miles.
 Datum of gage.-- 1307.1 ft above sea level.

Table of annual peak discharge data [---, no data]

Water year	Date	Gage height (ft)	Discharge (cfs)		Date of Max. gage height	Maximum gage height (ft)
1940	May 4, 1940	4.13	2230	70	---	---
1941	June 4, 1941	---	66000	70	---	---
1944	June 5, 1944	4.88	1480	71	---	---
1955	June 27, 1955	4.81	1750	75	---	---
1956	May 28, 1956	3.61	101	73	---	---
1957	June 11, 1957	---	18700	75	---	---
1958	June 14, 1958	---	19700	75	---	---
1959	June 19, 1959	---	24000	75	---	---
1960	May 16, 1960	---	16100	75	---	---
1961	Feb. 3, 1961	---	6230	73	---	---
1962	June 29, 1962	---	21100	75	---	---
1963	June 9, 1963	---	29000	75	---	---
1964	June 10, 1964	---	32000	75	---	---
1965	June 19, 1965	---	24800	75	---	---
1966	Oct. 4, 1966	---	33000	75	---	---
1967	June 19, 1967	---	33100	75	---	---
1968	June 12, 1968	---	19700	75	---	---
1969	June 29, 1969	---	23900	75	---	---
1970	June 18, 1970	---	24500	75	---	---
1971	May 14, 1971	---	26400	75	---	---
1972	June 4, 1972	---	22000	75	---	---

1973	Oct. 22, 1973	--		6860	/5	--	--
1974	June 22, 1974	--		28400	/11	--	--
1975	June 21, 1975	--		45700	/25	--	--
1976	May 26, 1976	--		21000	/11	--	--
1977	Oct. 18, 1976	--		8800	/11	--	--
1978	May 20, 1978	0.28		23700	/3	--	--
1979	May 26, 1979	6.99		12000	/5	--	--
1980	June 17, 1980	7.61		19300	/2	--	--
1981	May 24, 1981	6.52		12700	/3	--	--
1982	June 30, 1982	7.78		79700	/3	--	--
1983	July 21, 1983	7.19		22100	/3	--	--
1984	June 24, 1984	7.72		27400	/3	--	--
1985	Mar. 19, 1985	6.51		13200	/3	--	--
1986	Feb. 20, 1986	7.01		21300	/3	--	--
1987	Jan. 22, 1987	6.01		23500	/3	--	--
1988	June 10, 1988	6.14		8910	/5	--	--
1989	May 11, 1989	4.98		19000	/3	--	--
1990	May 31, 1990	5.07		15400	/3	--	--
1991	June 13, 1991	6.42		21200	/3	--	--
1992	Jan. 13, 1992	6.17		8800	/3	--	--
1993	June 18, 1993	6.12		19400	/5	--	--
1994	Apr. 24, 1994	5.33		12100	/3	--	--
1995	June 6, 1995	6.43		21600	/3	--	--
1996	June 15, 1996	7.23		30200	/3	--	--
1997	June 15, 1997	--		34500	/12	--	--
1998	July 1, 1998	6.51		24900	/5	--	--

Recorded Annual Peak Discharge:

06066500 Missouri River bl Holter Dam near Wolf Cr, MT

Location.-- Lat 46 54'41", Long 112 65'37", Hydrologic Unit 10040102.
 Drainage Area.-- 17149.0 square miles.
 Elevation of gage.-- 3464.1 ft above sea level.

Table of annual peak discharge data (---, no data)

Water year	Date	Gage height (ft)	Discharge (cfs)	Date of Max. gage height	Maximum gage height (ft)
1946	June 5, 1946	6.82	16000	---	---
1947	June 10, 1947	9.75	27200	---	---
1948	June 8, 1948	11.10	34800	---	---
1949	June 6, 1949	7.80	19600	---	---
1950	June 21, 1950	7.82	18700	---	---
1951	May 28, 1951	8.43	22000	---	---
1952	June 9, 1952	8.50	23000	---	---
1953	June 19, 1953	6.27	22500	---	---
1954	Jan. 2, 1954	---	5500	---	---
1955	July 18, 1955	---	6700	---	---
1956	June 2, 1956	3.48	25500	---	---
1957	June 8, 1957	7.12	27000	---	---
1958	July 7, 1958	4.95	9400	---	---
1959	June 17, 1959	7.90	19200	---	---
1960	Dec. 13, 1959	6.61	14900	---	---
1961	Feb. 16, 1961	4.12	7760	---	---
1962	June 18, 1962	6.70	15000	---	---
1963	June 21, 1963	7.21	16700	---	---
1964	June 19, 1964	10.04	37300	---	---
1965	June 10, 1965	7.62	18300	---	---
1966	Oct. 8, 1965	8.57	21500	---	---

1967	June 26, 1967	5.17	20300	_/5	--	--
1968	June 21, 1968	5.80	11200	_/5	--	--
1969	June 29, 1969	7.51	18100	_/5	--	--
1970	June 19, 1970	7.26	15500	_/5	--	--
1971	July 1, 1971	7.28	17000	_/5	--	--
1972	June 27, 1972	6.40	10200	_/5	--	--
1973	July 14, 1973	4.21 _{-/2}	7170	_/5	Oct. 19, 1973	4.17 _{-/1}
1974	June 20, 1974	4.81	18600	_/5	--	--
1975	July 8, 1975	6.12	25000	_/5	--	--
1976	June 23, 1976	7.85	17930	_/5	--	--
1977	Oct. 10, 1976	4.26	7010	_/5	--	--
1978	July 3, 1978	6.71	12700	_/5	--	--
1979	May 29, 1979	4.17	7620	_/5	--	--
1980	June 16, 1980	7.69	18300	_/5	--	--
1981	June 22, 1981	9.16	22100	_/5	--	--
1982	July 3, 1982	8.02	21100	_/5	--	--
1983	June 12, 1983	6.54	14460	_/5	--	--
1984	June 26, 1984	8.72	22300	_/5	--	--
1985	Oct. 1, 1984	6.27	9820	_/5	--	--
1986	June 7, 1986	6.70	13700	_/5	--	--
1987	Jan. 16, 1987	4.75 _{-/2}	6240	_/5	Nov. 10, 1986	3.90 _{-/1}
1988	Dec. 18, 1987	3.10	3090	_/5	--	--
1989	Feb. 3, 1989	3.50	6051	_/5	--	--
1990	Feb. 10, 1990	3.58	6360	_/5	--	--
1991	June 11, 1991	6.97	15400	_/5	--	--
1992	Jan. 29, 1992	3.05 _{-/2}	4940	_/5	Oct. 6, 1991	3.11 _{-/1}
1993	June 20, 1993	6.87	15800	_/5	--	--
1994	Oct. 13, 1993	4.71	6380	_/5	--	--
1995	June 19, 1995	7.04	16200	_/5	--	--
1996	June 13, 1996	8.47	23000	_/5	--	--
1997	June 14, 1997	9.35	23500	_/5	--	--
1998	July 6, 1998	8.17	19500	_/5	--	--

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**Public Service Commission (PSC)
Set 13 (269-304)**

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PSC-270

Regarding: Flashboard Performance in Extreme Events
Witness: Wiseman

The witness states that flashboards “are actually tripped and used only on the very infrequent occurrence of high flood flows ...” and “... are available and functional when needed in an extreme event” (GTW-7). For each PPL hydro facility with a flashboard system, please provide examples of extreme events, along with dates and river flows for all events where the flashboards were tripped.

RESPONSE:

See the Attachment provided in response to Data Request PSC-269b.

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PSC-271

**Regarding: Flashboard Maintenance with Bulkhead
Witness: Wiseman**

The witness states that “[a]n available bulkhead allows maintenance or repairs without reservoir lowering” (GTW-8). Please describe how maintenance or repairs can be executed without the lowering of reservoir or headpond levels.

RESPONSE:

The bulkhead is a portable steel structure with sides and bottom and upstream vertical surface which can be placed on the upstream face of the dam. When the space between the portable bulkhead and spillway structure is dewatered by pumping, the sides and bottom of the bulkhead seal on the face of the dam. This creates a work space volume to access flashboards or gates for maintenance or repairs or replacement, while normal water level can be maintained in the reservoir.

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PSC-272

Regarding: Anchor Relaxation
Witness: Wiseman

- a. Please identify the specific hydro facilities that have rock anchors.
- b. The witness states that “[r]elaxation of anchors and the resulting potential for reduced effectiveness of anchors is an item recognized in the industry” (GTW-11). Do professional standards or institutional recommendations exist for how the relaxation of anchors is measured, monitored, documented, and ameliorated? If so, please provide relevant references.
- c. The witness states that “... routine and frequent surveillance and monitoring of a structure includes vertical and horizontal alignment surveys, monitoring piezometers for foundation pressure, monitoring drain flows for foundation conditions, and regular and documented visual surveillance of the structure This monitoring and assessment is a full and formal process performed to Federal Energy Regulatory Commission (“FERC”) requirements and reviewed by FERC.” Has PPLM maintained a monitoring and assessment program as described above for each of its hydro facilities?
- d. If the response to part (b), above, is yes, please provide a detailed description of the procedure, its frequency, and how results are recorded and acted upon.

RESPONSE:

- a. Eight hydro facilities have post-tensioned rock anchors. They are listed below.

Development	Component with rock anchors
Black Eagle	Wastegate structure
Hauser	Spillway
Holter	Left non-overflow structure
Kerr	Right non-overflow structure
Madison	Spillway and right abutment section
Mystic	Left thrust block
Ryan	Right non-overflow, wastegate, and intake structures
Thompson Falls	Main dam and dry channel dam spillways

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PSC-272 cont'd

- b. No. Refer to the response to Data Request PSC-273.
- c. Yes. This program is the Dam Safety Surveillance and Monitoring Reports (DSSMR). Each year the owner evaluates and documents the findings from ongoing monitoring and measurement of structures in DSSMR's for each of the hydro developments. Each DSSMR is submitted to the FERC for review. This monitoring, assessment, and reporting is conducted under the Dam Safety Surveillance and Monitoring Plan (DSSMP) established for each hydro plant. The DSSMP's conform to FERC Guidelines, Chapter 14, Appendix J.
- d. Refer to response to Data Request PSC-273.

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PSC-273

Regarding: Anchor Assessment and Re-Analysis
Witness: Miller

Please explain what standards, institutional recommendations, or industry practices are used to determine when post tensioning relaxation becomes an issue that must be addressed.

RESPONSE:

HDR's experience indicates there is little industry consensus regarding when post-tensioning relaxation has become an issue that must be addressed, unless there is evidence of creep-susceptible or compressible soil or rock, or if unusual movements of project structures are observed. The decision to monitor anchor load must be made prior to anchor installation, since it requires specific details (re-stressable anchor heads) or equipment (embedded load cells). As anchored structures age, their condition and function will become an area of greater interest and concern, more from the perspective of corrosion and failure than loss of pre-stress. To date, there has been much discussion regarding future regulatory or industry requirements regarding verification of anchor functionality, but no industry-wide requirements, recommendations or guidance.

The following industry standards are relevant with respect to post-tensioned anchor relaxation with respect to dams.

1. Recommendations for Pre-Stressed Rock and Soil Anchors, Post Tensioning Institute, 2004, (PTI, 2004) is recognized as an industry standard for the design, installation and monitoring of rock anchors. PTI, 2004 provides generic guidance for long term monitoring of anchor loads. The need for and frequency of monitoring needs to be established at the design stage. PTI, 2004 suggests that 3 to 10%, or more, of the anchors on a project be monitored. There is no specific guidance of when monitoring is needed or required.
2. Federal Energy Regulatory Commission Guidelines (FERC) suggest that anchor loads should be monitored wherever possible when anchorage is being relied upon to satisfy stability criteria. The primary means of monitoring include re-stressable anchorages and permanent load cells, both of which must be installed during construction. The FERC has not consistently requested that long-term monitoring capability be provided, as noted below.

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PSC-273 cont'd

3. In practice, the need for long-term monitoring is typically identified during one of the following phases of a project:
- **Design Phase - Geotechnical Program** – If creep or settlement sensitive rock or soil, or aggressive ground or groundwater conditions are identified during the geotechnical investigation, recommendations for long-term monitoring may be presented.
 - **Design Phase - FERC design review** – The FERC has required that re-stressable anchor heads or load cells be installed to monitor long-term performance of selected anchors at certain projects. This was a relatively common requirement in the 1990s, though FERC has not required this on more recent projects. FERC has noted that the anchor head is typically the most vulnerable part of an anchor with respect to corrosion, and leaving the heads accessible for periodic testing heightens the risk of corrosion. There have been long-term performance issues with load cells, and there is no practical means of replacing or recalibrating them.
 - **Potential Failure Mode Analysis (PFMA)** – The vulnerability of anchors should be assessed as part of the PFMA process for anchors. The FERC notes that failure modes for structures that require maintenance actions to verify that anchors are maintaining prestress should be highlighted as failure modes of greatest significance, although they do not specifically address anchored structures without monitoring capability.
 - **Part 12 inspection process** – The Part 12 inspector may have concerns regarding long-term anchor performance based on his or her experience with site conditions, products, contractors, age, or other factors.
 - **Dam Safety Surveillance Monitoring Program (DSSMP)** – The DSSMP may include requirements for monitoring anchor load, or movement or the condition of concrete around anchors, which could lead to an investigation of anchor performance. Since most anchors used for dam stabilization have relatively long free-stressing lengths, are pre-stressed during installation, and typically include a design margin of safety in accordance with Post Tensioning Institute guidelines, they can normally accommodate significant creep and still maintain a considerable part of the design load. Loss of prestress in anchors resulting in detectable movement would be considered unusual.

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PSC-273 cont'd

- **Post Failure Investigation – In the event that an anchor failure occurs, additional investigations may be required. The majority of the anchor failures that HDR is aware of have occurred in radial gate trunnion anchorages and do not affect overall gravity dam stability.**

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PSC-274

Regarding: Remediation Plans
Witness: Miller

The witness stated that his review of dam safety documents included “remediation plans completed, currently underway and required to be implemented up through 2017” (RM-7). Please provide for each project information on the remediation plans referred to. If this information has already been provided, please cite the document or specific data request.

RESPONSE:

HDR reviewed the Part 12 FERC Independent Engineer reports that were summarized in the Due Diligence reports by Shaw/CB&I. See Exhibit__(WTR-5) attached to the Rhoads Direct Testimony. This protected exhibit was provided on CD to the Commission and parties who signed the appropriate non-disclosure agreement pursuant to Protective Order No. 7323.

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PSC-275

Regarding: Equipment Maintenance Strategy
Witness: Rhoads

- a. Is the “more aggressive maintenance strategy for individual equipment classes” (WTR-12) the same as the procedures contained in PSC-109(e), Attachments 1-9?
- b. Some of the maintenance strategies contained in PSC-109(e), Attachments 1-9, are either drafts or were issued in recent years. Are the procedures described therein new, or do they formalize the maintenance that has been historically performed on the equipment?
- c. Are records of tests and inspections of major overhauls, minor overhauls, and routine inspections kept? Is so, were they examined as part of the due diligence to determine the material condition of the apparatus?

RESPONSE:

- a. Yes.
- b. The strategies capture and document maintenance strategies that had been in use and instances where improvements can be made to historical maintenance practices (and thus more “aggressive”). The documentation provides a consistent maintenance program that can be applied across the entire hydro system. There is also a move toward documentation of condition-based monitoring where the focus is not on a “time-based” maintenance approach but one where maintenance is performed when needed based upon the condition of the unit. The maintenance strategy is an evolution of good practice and NorthWestern will continue to evolve and mature the program, but the program will continue to be modified based upon operating history, industry experience, and implementation of technology.
- c. Yes, equipment records maintained are basically unique to each plant. The maintenance strategies bring consistency to the maintenance work and records applied across the system. The focus of the due diligence effort was on discovery issues that were material. NorthWestern was satisfied with the results of its review regarding major overhauls, minor overhauls, and routine inspections through the following: an understanding of the major investment upgrades to a significant number of turbines, generators, and balance of plant equipment; review of operation and maintenance information contained in the data room; review of past production history; selective inspection and review of plant maintenance records; discussions with PPLM personnel; observations, questions, and dialogue for comparison to legacy knowledge possessed by those from NorthWestern;

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site visits to each station where NorthWestern and CB&I personnel could conduct detailed discussions with available PPLM plant staff and witness the units that were operating and those which were not operating; and the overall condition of the powerhouses including the dam, the operating deck, the turbine deck (where applicable), the draft tube tunnel (where applicable), and the high tension floor (where accessible).

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PSC-276

Regarding: Transformer Tests and Plans
Witness: Rhoads

For transformers on the PPLM hydro system with an IEEE Category IV rating, please describe what measures NWE plans to take to address elevated levels of gassing and how those measures correlate with those contained in IEEE Std. C57-104 (*Guide for the Interpretation of Gases Generated in Oil-Immersed Transformers*).

RESPONSE:

NorthWestern Energy subscribes to Total Dissolved Gas Analysis procedure as an important part of NorthWestern's ongoing transformer preventative maintenance program.

The referenced IEEE standard says:

- Analysis of gases and interpretation of the significance is not a science, but an art subject to variability.
- Interpretation of data in terms of the specific cause or causes is not an exact science.
- The amount of CO and CO₂ generated depends on temperature and the amount of volume of insulation.
- Paper begins to degrade at lower operating temperatures than oil and its gaseous byproducts are found at normal operating temperatures in the transformer.
- The ratio of CO₂/CO is sometimes used as an indicator of the thermal decomposition of cellulose. The ratio is normally more than seven.

The condition IV transformers noted in the Essex report (Mystic GSU's 1 and 2) are due to higher temperatures experienced during the summer during limited periods and the large amount of cellulose insulation contained in the transformer. A contributing factor to the higher level of CO/CO₂ is these transformers are sealed and therefore all of these gases ever generated in the transformer have remained in the transformer, leading to the higher readings as time passes. The ratio of CO/CO₂ for the Condition 4 transformers is above 7, which is normal. With the reference to the IEEE standard above, no additional measures are necessary.

NorthWestern will also examine the following options to control the increase in CO/CO₂ gases:

- Continue to monitor DGA for all hydro system transformers as in the past and evaluate the need for more frequent monitoring.

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-276 cont'd

- Manually start the transformers' cooling system before they would be started by preset winding or oil temperature values.
- Add additional installed or temporary cooling fans.
- Assess the use of additional self-contained cooling options.
- Reduce load on the transformer.

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 13 (269-304)

Data Requests served May 2, 2014

PSC-277

Regarding: Assessment of Equipment Condition
Witness: Miller

- a. In discussing the condition of rotor components, the witness refers on two occasions to HDR's experience in assessing such components (RM-15, 10 and 14). In its development of the condition of the rotor components on PPLM's hydro system, did HDR examine the machines and the inspection and test reports for the machines?
- b. If the answer to (a) is yes, please explain and provides copies of all notes, analyses, and work product.
- c. The witness states that HDR's capital expenditure forecast accounts for "the age of the components, the history of investments, and the operating environment of the assets ..." (RM-8, 1-3). In its forecast, did HDR make direct examination of the components and review the components' operating history and available test and assessment data?
- d. If the answer to (c) is yes, please explain and provides copies of all notes, analyses, and work product.

RESPONSE:

- a. No. HDR's due diligence experience typically does not include a direct examination and detailed physical inspection of the unit mechanical and structural elements as the units are either on-line or not dis-assembled. If a chronic vibration or out-of-roundness problem were identified, then HDR would recommend further detailed investigation subsequent to the due diligence effort. We would also typically include CapEx dollars to address potential mitigation. If there were known equipment reliability concerns that remain to be addressed beyond what PPLM has planned, NorthWestern staff's intimate knowledge of the assets has accounted for that projected work scope in the 20-year forecast of capital expenditures.

It has not been HDR's experience that rotor structural component replacements are required after 80- or 100-plus years of service, and in the absence of any reported chronic vibration issue, HDR's CapEx Forecast does not include any potential risk mitigation for those elements.

- b. N/A.

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Data Requests served May 2, 2014

PSC-277 cont'd

- c. No. HDR utilized its hydropower engineering experience to provide its opinion and CapEx Forecast that incorporated the information provided in the Shaw/CB&I due diligence reports and the interviews with NorthWestern staff with knowledge of the facilities and their condition.

The already implemented and the planned investments are consistent with HDR's experience for the level of expenditure generally required to maintain similar hydropower assets in reliable operating condition. We do not believe that a physical inspection of the assets in their current operating state would fundamentally alter or materially change the HDR CapEx Forecast.

Further, it is HDR's experience to conduct more detailed record review and unit inspections to refine the CapEx Forecast after the closing of a successful transaction with HDR's client.

- d. N/A.

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-278

Regarding: Safeguards for Environmental Costs
Witness: Sullivan

The witness states that the management framework to comply with environmental conditions has built-in safeguards to reasonably control costs of environmental compliance (MGS-4) and describes two Memorandums of Understanding that cover nine of PPLM's 12 hydro facilities (MGS-5). Please describe the safeguards for the three remaining projects – Kerr, Mystic, and Thompson Falls, and provide copies of all Memorandums of Understanding, agreements, and other pertinent documents. If these documents have already been provided, please cite the document and specific data response.

RESPONSE:

The primary documents that support key resource issues at Kerr, Mystic and Thompson Falls are described below:

Kerr

FERC's Order Approving Amendment to Ordering Paragraph (C)(2) and License Articles 59, 64,65,66, and 67, and Measures Related to Endangered Species (Issued December 14, 2000) (available on the FERC website) specifies the annual payments required though the term of the license to accomplish the objectives of the Fish and Wildlife Implementation Strategy (FWIS). The Confederated Salish and Kootenai Tribes implement the FWIS and PPLM provides annual funding. The FWIS expense is included in the O&M forecast.

Mystic

FERC's Order Issuing New License (December 17, 2007) (available on the FERC website) required that PPLM prepare and implement various resource management plans. The plans were prepared in consultation with the resource agencies and approved by FERC. Funding is via the O&M budget. Therefore, it is not necessary to have separate agreements with the resource agencies.

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-278 cont'd

Thompson Falls

The Memorandum of Understanding titled, "Facilitation and Funding of Commission Order Approving Construction and Operation of Fish Passage Facilities, based on the Consultation Process, Fish Passage and Minimization Measure in USFWS Biological Opinion for Threatened Bull Trout (September 2013)", addresses the major resource issue at Thompson Falls – bull trout fish passage. It includes provisions for an Adaptive Management Funding Account funded by PPLM from which a Technical Advisory Committee uses for studies, monitoring, reports, and to minimize impacts on bull trout by operation of Thompson Falls. A copy of the MOU is attached.



PPL MONTANA, LLC

PPL Montana, 45 Basin Creek Road, Butte, Montana, 59701

PPLM-2188-3098

Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

November 11, 2013

RE: PPL Montana files a Renewed Seven Year (2014 through 2020)
Thompson Falls Project Fish Passage MOU per Condition TC2

Dear Secretary Bose:

PPL Montana is required to implement Condition TC2 (Thompson Falls Project MOU with downstream fish passage funding), included in both the November 4, 2008 U.S. Fish and Wildlife Service Biological Opinion and in the February 12, 2009 Commission Order Approving Construction and Operation of Fish Passage Facilities at the Thompson Falls project. To comply with Condition TC2, PPL Montana herein provides a Renewed Seven Year (2014 through 2020) Fish Passage MOU with annual funding for downstream fish (bull trout) passage at the Thompson Falls Project. Signatures of approval for this Renewed MOU from U.S. Fish and Wildlife Service, Montana Fish, Wildlife and Parks, Confederated Salish and Kootenai Tribes and PPL Montana, appear on page 16 of the attached MOU.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Jourdonnais', written over a white background.

Jon Jourdonnais
Manager Hydro Regulatory and Environmental Compliance

Cc: Jim Darling, MFWP
Bruce Rich, MFWP
Tim Bodurtha, USFWS
Wade Fredenburg, USFWS
Craig Barfoot, CSKT
Les Everts, CSKT
Brent Mabbott, PPLM
Andy Welch, PPLM
Dave Kinnard, PPLM

MEMORANDUM OF UNDERSTANDING

Thompson Falls Hydroelectric Project

PPL Montana

**Facilitation and Funding of Commission Order Approving Construction and Operation of
Fish Passage Facilities, based on the Consultation Process, Fish Passage and
Minimization Measures in USFWS Biological Opinion for Threatened Bull Trout**

September 20, 2013

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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MOU) is made and entered into effective January 15, 2008, by and between PPL MONTANA, LLC, a Delaware limited liability company (“PPL Montana”), the UNITED STATES FISH AND WILDLIFE SERVICE (“USFWS”), MONTANA FISH, WILDLIFE AND PARKS (“MFWP”), and THE CONFEDERATED SALISH AND KOOTENAI TRIBES OF THE FLATHEAD NATION (CSKT), the later three organizations being collectively referred to herein as “TAC Agencies”.

WITNESSETH:

WHEREAS, PPL Montana consulted with the USFWS, MFWP, CSKT, Montana Department of Environmental Quality (MDEQ), and the Federal Energy Regulatory Commission (FERC) in the development of a Biological Evaluation (BE) filed with FERC on April 4, 2008, assessing potential impacts to bull trout, which are federally listed as “threatened” under the Endangered Species Act (ESA), as a result of operations and proposed modifications at the Thompson Falls Hydroelectric Project; and

WHEREAS, the FERC issued a Biological Assessment (BA) to the USFWS on May 1, 2008 based in part on PPL Montana’s BE assessing potential impacts to bull trout as a result of operations and proposed modifications at the Thompson Falls Hydroelectric Project; and

WHEREAS, based on FERC’s BA, the USFWS issued an October 29, 2009 Biological Opinion (BO) to FERC and PPL Montana, its non-Federal designated representative, containing reasonable and prudent measures and associated terms and conditions to minimize impacts to the federally listed bull trout at the Thompson Falls Project; and

WHEREAS, the FERC will, at its discretion, require PPL Montana to implement minimization measures for bull trout at the Thompson Falls Project per its February 12,

2009 Order Approving Construction and Operation of Fish Passage Facilities, consistent with the reasonable and prudent measures and associated terms and conditions in the USFWS BO; and

WHEREAS, the parties hereto acknowledge that the Thompson Falls License may be revised on rehearing and may be further revised from time to time over the term of the MOU, thus references herein to the "License" shall refer to the then-effective Thompson Falls License; and

WHEREAS, the License provides that PPL Montana has responsibilities for hydro operations and certain other natural and cultural resources in relation to the License; and

WHEREAS, PPL Montana, as licensee for Thompson Falls is willing to accept the obligations imposed by the License and understands that implementation of bull trout minimization measures contained in the License shall occur in collaboration with the USFWS, MFWP, CSKT, and other agencies responsible for resource management; and

WHEREAS, minimization measures for bull trout in the License were developed in consultation with PPL Montana, FERC, USFWS, MFWP, CSKT, and other interests to address minimization measures for bull trout, however unforeseen circumstances may arise that necessitate change; and

WHEREAS, this MOU generally addresses the implementation of bull trout minimization measures for the duration of the term of the existing FERC License No.1869 for the Thompson Falls Project, together with any extension thereof prior to the issuance of a new license; and

WHEREAS, the parties to this MOU agree to seek cooperation leading to more efficient and effective resource management than could be achieved individually; and

WHEREAS, having voluntarily agreed to enter into this MOU, the parties hereby acknowledge that they do not intend this MOU to create contractual obligations and

further acknowledge that this MOU shall not be enforceable by or before any federal or state agency, or any court; and

WHEREAS, a previous five year version of this Memorandum of Understanding (MOU) was entered into effective January 15, 2008 through December 31, 2013 and was successfully implemented by and between PPL Montana, USFWS, MFWP and CSKT; and

NOW, THEREFORE, the parties agree as follows:

I. Purpose

A. The purpose of this MOU is to establish the terms and conditions for collaboration between PPL Montana and TAC Agencies in PPL Montana's implementation of minimization measures for bull trout as specified in the Thompson Falls License or other resource conservation measures related thereto taken voluntarily by PPL Montana.

B. This MOU provides for the continuing operation of a TAC made up of representatives of PPL Montana and TAC Agencies. This TAC shall function as the means for collaboration on the expenditure of mitigation funds and the implementation of bull trout minimization measures as specified in the License or other resource conservation measures related thereto taken voluntarily by PPL Montana.

C. This MOU provides for the allocation of annual TAC funds provided by PPL Montana. PPL Montana will bear ultimate responsibility for ensuring that bull trout minimization measures or other resource conservation measures taken voluntarily by PPL Montana are implemented in a manner consistent with requirements of the License.

D. To the extent consistent with the License, this MOU sets out provisions for adaptive implementation of minimization measures or voluntary minimization measures that may be appropriate due to advancement in technology, project experience that

dictates alternative methods implementation, and adequate response to unforeseen or changed circumstances or discoveries during the term of the MOU.

E This MOU provides assurances to interested agencies, stakeholders, and various publics that minimization measures to reduce impacts to bull trout at the Thompson Falls Project will be faithfully implemented in a timely fashion by PPL Montana and that operations and maintenance of the Thompson Falls Project shall be in compliance with the Endangered Species Act.

II. Definitions

A. Resource Management - As used herein refers to management of required bull trout minimization measures in the Thompson Falls FERC license.

B. Adaptive Management (AM) – Is embodied by this MOU through prior consultation with the USFWS, MFWP, CSKT, and other agencies in preparation of the Thompson Falls Project BE, BA, BO and the Application to FERC to amend the project license. Adaptive management is natural resource management where decisions are made as part of an ongoing science-based process. Results are used to modify future management methods and policy. As improved conservation technologies and science become available or new management priorities are collaboratively established, minimization or conservation funds may be redirected to accommodate the changing technology and needs of the resource and society within the requirements of the license. The adaptive management process emphasizes collaboration but still places ultimate responsibility upon PPL Montana to comply with the license and other applicable laws. PPL Montana believes that this management approach is entirely consistent with the spirit of the Federal Power Act and the interests of the people of Montana as expressed directly through TAC agencies.

C. Minimization Measures – These are the reasonable and prudent measures that serve to minimize take and that are identified in the USFWS biological opinion under the Incidental Take Statement (ITS). The associated terms and conditions in the ITS set

out the specific methods by which the reasonable and prudent measures are to be accomplished.

D. Thompson Falls Hydroelectric Project - This includes all of the dam, spillway and all associated structures located on the Clark Fork River including the reservoir impoundment upstream of the dam and spillway and any associated structures and/or facilities needed to maintain and operate the hydroelectric facilities within the FERC project boundary.

III. Committees

A. Technical Advisory Committee (TAC) – A committee made up of willing representatives from PPL Montana, USFWS, U.S. Forest Service (USFS), MDFWP, MDEQ, CSKT and other public or private interests whose purpose is to address potential impacts to bull trout from the operation and maintenance at the Thompson Falls Project on the Clark Fork River in western Montana. PPL Montana, USFWS, CSKT, and MFWP are formal voting members of the TAC whereas other interests are non-voting and advisory.

1. Representatives of TAC Agencies and their replacements from time to time shall be determined by each participating entity. Initial members of the TAC are listed in Exhibit "A".

2. PPL Montana will provide the TAC annual updates and annual work plans for review and approval. The TAC members will have a minimum of 30 business days, unless otherwise agreed to time period for review, to provide comments for all review materials provided by PPL Montana, including annual reports and work plans. PPL Montana will provide materials for review in advance of the 30 day notice to the extent practicable.

3. With regard to the TAC, federal, state, and CSKT government agencies do not waive or diminish in any way, the exercise of their authorities and rights

with respect to this or other proceedings. The USFWS expressly reserves authority under the ESA and Federal Power Act (FPA) with regard to procedures, policy, and regulations related to addressing impacts to bull trout from project operations and maintenance at the Thompson Falls Project.

B. PPL Montana Steering Committee. The PPL Montana Steering Committee for the Thompson Falls Project will consist of representatives of PPL Montana listed in Exhibit "A". At its discretion, PPL Montana may replace its representatives from time to time. This PPL Montana Steering Committee will provide general policy and regulatory guidance to the PPL Montana representatives on the Thompson Falls TAC but will otherwise not directly participate in TAC business or the TAC decision making process.

IV. Adaptive Management Funding Account (AMFA)

The TAC will apply the concept of adaptive management where applicable, when determining bull trout minimization priorities and schedules for funds to be paid out of the AMFA. PPL Montana will provide an account for funding downstream passage minimization measures approved by the TAC that meet the requirements of the BO.

All funding accounts will be internally managed by PPL Montana. However, no AMFA funds will be spent without prior approval from the TAC.

Annual payment. For the purpose of this MOU, PPL Montana will provide \$100,000 annually for seven calendar years beginning January 1, 2014 and provide a starting amount of \$150,000 in a TAC Reserve Account. PPL Montana will allow a maximum of \$250,000 to accrue (from unspent or transferred annual TAC funds) in the TAC Reserve Account for use by the TAC during this same seven year time period for implementation of downstream passage minimization measures in addition to License required studies, monitoring activities, reports, upstream fish passage minimization measures, gas abatement monitoring, predator control measures, and other means of reducing impacts on bull trout caused by operation of the Thompson Falls as described in Exhibit "B". Increases or decreases in MOU funding, provided by PPL Montana, to comply with

FERC-mandated minimization measures in the License can be addressed within provisions of this MOU. Per this MOU, PPL Montana may increase or decrease funds in any single year to support implementation of TAC-approved minimization measures for bull trout and to meet the requirements of the BO. Factors such as monitoring or study results, changing technology, or other needs of the resource may necessitate changes (increases or decreases) in funding amounts and schedules over time. This MOU is not intended to relieve PPL Montana of the obligation to make such funding changes. PPL Montana further anticipates that this MOU may be renewed or revised during the current FERC Project License term or extensions thereof. MOU renewal, if any, after December 31, 2020, with appropriate minimization funding level commitments will be based on PPL Montana's remaining compliance requirements within the License.

Bull trout minimization measures, including upstream and downstream fish passage structures, gas abatement measures, habitat restoration, or other minimization measures required by the FERC will be fully funded by PPL Montana if the cost of such measures is more or less than specified in this MOU.

V. PPL Montana Operations/Obligations

V.1. PPL Montana Steering Committee Funds. PPL Montana estimates that a total of one-half employee full-time equivalent (0.5 FTE) will be required to manage PPL Montana responsibilities on the TAC, coordinate implementation of bull trout minimization measures, and to facilitate consultation between the FERC, state and federal agencies and the CSKT. PPL Montana will be responsible for funding the appropriate level of PPL Montana or outside consultants required staff required for adequate and timely project management of implementation, monitoring, and reporting on the effectiveness of bull trout minimization measures. PPL Montana will prepare and implement an internal budget appropriate for Steering Committee activities. The TAC will be responsible for advising PPL Montana should PPL Montana not fulfill its responsibilities in this regard.

V.2 PPL Montana administrative and other support. PPL Montana will provide reasonable administrative, clerical and support facilities for the TAC. PPL Montana will be responsible for preparing proposed agendas, and for the management and preservation of licensing data and studies including the provision of reasonable public access to such data and studies. PPL Montana shall provide assistance to the TAC for the purpose of identifying collaborative funding opportunities, application for grants, and managing any land transactions related to conservation activities such as conservation easement or fee title acquisition where needed and practicable.

V.3 PPL Montana will fully and faithfully perform all obligations to conserve, protect, and reduce impacts to bull trout per the FERC License Order and requirements in the USFWS BO.

V.4 PPL Montana shall promptly notify the USFWS if for any reason PPL Montana is unlikely or unable to fulfill any obligation per the FERC License order or per the USFWS BO.

V.5 PPL Montana will use its best efforts to help resolve disputes that may occur among TAC members, agency officials, local officials, or private parties with respect to the implementation of minimization measures per the FERC License agreement using dispute resolution process described herein.

V. 6 PPL Montana will implement timely monitoring and reporting requirements per the FERC License Order, USFWS BO, and any other TAC approved agreement related to bull trout minimization measures.

D. Minimization Measures – minimization measures referred to herein are a specific reference to those bull trout minimization measures required by the License.

VI. Authority

A. Authority to enter into MOU.

1. PPL Montana is authorized to enter this MOU by PPL Montana, LLC, general corporate authority.
2. MFWP is authorized to enter into this MOU pursuant to Montana Code Annotated Sections 23-1-102, 23-1-107, and 87-1-201.
3. USFWS is authorized to enter into this MOU pursuant to the Fish and Wildlife Service Coordination Act (16 U.S.C. 661 et. seq.)
4. CSKT is authorized to enter into this MOU pursuant to CSKT Constitution Article VI.

B. Funding, authority, and operating limitations. It is understood that operating plans, procedures, schedules and agreements may be developed, as needed, by the participants to implement the specific objectives of this MOU. Nothing in this MOU or subsequent plans, procedures, or agreements will be construed as affecting the authorities of PPL Montana or TAC agencies as binding beyond their respective authorities or prerogatives for decision-making, or to require any of the TAC agencies to obligate or expend funds in excess of appropriated funds.

C. Limitations. Nothing herein shall be construed as obligating any Federal agency to expend or as involving the United States in any contract or other obligations for the future payment of money in excess of appropriations authorized by law and administratively allocated for any work under this MOU. PPL Montana's funding obligations in the context of this MOU will be limited to and governed by the License and PPL Montana's obligation as Licensee. If one or more of the TAC Agencies fails to fulfill any of its commitments made pursuant to this MOU, PPL Montana or any other TAC member, reserves the right to withdraw from this MOU or to renegotiate the terms set forth herein.

VII. TAC Operations

A. **PPL Montana Responsibility.** PPL Montana will be responsible for managing the TAC AMFA for bull trout conservation and for providing technical input related to the implementation of bull trout minimization measures for the Thompson Falls Project. PPL Montana will also be responsible for seeing that minimization funds and measures are authorized and spent for appropriate projects that comply with the License. In consultation with TAC members, PPL Montana will convene, facilitate and chair TAC meetings to fulfill implementation requirements of the License, and, with regular disclosure to TAC members, manage the TAC AMFA.

B. **Meetings and Quorum.** The TAC will meet on a regularly scheduled basis to develop annual work plans, prioritize the implementation of bull trout conservation measures in the license, and discuss the annual accounting of how funds have been used to implement measures and future funding strategies. A TAC quorum is herein defined as one voting representative from PPL Montana, USFWS, CSKT and MDFWP. Quorum decisions by the TAC will require each of these agencies to be present in person or by proxy.

C. **Meeting participation.** All TAC meetings are open to the public. TAC subcommittees and working groups may be organized as appropriate. Subcommittees and working groups may include staff personnel of PPL Montana or TAC Agencies, outside consultants or others. Any such subcommittees or working groups will be advisory to the TAC.

D. **TAC decision-making.** PPL Montana will bear ultimate responsibility for ensuring that the License conditions and bull trout minimization measures are implemented and funded in a manner consistent with requirements of the License. PPL Montana will seek to attain consensus among the voting members of the TAC in implementing minimization measures. Multiple representatives of PPL Montana and TAC Agencies may actively participate in TAC meetings. However, PPL Montana and

each TAC agency will designate one person to officially represent their organization (for TAC quorum voting) at each TAC meeting. All parties commit to a good-faith effort to resolve any differences in a timely and cooperative manner. In the event a consensus cannot be achieved among the voting members of the TAC, the TAC may elect to enter voluntary dispute resolution as set forth below:

Any dispute that arises in the implementation of this MOU and any implementation measure, or in any committees formed under this MOU, shall, in the first instance, be the subject of informal negotiations between the affected parties. If negotiations fail, a party or parties may refer a dispute to the TAC, along with a written statement outlining the dispute and any areas where the parties are in agreement. The TAC shall be convened by PPL Montana and, will develop consensus recommendations for the resolution of the dispute. During this informal dispute resolution period, any party may request the Director of FERC's Office of Dispute Resolution, or the Director's designee, to participate in the negotiations to assist in resolving the dispute. If no resolution is reached during the informal process, the disputing party or parties shall have thirty (30) days following the notice of the TAC recommendations to refer the dispute to FERC for expedited dispute resolution. All disputes taken to FERC under this MOU shall be governed by the alternate means of dispute resolution contained in FERC's Rules of Practice and Procedure, 18 C.F.R. Section 385.604, as amended from time to time or any succeeding FERC regulations governing alternative means of dispute resolution. The proposed TAC recommendations and all supporting documents, may be submitted to the FERC. If a disputing party does not refer a dispute to the FERC within the thirty-day (30) time period, the TAC recommendations will become binding on all parties.

E. **Conduct of Meetings.** Guidelines for the conduct of TAC meetings are attached in Exhibit "C" as may be amended from time to time by mutual consent of PPL Montana and the TAC agencies.

VIII. General provisions

A. **Re-openers** – The parties to this MOU generally agree they will not invoke or rely upon any re-opener clause contained in the License with respect to any matter covered by this MOU unless the party determines that new information reasonably demonstrates that applicable provisions of this MOU are inconsistent with the public interest and affords the TAC, at least ninety (90) days to consider the new information and that party's position. Said party shall not be required to comply with this ninety (90) day notice provision if it believes an emergency situation exists, or is necessary to comply with the Endangered Species Act. Notwithstanding the provision of this paragraph, the parties agree that a TAC Agency may seek re-opening of the License as necessary to comply with any state or federal law and implementing regulations not preempted by the Federal Power Act, but this provision shall not be deemed to represent PPL Montana's or other parties consent to any such request by a TAC agency. In addition, the USFWS may seek re-opening of the License pursuant to its authority under the Federal Power Act, but this provision shall not be deemed to represent PPL Montana's or other parties consent to any such request by the USFWS.

B. **Cooperate in Studies** – The parties to this MOU agree to cooperate in conducting studies and monitoring activities implemented pursuant to the License and in providing reasonable assistance in any approval or permitting process that may be required for implementation of or specific conservation measures; provided that any of TAC Agencies are not, by this commitment compromising or relinquishing any legal authority they may have in those situations where they may be the permitting agency.

C. **Separate agreements.** For each minimization measure implemented pursuant to this License, the parties understand and agree that separate agreements

between PPL Montana and participating agencies may be executed as necessary to complete that project.

D. Term of MOU.

1. **Duration.** This MOU shall be effective upon execution by all parties and shall remain in effect through December 31, 2020, or termination of the License, whichever is later.

2. **Renewal of the MOU.** This MOU may be renewed by mutual consent of PPL Montana and TAC Agencies until the term of the current FERC license, any new license or any extension thereof, expires.

E. Termination of the MOU. This MOU may be terminated at any time by mutual written agreement of all parties.

F. Binding effect. As set forth herein, this MOU shall inure to the benefit of, and shall be binding upon the respective successors and permitted assigns of the parties hereto.

G. Assignment. The parties hereto may not assign this MOU without consent of other parties; provided that such consent will not be unreasonably withheld.

H. Modification. This MOU may be modified only in writing by mutual agreement of all the parties; provided that such consent will not be unreasonably withheld, and provided that PPL Montana may assign its rights and obligations hereunder to any other entity that becomes licensee of the Thompson Falls Project under the License.

I. Execution in counterparts. This MOU may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be one and the same instrument.

J. Precedent. Parties to this MOU understand and agree that this MOU establishes no principles or precedents with regard to any issue addressed herein or with regard to any party's participation in any future proceeding and that none of the parties to this agreement will cite either this MOU or its approval by FERC as establishing any principles or precedents except with respect to matters to which the parties have herein agreed.

K. PPL Montana will keep the TAC reasonably informed of the status of License compliance filings and, in the event that any such filing is disputed, PPL Montana shall notify all parties of the dispute and make copies of its filing available to all parties.

IN WITNESS WHEREOF, the parties have executed this Thompson Falls MOU
by signatures below.

PPL MONTANA, LLC

By *[Signature]*
Its Vice President / COO
Date 11/5/13

OFFICE OF
GENERAL COUNSEL
BY: *[Signature]*
DATE: 11/5/13

MONTANA FISH, WILDLIFE AND PARKS

By Bruce Rich *[Signature]*
Its Fisheries Division Administrator
Date 10/22/13

UNITED STATES FISH AND WILDLIFE SERVICE

By *[Signature]*
Its Supervisor
Date September 23, 2013

THE CONFEDERATED SALISH AND KOOTENAI TRIBES OF THE FLATHEAD
NATION

By *[Signature]* (CST CHAIRMAN)
Its _____
Date 10-29-13

EXHIBIT "A"

Initial members of the PPL Montana Steering Committee and Thompson Falls Technical Advisory Committee (TAC):

PPL Montana Steering Committee

Gordon Criswell (PPL Montana)

Dave Kinnard (PPL Montana)

Jon Jourdonnais (PPL Montana)

Brent Mabbott (PPL Montana)

Andy Welch (PPL Montana)

Thompson Falls TAC (designated representatives of)

PPL Montana (voting)

MFWP (voting)

USFWS (voting)

CSKT (voting)

MDEQ (non-voting)

USFS (non-voting)

Other agency or public participants (non-voting)

EXHIBIT "B"

**Adaptive Management Fund Account
PPL Montana 7 Year (beginning 1/1/14) Commitment**

PPL Montana Steering Committee (0.5 FTE)	-FERC license administration -interagency TAC management -implement minimization and conservation measures -agency and NGO cost share program coordination
---	---

PPL Montana will provide \$100,000 annually for seven calendar years beginning January 1, 2014 and provide a starting amount of \$150,000 in the TAC Reserve Account. PPL Montana will allow a maximum of \$250,000 to accrue (from unspent or transferred annual TAC funds) in the TAC Reserve Account for use by the TAC during this same seven year time period for TAC bull trout downstream passage and other minimization measures per the FERC License and USFWS BO. These measures include any required studies, monitoring, reports, upstream and downstream fish passage minimization measures, gas abatement monitoring, predator control measures, and other means of reducing impacts on bull trout caused by operation of the Thompson Falls Project.

EXHIBIT "C"

CONDUCT OF TAC MEETINGS

- I. **Agendas.** Agendas for TAC meetings will be developed by PPL Montana in consultation with agency TAC members. At minimum, a TAC meeting will be held twice annually through the term of this MOU, first to review progress and approve the annual report of the previous year's implementation work and subsequently to approve an annual work plan for each upcoming year.
- II. **Meeting Summaries.** PPL Montana will prepare TAC meeting summaries. The summaries will identify action items and decisions reached by the TAC. Summaries will be sent to TAC members as a mechanism for information exchange and coordination.
- III. **Open Meetings.** Non-TAC members (including the general public) can attend and observe TAC meetings in progress. However, only a designated portion of each TAC meeting may be open to comments from non-TAC members.
- IV. **Caucus.** Any TAC member may declare a caucus break. Caucus members will be asked to conclude their discussions in a timely manner so as not to unduly restrict the completion of the scheduled meeting agenda. Caucusing may continue as needed outside of and independent of TAC meetings.
- V. **Good Faith.** TAC members agree to act in good faith with respect to the concerns of the others to reach an agreement within this consultation process. Proposals, positions taken, written statements, and materials used will not be considered as TAC commitments unless TAC agreement is achieved. TAC members agree to participate in a free, open, and mutually respectful exchange of ideas, views, and information in attempting to achieve agreement. Personal attacks and prejudicial statements will not be tolerated. All TAC participants will be given an equal opportunity to be heard.
- VI. **Public Statements.** TAC members may describe proposals under discussion and develop positions in consultation with constituencies as required by respective agency

process. With the exception of information shared in confidence, a participant may make such public statements, including to the press, describing topics under discussion and their own views about these topics. No TAC member will describe or characterize the position of any other party in public statements or in the discussions with the press. As an exception, in any statements that a TAC member makes in an open public meeting to inform its governing entity, that member may describe the position of other participants. In doing so, participants shall consult those other participants and make a good faith effort to accurately describe their positions. All members agree not to divulge information shared by others in confidence nor will any party seek to place blame on any other party, even if that party withdraws from the process or the process is discontinued.

VII. Rights in Other Forums. Participation in a TAC does not limit the right or obligations of any individual or organization. Members will make a good faith effort to notify one another in advance, if litigation, or other action outside the committee process will be initiated, which will affect the terms of agreements or actions being taken by the committee.

VIII. Meeting Process. TAC meetings will be chaired and facilitated by PPL Montana. PPL Montana may also provide a meeting facilitator to conduct the meetings. PPL Montana or facilitator will work to insure that the TAC consultation process runs smoothly. The role of PPL Montana (or its designated facilitator) includes developing agendas, chairing meetings, working with TAC members both at and between meetings to resolve questions and to encourage and assist progress in accomplishing TAC goals, resolving any impasses that may arise, preparing meeting summaries, assisting in the location and circulation of background materials and materials prepared by participants, and other functions at the request of TAC members. In the event an outside facilitator is used, PPL Montana will pay for facilitation services with PPL Montana Steering Committee funds.

IX. FERC Communication Process. PPL Montana will, in consultation with TAC agencies, maintain appropriate correspondence and consultation with FERC staff and make required written filings with the FERC regarding implementation of, and any

amendments to, the License. TAC agencies also have an equal right to consult with FERC on Thompson Falls issues within the discretion of their respective agency and FERC rules governing consultation.

X. Public Participation. Each TAC meeting agenda will provide a specific time period for public comment. Members of the public will be able to observe TAC meetings in progress and offer comments during a specified public comment period at the invitation of TAC member(s). TACs may form subgroups to work on specific issues and may choose to include members of the public in the subgroup process. TAC members representing public agencies will be expected to reflect, take actions, and represent positions that reflect their respective public involvement responsibilities. Further, TAC members will assume responsibility as appropriate for directing public comment and public participation through appropriate forums within their respective agencies.

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-279

Regarding: FERC Relicensing Costs
Witness: Sullivan

- a. Has PPLM historically funded relicensing efforts through its O&M budget?
- b. Has PPLM developed a budget estimate for the relicensing of the Thompson Falls Project?
- c. If the answer to (b) is "Yes," has NWE reviewed the budget estimate?
- d. If the answer to (b) is "Yes," please provide a copy of the budget estimate.
- e. What historic O&M work and costs would be foregone to allow for the addition of relicensing costs for Thompson Falls?

RESPONSE:

- a. Yes.
- b. No.
- c. N/A
- d. N/A
- e. As stated in Data Request MCC-028b, the O&M forecast was based on PPLM-provided costs for 2013 escalated 2.5% annually through 2036. The 2013 baseline included costs for fisheries and recreation studies and extensive consultation with the resource agencies that will be directly applicable to relicensing. The costs of these activities carried forward in the forecast, combined with internal labor, are expected to make up the majority of relicensing expenses.

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-280

Regarding: Extent of Specific CapEx Information
Witness: Rhoads

In questioning the assertion in the Essex checklist that information on certain facility assets was unknown, the witness states that “Essex and the Commission indicated the record was not complete; yet they had from February 7 to February 21, 2014 to request additional specific information either through data requests or additional conference calls needed to complete their review” (WTR-6, 13-22). One of the Commission’s attempts to gain additional specific information is found in PSC-184(b), which asked witness Rhoads what evaluations and analyses were performed to develop the [DCF capital expenditure] cost estimates. In response, the witness cited reference to “routine annual O&M and capital expenditures,” but identified no specific investigations or analyses underlying the cost estimates.

- a. Were other evaluations or analyses on equipment and structures performed to develop the cost estimates in the DCF model?
- b. If the answer is yes, please provide copies of those evaluations and analyses.

RESPONSE:

- a. Yes.
- b. Please reference the responses to Data Requests MCC-028, MCC-029, MCC-055, MCC-057, PSC-018b and PSC-282.

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 13 (269-304)

Data Requests served May 2, 2014

PSC-281

Regarding: Independent Nature of HDR's Work
Witness: Miller parts a, d / Rhoads part b

- a. Please provide any agreement or contract between HDR and NWE for work performed in relation to the former's evaluation of the Hydros.
- b. What led NWE to decide to contract with another firm to review its due diligence work?
- c. How many conversations and exchanges of letters or emails did NWE and its employees or agents (including Shaw/CB&I) have with HDR during its work?
- d. How much has HDR been compensated for its work in this matter?
- e. NWE states that Mr. Miller is an independent expert. Please provide all written communications between NWE and its employees or agents (including Shaw/CB&I) and HDR.

RESPONSE:

- a. See Attachment.
- b. NorthWestern hired HDR to conduct a peer review of the testimony of William T. Rhoads, to provide a peer review of work produced by the Commission's engineering consultant, Essex, provide additional input as needed regarding industry practice, and evaluate the reasonableness of capital investment assumptions and the remaining life of assets in support of stakeholders involved in this docket. Please refer to the Prefiled Rebuttal Testimony of Rick Miller describing the qualifications of HDR to perform this work.
- c. NorthWestern does not have a record of the number of conversations held between NorthWestern and HDR. See part e below for emails.
- d. HDR began its support of NorthWestern on February 5, 2014, and has been compensated \$4,313.66. Feb (\$2,734.43) + March (\$1,579.23)
- e. NorthWestern objected to this data request to the extent that it requested privileged material. Please see the documents in the folder labeled "PSC-281e" on the attached CD. See also the attached privilege log detailing any documents withheld due to claims of privilege.



Agreement #CLM0003153

SERVICES AGREEMENT with Service Release Purchase Orders

THIS AGREEMENT is made this ___ day of _____, 2014, by and between **HDR Engineering, Inc.**, 2913 Millennium Circle, Billings, Montana, 59102 (**Vendor**), and **NorthWestern Corporation**, a Delaware corporation, d/b/a **NorthWestern Energy**, 40 East Broadway, Butte, Montana, 59701 (**NWE**).

In consideration of their mutual covenants, the parties hereto set forth and agree as follows:

1. Services to be Performed

- 1.1. This Agreement shall constitute the basic agreement between the parties for regulatory support services as described in Exhibit A, Description of Services, attached hereto. Specific jobs shall be set forth in written Service Release Purchase Orders issued periodically by NWE and accepted by Vendor. The conditions set forth herein shall apply to all services or deliverables performed or provided by Vendor to NWE as described and agreed upon between the parties in such written Service Release Purchase Orders. Each Service Release Purchase Order shall include a description of the services to be performed, the deliverables to be provided, the location of the work, the time for performance, the amount and terms of payment, the materials, equipment and labor to be supplied by NWE, and any other special circumstances relating to the performance of the services. Nothing in this Agreement, however, shall obligate NWE to have any particular service performed by Vendor or obligate NWE to provide Vendor with any minimum volume of work hereunder. Issuance of Service Release Purchase Orders to Vendor shall be within the sole discretion of NWE.
- 1.2. Vendor acknowledges that it possesses the necessary professional skill and expertise to perform the Services contemplated hereunder.
- 1.3. Vendor acknowledges that it is responsible for obtaining information on conditions and circumstances that may affect its performance of the Services, that it has the duty to conduct any necessary site visits prior to commencement of the Services, and further that it has taken all steps necessary to ascertain the nature and location of the Services to be performed and the general and local conditions that can affect its performance of the Services and the cost thereof.

2. Materials, Equipment and Labor

Vendor shall furnish and pay for all materials, supplies, labor, transportation, tools, equipment, services and supervision necessary to perform the Services herein described; provided, however, NWE shall furnish those materials, equipment, labor, supplies and services set forth and described in the applicable Service Release Purchase Order.

3. Term and Schedule for Performance of Services

The term of this Agreement shall be a period commencing on the date this agreement is executed, and ending on February 28, 2017. The Services shall be commenced and completed by Vendor pursuant to the schedule set forth in the applicable Service Release Purchase Order. Time is of the essence in the performance of each and every obligation by the Vendor.

4. Force Majeure

If either party is prevented in whole or in part from performing its obligations under this Agreement by unforeseeable causes beyond its reasonable control and without its fault or negligence, or orders or requests of state, local, or federal government agency or regulatory body for assistance in responding to an emergency order or disaster, then the party so prevented shall be excused from whatever performance is affected by such cause, to the extent the performance is actually affected; provided that the affected party provides written notice to the other party of the force majeure condition(s) within five (5) calendar days from the onset of such condition. Failure on the part of Vendor to give NWE timely notice shall constitute a waiver of the force majeure claim by Vendor.

5. Changes

NWE may, by written order to Vendor, at any time during the term of this Agreement and without invalidating the Agreement, make changes within the general scope of the Services or within any particular Service Order and Vendor agrees to perform such changed Services. If such change increases or decreases the cost of or time for performing the services hereunder, then NWE shall make an equitable adjustment in the payment to Vendor and/or the time for performance hereunder. Any adjustment to price shall be based on the reasonable expenditures and savings realized by Vendor in providing the Services, as changed, and take into account Vendor's reasonable profit for such Services. In connection therewith, Vendor shall maintain and upon NWE's request provide an itemized accounting of Vendor's costs and profits associated with the changed Services.

6. Quality of Service and Quality Assurance

- 6.1. Vendor, and each of its employees, agents, representatives and subcontractors, shall perform all Services with care, skill, and diligence, in accordance with all applicable professional standards currently recognized by such profession. Vendor shall employ only competent and skillful workers to perform the Services. Vendor's employees, agents, representatives and subcontractors shall have the qualifications to proficiently perform the Services following current industry-wide standards and required by all applicable governmental regulations.
- 6.2. Vendor, and each of its employees, agents, representatives and subcontractors shall conduct themselves in all matters involving NWE in a professional, ethical, moral and legal manner.
- 6.3. All Services and workmanship will be subject to inspection and examination by NWE at all times during this Agreement. If any Services specified herein are not in conformance with the requirements of this Agreement, NWE shall have the right to require Vendor to re-perform the Services immediately to conform to the requirements of this Agreement. If the Services to be performed are of such nature that the defect cannot be corrected by re-performance, NWE may reduce the compensation owed to Vendor to reflect the reduced value of services performed and/or terminate this Agreement.

7. Termination

- 7.1. NWE shall have the right to terminate this Agreement should NWE determine that Vendor has breached any of its warranties or obligations under this Agreement or that Vendor is failing to perform the Services in a timely manner or with the quality required by this Agreement. In the event NWE determines that the Vendor has breached any of its warranties or obligations under this agreement or that vendor is

failing to perform the services in a timely manner or with the quality required by this agreement, NWE shall provide written notice to Vendor stating the nature of the unsatisfactory condition. Vendor shall have ten (10) business days after receipt of this written notice to either remedy the unsatisfactory condition or provide evidence, acceptable to NWE, that (1) proper corrective action is being taken to remedy the condition or (ii) that no breach has occurred. If Vendor fails to remedy, or to commence and thereafter with due diligence pursue resolution of the unsatisfactory condition with all due speed, then NWE shall have the right to terminate this Agreement without further notice.

- 7.2. If NWE so terminates this Agreement, NWE shall pay Vendor for services satisfactorily performed through the date of termination and NWE shall not be liable for any further payment to Vendor. Vendor shall be liable for any direct costs incurred by NWE as a result of the termination. NWE's rights herein are in addition to any other remedies it may have under this Agreement or under the law.
- 7.3. NWE shall also have the right, in its sole and absolute discretion, to terminate this Agreement for its convenience upon ten (10) calendar days written notice. In the event of such termination for convenience, Vendor shall be paid for all Services rendered through the termination date and for any direct costs (excluding any anticipated profits) incurred by Vendor as a result of the termination. Such payment shall constitute Vendor's sole right and remedy. NWE shall have the right to terminate for convenience even when a condition of force majeure exists.

8. Ownership of Documents

All technical or business information, documents, and reports, in whatever medium or format, including but not limited to, data, specifications, drawings, artwork, sketches, designs, plans, records, reports, proposals, software and related documentation, inventions, concepts, research or other information, originated or prepared by or for Vendor in contemplation of, or in the course of, or as a result of, Services performed hereunder ("Prepared Information"), shall be promptly furnished by Vendor to NWE in accordance with the terms of this Agreement or upon NWE's request. All such Prepared Information shall be the exclusive property of NWE and shall be deemed to be works for hire. Vendor hereby assigns to NWE all rights, title, and interest in and to such Prepared Information including rights to copyright in all copyright material and in and to all patents that may be issued thereon. All such Prepared Information shall be deemed proprietary information as defined herein. Neither party grants the other party any express or implied licenses under any patents, copyrights, trade secrets, trademarks, or other intellectual property rights, except to the extent necessary for each party to fulfill its obligations to the other under this Agreement.

9. Confidentiality and Conflicts of Interest

- 9.1. Without limiting Vendor's obligations in 6.2 above, each Party agrees to hold in strict confidence and not disclose to any third party any proprietary documents, Prepared Information, or other information, data, findings, results, or recommendations deemed to be confidential by either Party or obtained or developed by Vendor in connection with the Services under this Agreement (collectively "Confidential Information"); provided, however, a party may disclose Confidential Information ("Disclosing Party") of the other party ("Non-Disclosing Party") to judicial, regulatory, or governmental entities after giving the other party reasonable notice prior to such disclosure. The Disclosing Party shall take all reasonable steps to protect the Confidential Information through protective orders or the equivalent prior to its actual disclosure. Confidential Information shall not include information which: (i) is or

becomes publicly available without fault of the receiving party; (ii) is independently developed by the receiving party without use of or access to the Confidential Information; and (iii) was known to the receiving party prior to its receipt of the Confidential Information and is not subject to other restrictions on disclosure or use.

- 9.2. In consideration of the mutual covenants contained in this Agreement, Vendor knowingly and voluntarily agrees that during the term of this Agreement, Vendor will not, except as otherwise expressly permitted herein, consult with, render services to, or become employed by any person or entity which was the subject or beneficiary of any Services Vendor provided to or on behalf of NWE pursuant to this Agreement.
- 9.3. Vendor further warrants and agrees that it does not and will not have any conflicts of interest regarding the performance of services hereunder.

10. Compensation

- 10.1. NWE shall pay and Vendor shall accept, as full payment for all Services performed and all materials furnished, and for all costs and expenses incurred in the performance of the Services described herein, the sums specified in the applicable Service Release Purchase Order.
- 10.2. Progress payments will be made upon receipt and approval of Vendor's invoice for Services satisfactorily performed.
- 10.3. All invoices shall be sent to:

NorthWestern Corporation
Attn: Accounts Payable – Bill Rhoads
40 East Broadway
Butte, MT 59701
- 10.4. All invoices shall reference NWE Contract #CLM0003153, the NWE Service Release Purchase Order Number, and the name of the individual requesting the services within the Service Release Purchase Order. The invoice shall provide such detail as to allow NWE to compute the amount due for Services performed and/or deliverable(s) provided. Vendor understands that its failure to follow this requirement may result in delayed payments by NWE.
- 10.5. In the event of a dispute regarding an invoice, NWE shall pay the undisputed amount to Vendor pursuant to the terms of the compensation schedule and NWE shall further notify Vendor of the amount(s) in dispute and the basis for the dispute.
- 10.6. Vendor shall promptly pay when due all Vendor payrolls (including wages and taxes) related to its performance of the Services and shall promptly pay when due all costs for supplies, materials and subcontracts related to its performance of the Services. Vendor shall not file any lien, or permit any lien to be filed by any of its direct or indirect contractors or agents, with respect to any part of the Services or property of NWE. Upon NWE's request, Vendor shall furnish satisfactory evidence of payment of all wages, taxes, and all other costs incurred in connection with the performance of the Services. Additionally, Vendor shall provide construction lien waivers for itself, its subcontractors, and supply and material suppliers, within ten days of any payments made under this Agreement.

11. Indemnification, Warranty, Liability, Release and Limitation of Liability, Right to Repair.

11.1. Indemnity

Except to the extent of NWE's negligence, Vendor shall indemnify NWE, its officers, directors and employees from any and all claims, demands, litigation, expenses or liabilities (including costs and attorneys' fees through final appeal) of every kind and character arising from or incident to the negligent performance of the Services by Vendor, its employees or subcontractors, including without limitation: all actions, suits, claims, demands or liability of any character whatsoever, brought or asserted for injuries to or death of any person or persons, damages to property, contamination of or adverse effects on the environment, infringement of copyright, trademark, patent or other intellectual property rights, violation of federal, state or local governmental laws, regulations or ordinances, or other breach of legal duty arising from performance of the Services, the work products resulting from the Services and/or the use thereof, the presence of Vendor's employees or agents on NWE premises, or Vendor's breach of any term or obligation of this Agreement. Vendor's indemnification obligations shall include, but are not limited to indemnity for all direct damages and damages within the contemplation of the parties upon entry into this Agreement and such as might naturally be expected to result therefrom.

11.2. Representations

- 11.2.1. Vendor represents that any products, materials and/or services furnished by Vendor hereunder to NWE shall be delivered or performed free of any claim of any person by way of patent, trade secret, copyright, trademark infringement or any other proprietary right of any person. Vendor warrants and represents that: (i) Vendor has title to and is a lawful owner of all materials and supplies provided hereunder; (ii) such materials and supplies are free of any security interests, claims, liens or any other encumbrances whatsoever; (iii) Vendor has good right to assign, transfer and convey them; and (iv) Vendor will warrant and defend the title against all claims and demands of all persons.
- 11.2.2. Unless otherwise provided in this Agreement, all materials and equipment furnished by Vendor and incorporated into any work under this Agreement shall be new and where not specified, of the most suitable grade of their respective kind for their intended use and all workmanship shall be acceptable to NWE.
- 11.2.3. Vendor warrants that all goods, articles, material and work will conform with applicable law as well as applicable drawings, specifications, samples and/or other descriptions given, will be fit for the purposes intended and of first class quality. Any reuse or modification by NWE of such goods, articles, material and work, for purposes other than anticipated herein, shall be at NWE's sole risk and without liability to the Vendor.
- 11.2.4. Vendor shall transfer directly to NWE all warranties from material and equipment suppliers. Vendor further warrants that all warranties associated with any equipment purchase for this Agreement or any Service Order are properly transferable to NWE.
- 11.2.5. The remedies provided herein shall be in addition to any other remedies that NWE may have under this Agreement or under applicable law.

11.2.6. Vendor shall transfer directly to NWE all warranties from material and equipment suppliers.

11.3. Liability, Release and Limitation of Liability

11.3.1. Upon acceptance of payment and other good and valuable consideration, Vendor hereby agrees to release and forever discharge NWE, its directors, officers, agents, servants and employees of and from any and all claims, demands, actions, causes of action, obligations, and liabilities of every kind and character whatsoever, in law or equity, which Vendor may have or assert against NWE, its directors, officers, agents, servants, and employees.

11.3.2. Limitation of Liability

11.3.2.1. NWE shall not be liable to Vendor for (i) damages in excess of the amount paid by NWE under this Agreement; or (ii) any indirect, incidental, special, exemplary or punitive damages arising from or related to this Agreement, its performance, enforcement, breach or termination, such as, but not limited to, loss of revenue, anticipated profits, or business.

11.3.2.2. Vendor shall not be liable to NWE for any indirect, incidental, special, exemplary or punitive damages arising from or related to this Agreement, its performance, enforcement, breach or termination, such as, but not limited to, loss of revenue, anticipated profits, or business.

11.4. Right to Repair

11.4.1. NWE shall have the right to repair any and all defects if Vendor has previously authorized such action or, if in NWE's reasonable commercial judgment, Vendor is unable or unwilling to affect the repair. If NWE elects to repair, it may deduct from any amounts owing to Vendor the direct and incidental costs incurred in remedying the defect. NWE's action to repair or cure any defect shall not relieve Vendor of any obligations under this Agreement, the applicable Service Order, or any provision of the Uniform Commercial Code.

12. Insurance

Without limiting any of Vendor's obligations hereunder, Vendor shall carry insurance coverage in accordance with the requirements stated in Exhibit X, Insurance Requirements of NorthWestern Energy, attached hereto and incorporated herein by reference. Before commencing any of the Services, Vendor shall deliver to NWE's Contract Administration Department in Butte, Montana, an insurance certificate evidencing the required coverage, limits and additional insured provisions as required by Exhibit Y, attached hereto and incorporated herein by reference.

13. Independent Contractor

It is specifically agreed and acknowledged that in the performance of the Services, Vendor is an independent contractor and not the employee, agent or representative of NWE.

14. Labor Relations

- 14.1. Vendor shall comply with all applicable federal, state and local statutes, regulations, and ordinances, concerning the employment of employees, working conditions, and payment of wages and benefits.
- 14.2. During the course of the work should labor problems of any type materialize which cause the construction to cease for any period of time, Vendor specifically agrees to take immediate steps, at its own expense and without expectation of reimbursement from NWE, to alleviate or resolve all labor problems which arise. Vendor shall bear all costs of any legal action and provide immediate relief so as to permit the work to proceed to completion in the time frame established between the parties to the Agreement, at no additional cost to NWE.
- 14.3. Vendor shall indemnify and hold harmless NWE from any and all claims, demands, costs, expenses, damages and liabilities arising out of, resulting from or occurring in connection with labor problems or the delays associated with these problems.

15. Laws and Regulations

- 15.1. Vendor shall comply fully with all applicable Workers' Compensation requirements and all other applicable federal, state and local laws, regulations, and ordinances.
- 15.2. Vendor shall strictly comply with all applicable environmental laws and regulations.
- 15.3. Vendor shall be responsible for payment of all taxes, assessments, and contributions, whether local, state, or federal in nature, in connection with the performance of the Services, including without limitation, all sales and use tax with respect to labor and materials used to provide the Services, and all social security, Medicare and Medicaid, unemployment insurance, and workers' compensation, and other payroll taxes required to be paid with respect to employees, representatives and direct and indirect agents of Vendor. Vendor shall hold NWE harmless from any and all liability on account of any such taxes or assessments.
- 15.4. Vendor shall comply with the Americans With Disabilities Act and all Non-Discrimination, Affirmative Action and Utilization of Minority and Small Business Enterprises statutes, regulations, and ordinances.

16. Representative

NWE's Representative for the purposes of this Agreement shall be Bill Rhoads or such other person as NWE shall designate in the Service Release Purchase Order or in another writing. Whenever approval or authorization from or communication or submission to NWE is required by this Agreement or the Service Release Purchase Order, such communication or submission shall be directed to NWE's Representative and approvals or authorizations shall be issued only by such representative.

17. Access to Services; Use of Completed Portions

- 17.1. NWE at all times shall have access to the Services whenever it is in progress, provided NWE shall not interfere with nor direct the Services. Any questions involving scope, method or performance of the Services shall be reviewed and resolved with NWE Representative. All field data and notes are the property of NWE.

17.2. NWE shall have the right to take possession of or use any fully completed portions of any work notwithstanding that the time for completing the entire project or such portion may not have expired; but taking such possession and use shall not be deemed an acceptance of any work not fully completed in accordance with the Agreement documents.

18. Safety

18.1. NWE considers the safety and welfare of all persons, and the preservation of property, paramount in the conduct of business.

18.2. Vendor shall comply with the Occupational Safety and Health Act of 1970, as amended, the Montana Safety Culture Act of 1993, as amended, and all applicable laws, ordinances, rules and regulations bearing on the safety of persons or property or their protection from damage, injury or loss.

18.3. Vendor shall take all necessary precautions in performing the work hereunder to prevent injury to persons or damage to property.

18.4. Vendor's observation or monitoring portions of the work performed under construction contracts shall not relieve construction contractor(s) from responsibility for performing work in accordance with applicable contract documents. Except as otherwise provided in this Agreement and/or the Description of Services or written Release Purchase Order, Vendor shall not control or have charge of, and shall not be responsible for, construction means, methods, techniques, sequences, procedures of construction, health or safety programs or precautions connected with the work and shall not manage, supervise, control or have charge of construction. Vendor shall not be responsible for the acts or omissions of construction contractor(s) or other parties of the project, provided this does not limit the warranties, indemnifications and obligations of the Vendor arising under this Agreement.

19. Intellectual Property

Whenever Vendor is required to use any design, device, material, or process covered by letters, patent, trademark, or copyright, Vendor shall indemnify and save harmless NWE from any and all claims for infringement by reason of the use of such protected design, device, material or process in connection with the Agreement and shall indemnify NWE for any costs, expenses and damages which it may be obliged to pay by reason of such infringement at any time during the prosecution or after the completion of the Services; provided, however, that Vendor has no such liability for equipment, design, material or processes furnished by NWE.

20. Survival

Each of the terms, conditions and obligations set forth in Sections 2, 6.2, 8, 9, 11, 19 and 21, and each of Vendor's indemnification and warranty obligations set forth in this Agreement shall survive the termination or expiration of this Agreement for the maximum period allowed under applicable law.

21. Examination of Vendor's Records

21.1. Upon reasonable notice, NWE or its representative shall have the right to examine any books, records, or other documents of Vendor directly relating to the performance of the Services and the costs thereof. Such examination will occur

during normal business hours; however, should an emergency situation exist, immediate access will be granted.

- 21.2. Vendor shall cooperate in this effort and make employees, records and facilities reasonably available. NWE reserves the right to make extracts or copies of Vendor records, as NWE, in its sole discretion, deems necessary or desirable and at NWE's sole cost and expense.

22. Assignment

Vendor shall not assign this Agreement in whole or in part without the prior written consent of NWE, which consent shall not be unreasonably withheld.

23. Disputes, Forum and Applicable Law

- 23.1. This Agreement shall be governed in all respects by the laws of the State of Montana.

23.2. Dispute Resolution

23.2.1. When a Dispute has arisen and negotiations between the parties have reached an impasse, either party may give the other party written notice of the Dispute. In the event such notice is given, the parties shall attempt to resolve the Dispute promptly by negotiations between representatives who have authority to settle the controversy and who are at a higher level of management than the persons with direct responsibility for the matter. Within ten (10) days after delivery of the notice, the receiving party shall submit to the other a written response. Thereafter, the representatives shall confer in person or by telephone promptly to attempt to resolve the dispute. All reasonable requests for information made by one party to the other will be honored.

23.2.2. If the dispute has not been resolved by negotiation between the representatives within thirty (30) days of the notice, or if the parties have failed to confer within twenty (20) days after delivery of the notice, the parties shall endeavor to settle the dispute by non-binding mediation. The mediation shall consist of both parties agreeing to one neutral mediator, providing the mediator with simultaneous, non-shared written position statements, and day long mediation at the chosen mediator's desired location.

- 23.3. Should the mediation not lead to settlement of the dispute, then either party may proceed to a court of competent jurisdiction.

23.4. All negotiations and proceedings pursuant to this process are confidential and shall be treated as compromise and settlement negotiations for purposes of applicable rules of evidence and any additional confidentiality protections provided by applicable law.

23.5. Any action or proceeding seeking to enforce any provision of, or based on any right arising out of, this Agreement may be brought against either of the parties in the courts of the State of Montana, or, if it has or can acquire jurisdiction, in the United States District Court for the District of Montana and each of the parties consents to

the jurisdiction of such courts (and of the appropriate appellate courts) in any such action or proceeding and waives any objection to venue laid therein. Process in any action or proceeding referred to in the preceding sentence may be served on either party anywhere in the world.

24. Notices

Notices required or permitted to be given under this Agreement will be in writing and deemed to be properly given if (a) delivered in person, (b) sent by facsimile with confirmation, (c) deposited in the United States mail with first class postage prepaid certified mail, return receipt requested, or (d) delivered by private, prepaid courier and addressed to the appropriate Party Representative at the address set forth below:

Vendor

HDR Engineering, Inc.
440 S. Church St., Suite 1000
Charlotte, NC 28202
Phone: 702-248-3686
Fax: 703-338-6760
Attn: Rick Miller

NWE

NorthWestern Energy
40 E. Broadway St.
Butte, MT 59701
Phone: 406-497-3496
Attn: Bill Rhoads

25. Subcontractors

Vendor may employ subcontractors to perform any work hereunder only with the prior written consent of NWE. Vendor shall be as fully responsible for the acts or omissions of any subcontractor as it is for its own acts or omissions.

26. Headings

The headings used in this Agreement are for convenience only and shall not be construed as a part of the Agreement or as a limitation on the scope of the particular paragraphs to which they refer.

27. Waiver

A waiver by NWE of any default or breach by Vendor of any covenants, terms or conditions of this Agreement shall not limit NWE's right to enforce such covenants, terms or conditions or to pursue NWE's rights in the event of any subsequent default or breach.

28. Severability

If any portion of this Agreement shall be held to be void or unenforceable, the balance thereof shall continue to be effective.

29. Binding Effect

This Agreement shall be binding upon and shall inure to the benefit of the heirs, legal representatives, successors and assigns of the parties.

30. Amendments

This Agreement shall not be modified, amended or changed in any respect except by a written document signed by all parties.

31. Counterparts; Copies

This Agreement may be executed in counterparts, which together shall constitute one instrument. Copies of this fully executed instrument shall have the same force and effect as the original.

32. No Third Party Beneficiary

This Agreement is for the exclusive benefit of the parties and shall not constitute a third party beneficiary agreement and shall not be relied upon or enforced by a third party.

33. Authority

Each party represents that it has full power and authority to enter into and perform this Agreement and the person signing this Agreement on behalf of each party has been properly authorized and empowered to sign this Agreement.

34. Integration

This Agreement constitutes the entire agreement of the parties. Covenants or representations not contained or incorporated therein shall not be binding upon the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement (reference NWE Contract #CLM0003153) to be executed in duplicate the day and year first above written.

**NorthWestern Corportation d/b/a/
NorthWestern Energy
(NWE)**

**HDR Engineering, Inc.
(Vendor)**

By: _____

By: _____

Print Name: _____

Print Name _____

Title: _____

Title: _____

Date: _____

Date _____

Exhibit A

to the
Contract Between
NorthWestern Energy
And
HDR Engineering, Inc.

Description of Services

1. Review hydro regulatory filing, including exhibits by NWE
 - a. Focus on Rhoads testimony including exhibits to gain an understanding of due diligence associated with engineering assumptions including the estimate of longevity of assets, capital and expense estimates, dam safety, and the Owner's Dam Safety Program.
 - b. Review data requests and NWE responses.
2. Review MPSC engineering consultant's work (Essex), and participate in NWE, Essex, and MPSC calls or meetings. Participation should focus on clarification of points Essex is presenting.
 - a. Present a peer review of the Essex report.

The following tasks may be initiated at a later date:

3. Develop rebuttal testimony on issues as necessary.
 - a. Rebuttal testimony will require HDR as a witness throughout proceeding
4. Evaluate reasonableness of NWE assumed capital investment assumptions.
5. Evaluate reasonableness of NWE assumed expense assumptions.
6. Evaluate remaining life of assets assuming reasonable capital investment.

EXHIBIT X
Insurance Requirements of NorthWestern Corporation
d/b/a NorthWestern Energy

1. Prior to commencement of performance under this Agreement, Vendor shall secure and maintain all insurance required as evidenced by Exhibit Y (enclosed herein).
2. Vendor shall maintain in effect at all times during the performance of the work, insurance in accordance with the applicable laws relating to workers' compensation and employers' liability insurance, regardless of whether such coverage or insurance is mandatory or merely elective under the law.
3. Insurance coverage and limits shall be at a level deemed appropriate by Company (as shown on Exhibit Y, enclosed herein) for the risks associated with the project contemplated by this Agreement. Required insurance coverages are to be purchased at Vendor's own expense.
4. If the scope of work is significantly expanded, the Company reserves the right to increase the required coverage or require additional endorsements or policies of insurance.
5. Vendor shall notify the Company of any erosion of aggregate limits under any of the insurance policies, and if requested, purchase additional limits of coverage as may be deemed by the Company to satisfy Vendor's obligations under this Agreement.
6. Vendor shall maintain such insurance in full force and effect at all times until:
 - 6.1. all the Vendor's obligations under this Agreement have been fully performed, all of the work has been accepted by NorthWestern Corporation, and all operations by the Vendor and its subcontractors and suppliers (including but not limited to removal of equipment and other property) on or about the site of the work have been concluded;
 - 6.2. in the instance of completed operations and products liability coverage, until the expiration of one (1) year after all Vendor's obligations under this Agreement have been fully performed; and
 - 6.3. in the instance of professional liability coverage, two (2) years from project completion or three (3) years from acceptance of the services.
7. Vendor is obligated to ensure that any policies of insurance that Vendor carries as insurance against loss of or damage to Vendor's, subcontractors' and/or suppliers' property (including, but not limited to, tools, equipment, vehicles, watercraft and aircraft) or against liability for property damage or bodily injury (including death) shall:
 - 7.1. Be placed with such insurers having an A.M. Best rating of A-VII or better (not applicable to Professional Liability).
 - 7.2. With the exception of workers' compensation and employers' liability
 - 7.2.1. be endorsed to name NorthWestern Corporation as an additional insured with respect to any liabilities assumed under this Agreement; and

- 7.2.2. apply severally and not collectively to each insured against whom claim is made or suit is brought, except that the inclusion of more than one insured shall not operate to increase the insurance company's limits of liability as set forth in the insurance policy.
 - 7.3. Include within automobile coverage(s), owned, non-owned, hired and borrowed vehicles.
 - 7.4. Be primary insurance with respect to the interest of the Company as additional insured and any insurance maintained by Company is excess and not contributory insurance with the insurance required hereunder.
 - 7.5. Include a waiver of the insurer's right of subrogation against NorthWestern Corporation. Vendor also hereby waives all rights of subrogation against NorthWestern Corporation.
 - 7.6. Provide that the policies will not be canceled or their limits or coverage reduced or restricted without endeavoring to provide at least thirty (30) days prior written notice to the Contract Administration Department, NorthWestern Energy, 40 East Broadway, Butte, Montana 59701.
 - 7.7. Company will look to Vendor and thereby Vendor's insurer for coverage for claims arising from the negligent acts or omissions of Vendor or any subcontractor/supplier of Vendor's choosing.
8. Vendor shall instruct and require its insurance agent/broker to complete and return an insurance certificate, in an ACORD form, as evidence that insurance policies providing the required coverage, limits and additional insured provisions as outlined within this Exhibit X are in full force and effect. Vendor shall be fully responsible for all deductibles and self insured retentions related to insurance provided herein. Prior to commencement of work, the completed insurance certificate form is to be returned to the Contract Administration Department, NorthWestern Energy, 40 East Broadway, Butte, Montana 59701.
 9. The insurance requirements of this Agreement and acceptability to the Company of insurers and insurance to be maintained by Vendor, its subcontractors/suppliers, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the insured under this Agreement. Vendor is fully and solely responsible for the level of insurance coverage it requires of its subcontractors and suppliers. Company will look to Vendor and thereby Vendor's insurer for coverage for claims arising from the negligent acts or omissions of Vendor or any subcontractor/supplier of Vendor's choosing.



Agreement #:CLM0003153

EXHIBIT Y
MINIMUM GENERAL REQUIREMENTS

On an ACORD Form, please provide evidence of the following coverages:

\$1,000,000 General Liability
\$1,000,000 Automobile Liability
\$1,000,000 Professional Liability
\$5,000,000 Excess Liability

Statutory Workers' Compensation
Employers' Liability - \$500,000 each accident; \$500,000 disease - policy limit; and
\$500,000 disease – each employee

On the certificate, NorthWestern Corporation needs to be named as an additional insured with respect to automobile and general liability coverage. We will not accept the use of the following Additional Insured Endorsement - CG 2426 – Amendment of Insured Contract Definition.

PSC-281e
 Privilege Log
 Work Product

Document ID	Author	Recipients	Subject	Privilege	Date
2047717	Rick Miller	Al Brogan Cc: William Rhoads, Rick Miller	Email chain discussing discovery issues	Work Product	4/10/2014
2047719	Rick Miller	John VanDaveer, William Rhoads, Al Brogan Cc: Gary Wiseman	Email chain with attachment discussing details of an issue in the docket	Work Product	4/10/2014
2047720	Rick Miller	Al Brogan	Email discussing discovery issues	Work Product	4/10/2014
2047725	Rick Miller	Al Brogan	Email chain regarding testimony development	Work Product	4/18/2014
2047727	Rick Miller	Al Brogan Cc: Colleen Harper, Joe Schwartzenberger, Roberta Stauffer	Email chain regarding HDR opinion letter and testimony with attachment	Work Product	4/17/ 2014
2047728	Rick Miller	Al Brogan	Email chain regarding HDR 20 year CapEx file with attachment	Work Product	4/17/ 2014
2047729	Rick Miller	Al Brogan Cc: Rick Miller	Email chain regarding HDR opinion letter and testimony with attachment	Work Product	4/17/ 2014
2047731	Rick Miller	Al Brogan Cc: Colleen Harper, Joe Schwartzenberger, Roberta Stauffer, Rick Miller	Email chain regarding HDR opinion letter and testimony with two attachments	Work Product	4/17/ 2014

Document ID	Author	Recipients	Subject	Privilege	Date
2047732	Rick Miller	Al Brogan Cc: Rick Miller	Email regarding HDR opinion letter and 20-year CapEx spreadsheet with two attachments	Work Product	4/16/ 2014
2047733	Rick Miller	Al Brogan Cc: Heather Grahame, Colleen Harper, John Hines, Pat Corcoran, Rick Miller, Ed Luttrell	Email chain regarding HDR update on testimony with attachment	Work Product	4/15/2014
2047734	Rick Miller	Al Brogan Cc: Rick Miller	HDR update on testimony with attachment	Work Product	4/14/2014
2047737	Rick Miller	Al Brogan, Mary Gail Sullivan, William Rhoads, John VanDaveer Cc: Rick Miller, Melinda Lingerfelt	Email chain regarding rebuttal testimony with attachment	Work Product	5/1/2014
2047738	Rick Miller	Al Brogan	Email chain regarding rebuttal testimony	Work Product	5/1/2014
2047739	Rick Miller	Al Brogan	Email chain regarding rebuttal testimony	Work Product	4/29/2014
2047779	Rick Miller	Al Brogan, Mary Gail Sullivan, William Rhoads, John VanDaveer Cc: Rick Miller, Melinda Lingerfelt	Email chain regarding rebuttal testimony with attachment	Work Product	5/1/2014
2047811	Rick Miller	Al Brogan, Mary Gail Sullivan, William Rhoads, Colleen Harper cc: John VanDaveer, Rick Miller	Email chain regarding rebuttal testimony with attachment	Work Product	5/8/2014

Document ID	Author	Recipients	Subject	Privilege	Date
2047892	Rick Miller	Al Brogan, William Rhoads, John VanDaveer, Gary Wiseman Cc: Rick Miller	Email regarding specific issue in the docket with two attachments	Work Product	4/10/2014
2047789	Al Brogan	Rick Miller Cc: Heather Grahame, Colleen Harper, John Hines, Pat Corcoran, Ed Luttrell	Email chain regarding HDR update on testimony with attachment	Work Product	4/17/2014
2047791	Al Brogan	Rick Miller	Email chain discussing discovery issues with attachment	Work Product	4/10/2014
2047800	Al Brogan	Rick Miller	Email chain regarding HDR opinion letter and testimony	Work Product	4/18/2014
2047803	Al Brogan	Rick Miller Cc: Heather Grahame, Colleen Harper, John Hines, Pat Corcoran	Email chain regarding HDR update on testimony with attachment	Work Product	4/15/2014
2047805	Al Brogan	Rick Miller, William Rhoads, Colleen Harper, Roberta Stauffer	Email chain regarding rebuttal testimony	Work Product	4/29/2014
HDR001	Rick Miller	Gwendolyn Vashro, John Devine Cc: Heather Grahame, William Rhoads, Rick Miller	Email chain discussing discovery issues with attachments	Work Product	1/31/2014
HDR002	Rick Miller	William Rhoads Cc: Rick Miller	Email chain discussing discovery issues	Work Product	2/4/2014
HDR003	Rick Miller	William Rhoads	Email chain discussing discovery issues	Work Product	2/6/2014

Document ID	Author	Recipients	Subject	Privilege	Date
HDR004	Rick Miller	William Rhoads Cc: Ed Luttrell	Email discussing discovery	Work Product	2/07/2014
HDR005	Rick Miller	William Rhoads Cc: Ed Luttrell, Rick Miller	Email chain discussing discovery issues	Work Product	2/09/2014
HDR006	Rick Miller	William Rhoads	Email chain discussing discovery issues with attachment	Work Product	2/27/2014
HDR007	Rick Miller	William Rhoads	Email chain discussing discovery issues	Work Product	3/12/2014
HDR008	Rick Miller	William Rhoads Cc: Melinda Lingerfelt, Kevin Snyder	Email chain discussing discovery issues	Work Product	3/12/2014
HDR009	Rick Miller	Al Brogan Cc: William Rhoads	Email discussing an issue in the docket	Work Product	4/8/2014
HDR010	Rick Miller	John VanDaveer	Email chain discussing discovery issues	Work Product	4/10/2014
HDR011	Rick Miller	William Rhoads, John Devine, Ed Luttrell	Email chain discussing intervenor testimony	Work Product	3/29/2014
HDR012	Rick Miller	William Rhoads, John Devine, Ed Luttrell Cc: Rick Miller	Email chain discussing intervenor testimony	Work Product	3/29/2014
HDR013	Rick Miller	William Rhoads, John Devine, Ed Luttrell	Email chain discussing intervenor testimony	Work Product	3/29/2014
HDR014	Rick Miller	Gary Wiseman, Alex Morrison, Adam Jones Cc: John VanDaveer, William Rhoads, Al Brogan	Email chain discussing the details of an issue in the docket	Work Product	4/10/2014

Document ID	Author	Recipients	Subject	Privilege	Date
HDR015	Rick Miller	John VanDaveer, William Rhoads, Gary Wiseman, Al Brogan Cc: Rick Miller	Email chain discussing an issue in the docket with attachments	Work Product	4/10/2014
HDR016	Rick Miller	John VanDaveer, William Rhoads, Al Brogan Cc: Gary Wiseman	Email chain discussing an issue in the docket with attachment	Work Product	4/10/2014
HDR017	Rick Miller	John VanDaveer Cc: David Light, Rick Miller	Email chain discussing HDR CapEx forecast with attachment	Work Product	4/14/2014
HDR018	Rick Miller	William Rhoads, John VanDaveer Cc: Rick Miller	Email discussing HDR opinion letter and testimony with attachment	Work Product	4/17/2014
HDR019	Rick Miller	William Rhoads	Email chain discussing HDR opinion letter and testimony	Work Product	4/17/2014
HDR020	Rick Miller	John VanDaveer	Email chain discussing HDR CapEx forecast and testimony	Work Product	4/17/2014
HDR021	Rick Miller	William Rhoads, Colleen Harper Cc: Rick Miller	Email chain discussing intervenor testimony	Work Product	4/21/2014
HDR022	Rick Miller	William Rhoads, Colleen Harper Cc: Al Brogan, Joseph Schwartzenberger, Roberta Stauffer	Email chain discussing intervenor and rebuttal testimony	Work Product	4/21/2014
HDR023	Rick Miller	John VanDaveer Cc: David Light, Rick Miller	Email regarding PPLM Hydro assets	Work Product	4/14/2014
HDR024	Rick Miller	William Rhoads, John VanDaveer Cc: Rick Miller	Email with attachment regarding HDR	Work Product	4/17/2014

Document ID	Author	Recipients	Subject	Privilege	Date
			opinion letter		
HDR025	Rick Miller	William Rhoads	Email chain regarding HDR opinion letter	Work Product	4/17/2014
HDR026	Rick Miller	John VanDaveer	Email chain regarding PPLM Hydro assets	Work Product	4/17/2014
HDR027	Rick Miller	William Rhoads, Colleen Harper Cc: Rick Miller	Email chain regarding review of testimony	Work Product	4/21/2014
HDR028	Rick Miller	William Rhoads, Colleen Harper Cc: Al Brogan, Joe Schwarzenberger, Roberta Stauffer	Email chain regarding testimony development	Work Product	4/21/2014
HDR029	Rick Miller	William Rhoads	Email chain regarding testimony development	Work Product	4/23/2014
HDR030	Rick Miller	William Rhoads, Colleen Harper Cc: Al Brogan, John VanDaveer, Mary Gail Sullivan, Gary Wiseman	Email chain with attachment regarding rebuttal testimony	Work Product	4/25/2014
HDR031	Rick Miller	William Rhoads	Email chain regarding rebuttal testimony	Work Product	4/27/2014
HDR032	Rick Miller	William Rhoads Cc: Mary Gail Sullivan	Email chain regarding rebuttal testimony	Work Product	4/27/2014
HDR033	Rick Miller	Elaine Vesco	Email chain regarding rebuttal testimony	Work Product	4/29/2014
HDR034	Rick Miller	William Rhoads	Email chain regarding testimony development	Work Product	4/30/2014
HDR035	Rick Miller	William Rhoads	Email chain regarding testimony	Work Product	4/30/2014

Document ID	Author	Recipients	Subject	Privilege	Date
			development		
HDR036	Rick Miller	Mary Gail Sullivan Cc: William Rhoads, Rick Miller	Email chain with attachment regarding testimony review	Work Product	4/30/2014
HDR037	Rick Miller	Mary Gail Sullivan, William Rhoads	Email chain regarding testimony development	Work Product	5/1/2014
HDR038	Rick Miller	William Rhoads	Email chain regarding discovery	Work Product	5/2/2014
HDR039	Rick Miller	William Rhoads	Email chain regarding testimony development	Work Product	5/2/2014
HDR040	Rick Miller	Mary Gail Sullivan	Email chain regarding testimony review	Work Product	5/2/2014

NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase

Public Service Commission (PSC)
Set 13 (269-304)

Data Requests served May 2, 2014

PSC-282

Regarding: 20-Year Cap-Ex Budget
Witness: VanDaveer

In your testimony (JCV-5:14-17), you argue that specific items have been built in to a 20-year capital expenditures budget; however, in its presentation in Ex. JMS-1, this budget is so generic that it contains no specifics, other than to escalate a number, \$8.5 million, by 2.5% annually. It shows no variation year-to-year other than to escalate for this inflationary factor. How is this generic, non-itemized budget reconcilable with your claim that highly specific, one-off capital projects have been built into it?

RESPONSE:

See Attachment which defines the remaining major investment upgrades needed on the system that I refer to in your request. The excel spreadsheet identifies the projects, type of upgrade investments, cost estimates and schedule. Remaining turbine-generator upgrades are designated by blue shading for the associated developments. The balance of the system's controls upgrade is designated by yellow shading for the associated developments. Governor and exciter replacements for the projects remaining to date for this work are indicated by the green shading. The investment upgrades were also generally described in NorthWestern's response to Data Request PSC-018b.

The full context of the credibility of the 20-year CapEx budget has been described in my testimony for this docket. The executed historical investment, specific 2013-2017 capital workplan continuation, the remaining 15-year budget, and the system's regulatory status were all evaluated to develop the 20-year CapEx forecast. The past system improvements define the majority and specific components of the hydro generation units that will not require capital expenditure during this period. The 2013-2017 detailed PPLM forecast, provided in response to Data Request PSC-018b, defines the specific plans to further system improvements not addressed to date. The balance of the 20-year forecast includes the remaining system developments' generating units and support systems to be addressed for upgrade work. The historical investment expenditures were provided in NorthWestern's responses to Data Requests MCC-055 and MCC-057.

An evaluation of the 2008-2012 CapEx implemented projects less the one-time unique expenditures that have been described in previous testimony and data responses results in an average annual total of \$10.7 million for the content of investment that was accomplished. This analysis combined with the 2013-2017 detailed PPLM CapEx work plan supports the fact that the majority of the hydroelectric system will have been upgraded prior to 2018 and will not require annual investment to the actual average levels of the 2008-2012 period or 2013-2017.

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Data Requests served May 2, 2014

PSC-282 cont'd

The PPLM and the NorthWestern forecast beyond 2017 are consistent with this conclusion. The evaluations in the testimonies provided by CB&I and HDR Engineering, Inc. confirm the NorthWestern CapEx forecast.

Additionally, the actual mix of expenditures specifically described by the annual 2008-2012 workplan and 2013-2017 forecast identify an integration of projects covering unit upgrades, auxiliary systems upgrades, structure upgrades, sustenance projects and proactive work that can be adequately supported by the NorthWestern forecast beyond 2017.

All capital projects in a business unit's annual workplan are not completely sustenance (required) projects. The assumption that an operation "needs" all annual forecasted capital assumes that the operation is managing a reactive business plan. NorthWestern develops and manages proactive business plans with integrated capital workplans. The most recent major testament to this is the Distribution System Infrastructure Project currently in progress to proactively upgrade the NorthWestern gas and electric infrastructure across our entire service territory. PPLM has managed their capital investment plans similarly as discussed throughout this docket with reference to their past and forecast investments through 2017.

A diversified annual capital plan generally incorporates a combination of sustenance, economic, proactive and performance improvement initiatives similar to the PPLM capital work plans. This integrated strategy improves safe performance and results in economic and operational benefit for the Company and its customers.

A diversified annual workplan provides the opportunity to adjust within the workplan for a reasonable level of unanticipated events without materially affecting overall operational performance. Reprioritization and schedule adjustment for discretionary, but important, workplan items are, generally, the only influence to address a reasonable level of unplanned issues.

The NorthWestern CapEx forecast was developed on the above evaluation that is based on specifics, is reasonable and independently verified, and is not generic.

Hydro Electric System
 Capital Forecast Summary (Millions)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Black Eagle	0.19	0.54	0.09	0.05	0.41	0.36	1.85	1.89	2.10	0.36	0.29	0.29	0.47	0.63	0.65	0.67	0.68	0.70	0.72	0.73	0.73	0.75	0.77	0.79
Bainbow	2.76	0.40	1.00	0.93	0.82	0.56	0.44	0.68	0.81	0.66	0.81	0.66	1.06	1.43	1.47	1.51	1.54	1.58	1.62	1.66	1.70	1.74	1.78	1.79
Cochrane	0.44	0.25	0.05	1.00	0.80	0.70	0.48	0.37	0.58	0.70	1.17	1.27	0.91	1.23	1.26	1.29	1.32	1.35	1.39	1.42	1.46	1.49	1.53	1.53
Ryan	1.08	1.25	1.00	1.25	0.54	1.78	0.57	1.34	1.60	0.83	0.67	0.67	1.08	1.45	1.49	1.53	1.56	1.60	1.64	1.68	1.73	1.77	1.81	1.81
Mercury	5.11	0.20	0.50	0.20	0.73	0.64	0.44	0.34	0.53	0.64	0.52	0.52	0.83	1.12	1.15	1.18	1.21	1.24	1.27	1.30	1.34	1.37	1.40	1.40
Hessner	0.00	2.12	1.05	1.10	1.73	2.00	2.05	1.97	1.96	0.33	0.49	0.32	0.32	0.70	0.71	0.73	0.75	0.77	0.79	0.81	0.83	0.85	0.87	0.87
Madison	0.04	1.31	0.31	0.15	0.66	0.25	1.47	1.48	1.60	1.69	0.20	0.20	0.32	0.43	0.44	0.45	0.46	0.47	0.49	0.50	0.51	0.51	0.52	0.54
Hoboy	0.28	1.57	1.44	1.65	0.75	0.74	0.65	0.45	0.54	0.54	2.73	2.83	1.25	1.14	1.17	1.20	1.23	1.26	1.30	1.33	1.36	1.39	1.43	1.43
Thompson Falls	1.71	0.35	0.54	1.65	3.07	1.07	0.95	0.65	0.78	0.94	0.76	0.77	1.23	1.66	1.70	1.74	1.78	1.83	1.87	1.92	1.97	2.02	2.07	2.07
Holpan	3.42	3.91	4.30	3.00	3.10	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Myrtle	0.04	0.78	0.33	0.47	0.28	0.25	0.17	0.13	0.20	0.24	0.21	0.20	0.32	0.43	0.44	0.45	0.46	0.47	0.49	0.50	0.51	0.52	0.54	0.54
East	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand Total	15.65	12.83	9.96	9.19	11.99	8.50	8.71	8.93	9.15	9.38	9.62	9.87	10.10	10.37	10.62	10.88	11.17	11.43	11.72	12.01	12.31	12.62	12.93	13.26

Turbine-Generator Upgrades
 Controls Upgrades
 Governor Exciter Upgrades

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-283

Regarding: Experience with Dams While at PPL
Witness: VanDaveer

- a. Please describe your familiarity with the relicensing and Part 12 processes that PPL engaged in during your time there.
- b. Please describe your role in deciding on and planning the Rainbow Dam Redevelopment and Renovation project, including a description of why you understood it to have been undertaken and how far out it was scheduled.
- c. Identify the individuals at PPL responsible for making major capital decisions, such as the one described in (b), during your time there.
- d. To your knowledge, did PPL attempt to sell the Hydros during the time in which you were employed there?
- e. If the answer to (d) is yes, please describe the circumstances and whether you know of any party who conducted due diligence regarding a possible purchase. Please identify such part(ies).

RESPONSE:

- a. I was directly engaged in the Federal Energy Regulatory Commission Part 12 Independent Consultant Inspection process as Manager of the PPLM Hydroelectric Operations, Engineering and License Management business functions. This responsibility included oversight of the FERC licenses the projects operate under.
- b. I was engaged in the development and construction of the Thompson Falls Unit No.7 expansion project during the time that the 2188 Madison-Missouri license application was being developed that included the Rainbow redevelopment project. I was familiar with the general plan for the redevelopment as it was similar to the operational and economic benefits provided by the Thompson Falls project. I describe this in my rebuttal testimony provided in this docket. The original license application was filed in 1992 and contemplated the schedule for the Rainbow project to begin in 1996 and completed in 1997. The actual license was not issued until 2000 by the FERC.

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Data Requests served May 2, 2014

PSC-283 cont'd

- c. The employees primarily responsible for annual capital plan development were the business/operations unit direct supervisors. These employees submitted annual capital recommendations to the business unit Chief Operating Officer and Chief Financial Officer. These officers finalized their business unit annual capital plan with their supervisors and submitted the plan to the corporate officers. The corporate plan was then finalized by the executive officers in consultation with the business unit officers.
- d. No.
- e. N/A.

NorthWestern Energy
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Public Service Commission (PSC)
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Data Requests served May 2, 2014

PSC-284

Regarding: Independent Nature of CB&I's Work
Witness: Rhoads

- a. Please explain the sense in which Gary Wiseman conducted an "external independent evaluation" (JCV-3:20-21).
- b. In conducting his due diligence review for NWE, did Gary Wiseman work together with NWE employees?
- c. How many conversations and exchanges of letters or emails did NWE and its employees or agents have with Shaw/CB&I's employees and agents during its work?
- d. How much has CB&I now been compensated for its work in this matter?
- e. Please provide any written communications or records of communications between NWE and Shaw/CB&I where the latter's evaluation of the Hydros is discussed.

RESPONSE:

- a. CB&I is a publicly-traded company that acquired The Shaw Group in 2013. CB&I offers engineering and consulting services, among other activities. NorthWestern entered into an agreement with Shaw/CB&I for services. The agreement, which includes customary confidentiality provisions, establishes the scope of services that Shaw/CB&I is to provide to NorthWestern. Gary Wiseman is an employee of CB&I and led CB&I's team for this project. Mr. Wiseman and associated Shaw/CB&I personnel conducted an external independent evaluation through review and analysis of the civil, mechanical, electrical, environmental, and cost information contained in the data room, review of information in the public domain, discussions with PPLM personnel, discussions with NorthWestern personnel with historic knowledge and experience with the hydro system, and from other sources as cited in the Shaw Independent Engineer's Report dated January 3, 2013. An Addendum to this report was issued on June 25, 2013. This Addendum was developed in a manner similar to that used to develop the original report. A Supplement was issued in a similar manner dated September 6, 2013 with the addition of site visits conducted to each of the facilities to further validate the observations and conclusions made in the original report and the Addendum dated June 25, 2013. These reports are contained as Exhibit __ (WTR-2) in the Rhoads Prefiled Direct Testimony.
- b. Yes.

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- c. NorthWestern personnel do not have a record of the number of conversations held between NorthWestern and Shaw/CB&I. Shaw/CB&I records indicate that 21 conversations were held between NorthWestern and Shaw/CB&I from June 18, 2013 through September 25, 2013. All letters are included in part e below.
- d. Copies of invoices were included as an attachment to MCC-070. From June 2013 through September 2013, \$78,778.64 dollars were spent for CB&I's effort. Total cost for the entire due diligence effort from October 2012 through September 2013 was \$162,088.20. These figures do not include costs for CB&I internal administrative support for CB&I's invoice and billing analysis.
- e. NorthWestern objected to this data request to the extent that it requested privileged material. Responsive e-mails between Shaw/CB&I and NorthWestern are attached. NorthWestern limits its response to those documents prepared after October 24, 2012 through the date the Purchase and Sale Agreement for the sale of the hydroelectric properties was signed on September 26, 2013. The responsive documents are those emails between NorthWestern and Shaw/CB&I where Shaw/CB&I's evaluation of the Hydros is discussed. Documents which (1) discuss logistics for meetings; (2) discuss access to the data room; (3) transmit data from PPL or UBS to Shaw/CB&I; or (4) have already been provided elsewhere in the docket are not included in this response. For example, the Shaw/CB&I Due Diligence Reports, which are provided as Exhibit__ (WTR-2) to the Prefiled Direct Testimony of William Rhoads are not included here. Please see the documents in the folder labeled "PSC-284e" on the CD attached to PSC-281.

Please note as well that certain of these documents are protected and will be provided on yellow paper to the Commission and the parties who have signed the appropriate non-disclosure agreements per Protective Order Nos. 7323e and 7323f. NorthWestern has also attached a privilege log detailing any documents or portions of documents withheld due to a claim of privilege.

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_284_00003927 - PSC_284_00003927	Email	6/17/2013	Redacted content prepared in anticipation of litigation re: Environmental	Rhoads, William T	Wiseman, Gary		Work Product
PSC_PRIV0001	Email	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail	Brown, Andy; Grahame, Heather; Hines, John; Stastny, Kristin; Vandaveer, John; Wiseman, Gary	Work Product
PSC_PRIV0002	Email	8/22/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Grahame, Heather	Opela, Nicole Hayworth; Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0003	Email string	2/19/2013	Material prepared in anticipation of litigation provided by H. Grahame re: environmental litigation	Wiseman, Gary	Grahame, Heather	Olson, Tim; Rhoads, William T; Sweeney, Timothy W; White, Madeline	Work Product
PSC_PRIV0004	Email	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Peoples, Doug; Sullivan, Mary Gail	Work Product
PSC_PRIV0005	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0006	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0007	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0008	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0010	Email	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0011	Email	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0013	Email string	9/1/2013	Material prepared in anticipation of litigation re: Environmental	Opela, Nicole Hayworth	Sullivan, Mary Gail	Rhoads, William T; Vandaveer, John; Wiseman, Gary	Work Product

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_PRIV0014	Email string	6/17/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0015	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product
PSC_PRIV0017	Email	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0018	Email string	6/17/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0019	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product
PSC_PRIV0021	Email string	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0022	Correspondence	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0023	Email string	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0024	Correspondence	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0025	Report	8/6/2013	Material prepared in anticipation of litigation re: FERC proceedings	Rhoads, William T	Asay, John P; Mullaney, Diane; Opela, Nicole Hayworth; Sullivan, Mary Gail; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0026	Email	8/22/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Grahame, Heather	Opela, Nicole Hayworth; Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0027	Email string	6/17/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0028	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product
PSC_PRIV0030	Email string	6/21/2013	Forwarding & commenting upon legal advice provided by outside counsel re: Kerr Dam	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Attorney / Client ;Work Product

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_PRIV0031	Email string	9/6/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0032	Email string	8/30/2013	Material prepared in anticipation of litigation re: FERC proceedings	Sullivan, Mary Gail	Opela, Nicole Hayworth; Rhoads, William T	Brown, Andy; Stastny, Kristin; Vandaveer, John; Wiseman, Gary	Attorney / Client ;Work Product
PSC_PRIV0033	Email string	8/30/2013	Material prepared in anticipation of litigation re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Attorney / Client
PSC_PRIV0034	Correspondence	8/30/2013	Material prepared in anticipation of litigation re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	PPL Joint Defense Privilege;Work Product
PSC_PRIV0035	Email string	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0036	Correspondence	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0037	Memorandum	8/29/2013	Providing legal advice re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0038	Email string	8/27/2013	Material prepared in anticipation of litigation re: Environmental	Opela, Nicole Hayworth	Rhoads, William T	Brown, Andy; Stastny, Kristin; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary	Attorney / Client ;Work Product
PSC_PRIV0039	Email	8/26/2013	Material prepared in anticipation of litigation re: Environmental	Sullivan, Mary Gail	Opela, Nicole Hayworth; Rhoads, William T; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0040	Email	8/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0041	Email string	9/6/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0042	Email string	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0043	Correspondence	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0044	Email string	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0045	Adobe PDF	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Wiseman, Gary; Opela, Nicole Hayworth; Vandaveer, John; Sullivan, Mary Gail		Work Product
PSC_PRIV0046	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re environmental litigation	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_PRIV0048	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0049	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0050	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0051	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0053	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product
PSC_PRIV0055	Email string	2/19/2013	Material prepared in anticipation of litigation provided by H. Grahame re: environmental litigation	Wiseman, Gary	Grahame, Heather	Olson, Tim; Rhoads, William T; Sweeney, Timothy W; White, Madeline	Work Product
PSC_PRIV0056	Email string	11/25/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0057	Spreadsheet	11/25/2012	Material prepared in anticipation of litigation re: environmental litigation	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0058	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0059	Email string	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0060	Correspondence	8/30/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Wiseman, Gary	Opela, Nicole Hayworth	Rhoads, William T; Sullivan, Mary Gail; Vandaveer, John	Work Product
PSC_PRIV0061	Email string	8/30/2013	Material prepared in anticipation of litigation re: environmental litigation	Rhoads, William T	Opela, Nicole Hayworth	Brown, Andy; Stastny, Kristin; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary	Attorney / Client ;Work Product
PSC_PRIV0062	Correspondence	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_PRIV0063	Memorandum	8/29/2013	Material prepared in anticipation of litigation provided by outside counsel re: FERC proceedings	Rhoads, William T	Opela, Nicole Hayworth; Sullivan, Mary Gail; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0064	Email string	6/17/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0065	Email string	6/18/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sullivan, Mary Gail; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Brown, Andy; Stastny, Kristin	Work Product
PSC_PRIV0067	Email string	6/20/2013	Material prepared in anticipation of litigation re: environmental litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Galpin, Dave; Opela, Nicole Hayworth; Sweeney, Timothy W	Work Product
PSC_PRIV0068	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Wiseman, Gary	Rhoads, William T	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W	Work Product
PSC_PRIV0069	Email string	6/21/2013	Material prepared in anticipation of litigation provided by outside counsel re: Mattson litigation	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Brown, Andy; Galpin, Dave; Opela, Nicole Hayworth; Peoples, Doug; Sweeney, Timothy W; Vandaveer, John	Work Product
PSC_PRIV0070	Email	6/27/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Wiseman, Gary	Begg, Ethan; Opela, Nicole Hayworth; Vandaveer, John	Work Product
PSC_PRIV0071	Email	6/27/2013	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Begg, Ethan	Rhoads, William T; Wiseman, Gary	Opela, Nicole Hayworth; Vandaveer, John	Work Product
PSC_PRIV0072	Email	2/15/2013	Material prepared in anticipation of litigation provided by H. Grahame re: environmental litigation	Grahame, Heather	Holden, Edward; Wiseman, Gary	Olson, Tim; Rhoads, William T	Attorney / Client ;Work Product
PSC_PRIV0073	Email string	2/19/2013	Material prepared in anticipation of litigation provided by H. Grahame re: environmental litigation	Wiseman, Gary	Grahame, Heather	Olson, Tim; Rhoads, William T; Sweeney, Timothy W; White, Madeline	Attorney / Client ;Work Product
PSC_PRIV0074	Email string	2/19/2013	Material prepared in anticipation of litigation provided by H. Grahame re: environmental litigation	Wiseman, Gary	Grahame, Heather	Olson, Tim; Rhoads, William T; Sweeney, Timothy W; White, Madeline	Work Product
PSC_PRIV0075	Email string	11/25/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0078	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0079	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product

Doc Number	Doc Type	Date	Description	From	To	CC	Priv Type
PSC_PRIV0080	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Attorney / Client ;Work Product
PSC_PRIV0081	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0082	Spreadsheet	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: environmental litigation	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0083	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0084	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Galpin, Dave	Barnes, Michael; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary	Begg, Ethan; Opela, Nicole Hayworth	Work Product
PSC_PRIV0085	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0086	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Thompson, William W	Barnes, Michael; Galpin, Dave; Holden, Edward; Rhoads, William T; Sweeney, Timothy W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0087	Email string	11/26/2012	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product
PSC_PRIV0088	Email string	41238	Material prepared in anticipation of litigation provided by outside counsel re: Environmental	Rhoads, William T	Barnes, Michael; Galpin, Dave; Holden, Edward; Sweeney, Timothy W; Thompson, William W; Vandaveer, John; Wiseman, Gary		Work Product

**NorthWestern Energy
Docket D2013.12.85
PPLM Hydro Assets Purchase**

**Public Service Commission (PSC)
Set 13 (269-304)**

Data Requests served May 2, 2014

PSC-285

**Regarding: Unspecified Capital Budget
Witness: VanDaveer**

- a. What do you mean by “unspecified capital budget” (JCV-5: 17)?
- b. What things does the unspecified capital budget include?

RESPONSE:

- a. Unspecified budget refers to the balance of the 20-year CapEx work plan that is not specifically identified for a development and for a specific project at that development versus the 2008-2012 actual PPLM capital work and 2013-2017 plan that identify particular projects by development.
- b. The “unspecified” capital work plan content is described in the response to Data Request PSC-282.

NorthWestern Energy
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Public Service Commission (PSC)
Set 13 (269-304)

Data Requests served May 2, 2014

PSC-286

Regarding: Criticism of Essex Evaluation
Witness: VanDaveer, part b / Miller, parts a, c, d

- a. You state that Essex “conveniently selected” the year 2021 to demonstrate that “the NorthWestern forecast is short based on its number exercise to complete annual sustenance capital work” (JCV:6:16-20). 2021’s capital budget is \$9.154 million (Ex_TEM-1). Is it NWE’s contention that this amount is sufficient for both the “sustenance CapEx” required and the “four developments for major capital projects” (JCV: 6:15, 6:17-18)?
- b. If the answer to (a) is yes, please explain, with reference to the specific costs of the four projects and expectations of needed sustenance cap-ex.
- c. Please explain why the cap-ex estimates found at Ex__RM-1, p. 24 for Rainbow, Cochrane, Morony, Holter, Thompson Falls, and Mystic decline from 2020 to 2021, before increasing again (to levels above 2020 spending) in 2022?
- d. For each of the facilities identified in (c), please describe what is driving the low figure (lower, in fact, than in any other year) for 2021?

RESPONSE:

- a. Yes.
- b. The specific costs of the four projects are defined in the Attachment provided in response to Data Request PSC-282. These four major upgrade expenditures and the balance of the \$9.15 million annual budget is sufficient for the year 2021. The Essex evaluation suggests that 1) all four of these projects need to occur in the same year and 2) the total NorthWestern forecast amount of \$9.15 million is sustenance (required) capital that needs to be expended in 2021. The response to Data Request PSC-282 explains the content of annual capital budgets/workplans and how they are reasonably managed.
- c. HDR’s CapEx Forecast incorporates a gradual increase of unspecified capital expenditure in a stepwise fashion that escalates every five years. HDR does not agree with the Commission’s interpretation of HDR’s CapEx Forecast that investments decline from 2020 to 2021 and then increase. The HDR Forecast shows a gradual increase from 2020 onward to 2022 for the facilities listed in the question.

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PSC-286 cont'd

The purpose of the HDR Forecast is to provide a roadmap over the next 20 years for anticipated project investments and to identify an average annual cash flow for business planning purposes. The HDR Forecast is not intended to be an exact accounting of future CapEx, but provides the direction of approximately how much money is expected to be needed, for what investment, and approximately when we believe that will occur. It is expected that there will be annual variability in the CapEx plan. Trying to refine the granularity of the CapEx Forecast for any given future year to determine the exact reason why some years may be higher or lower than others, and what those exact dollars will be, is an incorrect application of the CapEx Forecast.

- d. HDR's CapEx Forecast generally includes two planned outages per year to finalize the Hydros' modernization program. It is HDR's expectation that any individual project's final, agreed-upon scope of work has its own business case based upon available flow, specific unit condition, and redundancy of other units and common systems at a particular facility. If the specific business case justifies the scope of work assumed in the HDR Forecast, the project will be implemented in accordance with the cash flow available when looked at from a system wide perspective. The HDR Forecast indicates that some years have unit outages occurring at three stations and that will drive the annual variability of the CapEx. System wide outage planning will be required to refine those plans to assure the resources and CapEx funding are available to execute the plan.

The HDR Forecast demonstrates that NorthWestern's assumed annual CapEx is sufficient for future planning purposes. The annual variances shown in HDR's CapEx Forecast are not material enough to change the average annual CapEx requirements.

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Public Service Commission (PSC)
Set 13 (269-304)

Data Requests served May 2, 2014

PSC-287

Regarding: Arctic Grayling
Witness: Sullivan

- a. Is Madison the only facility exposed to possible liabilities that would result from regulation of the arctic grayling as an endangered species?
- b. If the answer to (b) is no, please identify the other Hydros that would be in your judgment possibly affected.

RESPONSE:

- a. No.
- b. In addition to Madison, Hebgen may be affected if the Arctic grayling are listed under the Endangered Species Act. The U.S. Fish and Wildlife Service ("USFWS") published a notice in the Federal Register in November 2013 that it was initiating a status review of a distinct population of Arctic grayling in the upper Missouri River system. The upper Missouri River system includes Holter, Hauser, Madison and Hebgen developments. However, the USFWS' Notice of Revised 12 Month Finding published in the Federal Register on September 8, 2010, defined the range of the distinct population segment to consist of native populations in the Big Hole River, Miner Lake, Mussigbrod Lake, the Madison River-Ennis Reservoir and Red Rocks Lake. Introduced populations present elsewhere are not considered as part of the listable entity because they are not considered native populations. For this reason, it is my judgment that only Hebgen and Madison may be affected by a listing.

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PSC-288

Regarding: Rainbow Powerhouse Demolition
Witness: Sullivan

- a. Has there been any progress in discussing alternatives to demolishing the Rainbow Powerhouse with local preservationists or others, since NWE last submitted a response to a data request on this topic?
- b. What other alternatives has NWE explored? Please explain.

RESPONSE:

- a. NorthWestern does not own the Rainbow Powerhouse. NorthWestern has not engaged in any discussions with local preservationists or others, regarding alternatives to the planned demolition of the old Rainbow Powerhouse.
- b. See the response to part a, above.

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PSC-289

Regarding: Probability of Issues of Concern Materializing
Witness: Wiseman

- a. You state that Essex presents concerns whose “potential costs are of a very low probability of occurrence.” (6:10-11). Have you quantified that probability, e.g., less than 5%, less than 10%?
- b. If the answer to (a) is yes, what probabilities would you assign for each of the primary concerns Essex raises?

RESPONSE:

- a. No.
- b. N/A.

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PSC-290

Regarding: FERC Requirements of Capital Additions
Witness: Wiseman

- a. Do you know of examples where FERC has required or suggested (with it subsequently having been done) that dams replace flashboard/stanchion systems?
- b. If the answer to (a) is yes, please explain those circumstances for the cited examples.

RESPONSE:

- a. No. In my experience, the discussion is about fixes or upgrades to the existing flashboard system.
- b. N/A.

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PSC-291

Regarding: FERC Requirements of Capital Additions
Witness: Miller

- a. Do you know of examples where FERC has required or suggested (with it subsequently having been done) that dams replace rock anchors?
- b. If the answer to (a) is yes, please explain those circumstances for the cited examples.

RESPONSE:

- a. Yes.
- b. HDR is aware of one unique project where remedial action was taken, at least in part, to address concerns regarding long-term performance of anchors. Note that project details are considered to be confidential, as they are considered to be "Critical Energy Infrastructure Information."

The Wanapum Future Units structure consisted of six unit intakes located between the existing powerhouse and the spillway. These future unit intakes have post tension anchors in the piers that are completely encased without a method for inspection, except to monitor movement of the entire structure. In the late 1980s the FERC suggested that the tendons be exposed in order to inspect the condition. Concerns arose that exposing the tendons would place them at increased risk of corrosion and failure. Instead of exposing the tendons, the FERC agreed to additional instrumentation and monitoring. Over the following decades additional seismic evaluations and analysis identified that under certain conditions the Future Unit section was at risk. Also the chances of installing the future unit were determined to be minimal resulting in the Owner (Grant County Public Utility District) to make the decision to add mass by filling the intake sections with concrete and reduce the reliance on the post tension anchors. The mass concrete in-fill project was completed in 2009.

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PSC-292

Regarding: Meaning of "Satisfactory Condition" Finding
Witness: Wiseman

- a. You conclude that the "hydro system structures and facilities are in satisfactory condition" (GW-13:10-11). Does the word "satisfactory" have a particular meaning in your industry (i.e., are there gradations of condition, such as exceptional, satisfactory, marginal, unsatisfactory, etc.)?
- b. Please explain the word's meaning in the context of your profession.

RESPONSE:

- a. No.
- b. In the context of CB&I due diligence reporting, "satisfactory" means of an acceptable condition, without material deficiency, to function as intended for ongoing facility operation.

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PSC-293

Regarding: Qualifications and Experience of Miller
 Witness: Miller

- a. Please identify the “generally very old and very small” facilities you refer to on RM-2:13.
- b. Please provide the age and capacity of the facilities identified in (a).
- c. Please describe your knowledge of “grid operations” (RM-4:3).

RESPONSE:

a & b. The “generally very old and very small facilities” are:

Facility	Configuration	Station Rating	Commissioning date
Saluda Hydro – SC	Unit 1-4 horizontal units with pressure cases. U4 out of service due to pressure case failure;	2.4 MW	1907
Hollidays Bridge, Belton, S.C.	Units 1-3: 1 MW horizontal units; Unit 4 1 MW vertical Francis	4 MW	1905
Boyds Mill, Laurens, SC	Units 1 & 2: 700 kW horizontal camel back turbines	1.4 MW	1909
Tuxedo Station, Saluda, NC	Units 1&2: 3.2 MW vertical Francis each	6.4 MW	1920
Turner Shoals, Mill Spring, NC	Units 1&2: 2.75 MW vertical Francis	5.5 MW	1925

- c. I joined Duke Power Company in 1978 in the civil engineering department where I completed projects that involved dam safety inspections and stability analyses for hydroelectric facilities. In 1984, I transferred to the Hydro Production Department to become the Company’s System Hydro Engineer. The Hydro Production Department was integrated within Duke Power’s Operating Division, which also contained the transmission system operating center (SOC). The SOC managed power flows over the transmission system and all generation dispatch to meet customer demand. The SOC also managed and dictated river operations and reservoir levels based upon predicted river inflow. The hydropower units’ operations were determined on an hourly basis for a planned generation schedule, and this schedule was adjusted in real time to take advantage of the hydropower fleet’s strategic flexibility to the grid. One of my roles was

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PSC-293 cont'd

to plan and implement all unit outages across the hydropower fleet, which required daily interface with the Chief Dispatcher, who led the SOC. I was Duke Power's System Hydro Engineer until 1988 when I was promoted to be the Area Hydro Manager for the older, small hydro facilities noted above, plus the much larger and system critical pumped storage units, where I stayed until 1992. It was during this period from 1984 to 1992 that I learned from and interfaced with on a daily basis Duke Power's SOC and what the requirements, and risks, are to keeping the lights on. And, more importantly, how 2700 MW of hydropower provides strategic flexibility to the grid that also must be managed to safely move water down through a cascading river system.

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PSC-294

Regarding: HDR Interviews with NorthWestern Representatives
Witness: Miller

- a. Who from NWE did you interview?
- b. Please provide notes that you took in the course of those interviews.

RESPONSE:

- a. HDR interviewed John VanDaveer and William Rhoads.
- b. See Attachments 1 and 2, the conference call meeting minutes dated April 8, 2014 and April 9, 2014.

Project Notes/Meeting Minutes

Project: **NorthWestern Energy**

Subject: Type subject here

Date: **Tuesday, April 08, 2014**

Location: **Conference Call**

Attendees: **HDR**
Rick Miller
Dave Light
Alex Morrison

NorthWestern Energy
Dusty Rhoads
Heather Graham
John Vandaveer
Gary Wiseman
Al Brogan
John Hines
Pat Corchoran
Brian Bird

Additional Issues Related testimony (final due 4/18, need draft 4/14)

- **Quals important – explain HDR's due diligence experience**
 - **Transaction support – evidence of success**
 - **Industry expertise**

Supplemental & Rebuttal Testimony, 5/9

- (1) Focus on Essex report - open issues and respond to implied messages**
- (2) Provide HDR's view of completeness of due diligence report**
- (3) Broader industry view of assets and long lived perspective of prime movers**

Action Item request 4/14 (Monday)

Action Item #1

- **Provide an opinion of our experience and view of long-lived assets**
- **CBI/Shaw due diligence report - respond to details and Essex checklist**
 - **Provide typical due diligence process and scope and was that done for NorthWestern Energy transaction?**
- **Focus on policy statements for due diligence and scope as compared to the specifics of the findings**

Action Item #2

- **Looked at material elements that would affect the transaction. Discuss review of details of capital risk.**
- **Adopted PPL CapEx Plan, detailed 5-year forecast**
- **Initially Due Diligence did not look at smaller plants and that resulted in the two supplemental reports – now the sequence makes sense.**

- A detailed CapEx forecast spend plan was created but not in due diligence – summarized. NWE has the detailed CapEx forecast. Send to RRM.

1:00 MST

Project Notes/Meeting Minutes

Project: NorthWestern Energy

Subject: PSC Additional Information Response Support

Date: Wednesday, April 09, 2014

Location: Conference Call

Attendees: HDR

Rick Miller
Dave Light
Alex Morrison

NorthWestern Energy

Dusty Rhoads
Mary Gail Sullivan
Diane Mullaney
John VanDaveer
Gary Wiseman

The topic of today's call was to discuss the Essex checklist, the PSC Additional Information requests, and assign responsibilities for responding. Follow up on the previous day's call to have HDR provide its opinion on NWE CapEx, the Due Diligence and the overall messaging in the Essex checklist. Consider providing a policy perspective overview.

Previous informal conversations were now to be expanded to further understand the details of the historical investments and future spend.

General: NWE and Essex Checklist

- NWE adding columns to the checklist to assist in developing and documenting responses.
- Added columns to consider likelihood of occurrence, risk assessment, and when they might occur

John VanDaveer

- Described 20-year forecast spreadsheet with his institutional perspective and anticipated cost effective investment in CapEx
 - Looked at plants in tail end of PPLM modernization program
 - Turbine/Generator, remainder of controls, governors, and excitation.

Hauser – Madison – Black Eagle

- Multiple units, small, limited revenue and focused investment
- Perform basic maintenance, civil and electrical and mechanical

- Expected to be at tail end of CapEx program – CapEx should address public safety and reliability

Thompson – Ryan

- Thompson and Ryan sister stations, but Thompson #7 (50 MW commissioned in 1995) – New, first on and last off →→ remaining units @ T.F (6 x 7 MW). have significantly less run time opportunity, therefore limited revenue and limited need for investment.
Investments are prioritized at Ryan then T.F. due to less run time on T.F. units
- In prefiled testimony, HDR reported that we found the CapEx data of $\$8.5 \times 10^6$ in J.Stimatz testimony, and had reviewed and discussed J.VanDaveer's 20 yr spreadsheet, but where was that exactly in the docket?
- J.VanDaveer confirmed that his 20-year forecast was submitted to PSC in response to PSC-18 and also PSC-186.
- HDR to focus on post-2017 CapEx with projected equipment investments.
- Distribution of $\$8.5 \times 10^6$ CapEx was allocated by NWE based upon previous investment and knowledge of remaining units and needs. Makes perfect sense.

Regulatory

- Compliance investments completed for water quality and mature licensing process
- Thompson fish passage, early action (2025 relicensing)
- Remainder in O&M (CapEx required for compliance is completed)
- Internal costs are budgeted in John Vandaveer's spreadsheet, O&M, plant labor
- John Vandaveer's excel file, Row 34: Hydro license and compliance including Thomson Falls relicensing team

Civil and Dam Safety

- Seismic criteria remediation - (Thompson Falls, low-hazard classification) analysis to be completed and future remediation costs will be determined at that time; HDR concurs with this approach → budget remediation dollars when known.
- Powerhouse Cranes – Headgates and trash racks, routine maintenance and inspection,
- Where are specifics documented - Will be in John Vandaveer's rebuttal testimony.

Cap Ex Investment Suggested Priority

- Morony
- Hauser
- Black Eagle
- Madison
- Mystic – Generators
- Holter
- Ryan
- Thompson Falls (new unit 7)
- Cochran (Newer relatively – commissioned in 1958)
- Rainbow
- Hebgen

Morony

- Fill in Unit 1 and Unit 2 modernization dates – not in PPLM data
- Civil scope and condition assessment

Hauser

- Aggregate Turbine/Generator scope with overhauls and Balance of Plant

Black Eagle – See response to PSC 66

- Fill in out years with scope of work

Madison

- Relaying
- Arctic grayling, potential compliance – risk dollars for unknown compliance costs

Mystic – get dates

- Mechanical Balance-of-Plant condition assessment

Holter (large project)

- 1918 Runners – original equipment; suspect cast iron runners. Investigate cracking and weld repair.
- Need to confirm data and material

O&M

- \$3 x 10⁶ annual O&M allocated across fleet (from John Vandaveer 20-year forecast) “*Common special expense*”; HDR experience is this is driven by where

owner applies the focus of in house labor and was this the case at NWE –
Vandy confirmed same.

- Exhibit JMS-1 – includes vO&M too.
- PSC-018, MCC-057 and PSC-186 (HDR noted on the call that PSC 186 response seemed to be text only, no spreadsheets or details of investments

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PSC-295

Regarding: HDR Interviews with PPL Representatives
Witness: Miller

- a. Did you interview any PPL staff?
- b. If the response to (a) is no, please explain why no interviews occurred.
- c. If the response to (a) is yes, please provide notes that you took in the course of those interviews.

RESPONSE:

- a. No.
- b. HDR was retained to provide a peer review of NorthWestern's due diligence, not to re-perform the effort.
- c. N/A.

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PSC-296

Regarding: HDR Interviews with Essex Staff
Witness: Miller

- a. Did you interview Essex staff?
- b. If the response to (a) is no, please explain why.
- c. If the response to (a) is yes, please provide notes that you took in the course of those interviews.

RESPONSE:

- a. No.
- b. HDR was retained to provide a peer review of NorthWestern's due diligence.
- c. N/A.

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PSC-297

Regarding: Clarification of Meaning of Due Diligence Report
Witness: Miller

In testifying about the “due diligence report and its supplemental reports” (RM-7: 16), please identify the supplemental reports to which you refer and provide them if they have not already been provided by another witness.

RESPONSE:

The Shaw / CB&I due diligence reports are found in prefiled testimony as follows:

- Independent Engineer's Report dated 01/03/2013 (Exhibit_WTR-2.1)
- Addendum to Independent Engineer's Report dated 06/25/2013 (Exhibit_WTR-2.2)
- Due Diligence Report supplementing Independent Engineer's report dated 09/06/2013 (Exhibit_WTR-2.3)

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PSC-298

Regarding: Possible Liabilities Not Budgeted
Witness: Miller

- a. You state that NWE's "projected CapEx estimates are sufficient to account for the known liabilities at this time" (RM-9: 6-7). What are the possible liabilities that the Commission should be concerned about?
- b. Has HDR taken a view of contingencies in NWE's CapEx budget?
- c. Does HDR believe that the contingencies outlined by NWE has outlined sufficiently represent the range of contingent CapEx requirements that could be required of the dams?

RESPONSE:

- a. HDR confirmed that the known regulatory and Part 12 Independent Engineer's recommendations are included in PPLM's CapEx forecast for 2013 to 2017 and those known liabilities have been extensively discussed in the docket. HDR also confirmed that older and smaller stations with units remaining to be modernized have been included in NorthWestern's CapEx forecast. Those stations include Hauser units 1-6; Madison units 1-4; Ryan units 1,3 and 6; Thompson Falls units 1-6; Holter units 1-4; Black Eagle units 1-3; Morony unit 2; Cochrane units 1-2; and Mystic units 1-2. The HDR Forecast also includes potential civil expenditures for the Mystic facility penstock rockfall stabilization (if required) and for the Madison facility modifications to the timber crib spillway.
- b. Yes.
- c. Yes. HDR confirmed that the NorthWestern CapEx forecast was sufficient to account for known and potential investments discussed in part a, above.

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PSC-299

Regarding: Unspecified CapEx
Witness: Miller

Please describe how you arrived at your “unspecified allocation of CapEx investments for each state for each year” (Exh ___RM-1, p. 7)

RESPONSE:

HDR’s CapEx Forecast includes unspecified CapEx budgets which were established based on HDR’s historical findings for projects of similar size, capacity, and age. Budget considerations were made considering station capacity, number of units, and historical investment. Unspecified annual budgets were tiered in four increments with lowest annual budgets in the first four years and the highest annual budgets in the last six years of the 20-year period. This weighting of these unspecified budgets reflects a higher level of certainty with near-term budgets as opposed to a higher chance of unforeseen costs near the end of the 20-year capital period.

HDR developed its unspecified CapEx after the review of PPLM’s reported investment history from 2008-12, and the planned CapEx for 2013-2017.

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PSC-300

Regarding: \$8.5 Million Forecast
Witness: Miller, part a / Stimatz, part b

- a. You state that “HDR’s recommended average CapEx budget of \$7.1 million per year (in 2014 dollars) compares favorably to NorthWestern’s projected \$8.5 million per year” (RM-9: 21-23). In Exh__TEM-1, is NWE forecasting a CapEx budget that it is \$8.5 million in 2014 dollars, or is it some other year?
- b. What would the \$8.5 million estimate in 2018 recorded in Exh__TEM-1 be in 2014 dollars?

RESPONSE:

- a. NorthWestern’s annual average CapEx of \$8.5 million is in 2018 dollars. HDR’s annual average CapEx Forecast of \$7.1 million in 2014 dollars equates to \$7.8 million in 2018 dollars, assuming a 2.5% annual rate of escalation.
- b. Assuming a 2.5% discount rate, \$8.5 million in 2018 dollars would equate to \$7.7 million in 2014 dollars.

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PSC-301

Regarding: NWE Specific CapEx Estimates
Witness: Miller

Please identify where in the docket the NWE plant- and year-specific estimates that you present in Exh___RM-1, p. 9, can be found.

RESPONSE:

See NorthWestern's response to Data Request PSC-282.

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PSC-302

Regarding: Cost of CapEx Improvements
Witness: Miller

What source or sources did you use to derive the cost of specific upgrades listed in Exh__RM-1?

RESPONSE:

HDR relied on its decades of hydropower modernization experience.

As an example of HDR's experience, EPRI selected HDR to update the cost curves and figures for EPRI's 2013 report: *"Quantifying the Full Value of Hydropower in the Transmission Grid - Task 5: Database of Current and Projected Cost Elements of Hydropower."*

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PSC-303

Regarding: DCF Runs of Scenarios
Witness: Stimatz

- a. Using your DCF model, what would the NPV be if the 30% increased and 15% decreased CapEx scenarios were run?
- b. Why do you not present updated DCF scenarios in your testimony?

RESPONSE:

- a. NorthWestern has not performed this analysis.
- b. The Notice of Additional Issues includes the following:

“The Commission is seeking a fuller understanding of what the range of potential future CapEx and O&M costs might be and the effect of those potential costs on NorthWestern’s net present value cost estimates.”

The DCF model was one of several valuation methods NorthWestern considered in preparing its bid. However, it is not the appropriate tool for estimating the effect of alternate CapEx assumptions on the cost to customers or the comparative cost of the Hydros and other supply alternatives. The appropriate tools for these analyses are the long term revenue requirement model (described in the Additional Issues Testimony of Travis Meyer) and the risk-adjusted NPV comparisons described in my additional issues testimony.

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PSC-304

Regarding: Due Diligence Supporting Memo
Witness: Miller

- a. Please identify where in NWE's submissions to the PSC in this docket the "supporting memo" you refer to (RM-16: 8) can be found.
- b. If the document has been withheld on the basis of privilege, please describe exactly what that privilege is (work product, attorney-client, etc.).
- c. If the document has been withheld on the basis of privilege, please explain whether you or NWE expect the PSC to rely on it in any way to determine or support NWE's claims regarding adequate due diligence.

RESPONSE:

- a. I have not reviewed all information provided in this docket. The supporting memo is attached.
- b. N/A.
- c. N/A.

Skadden, Arps, Slate, Meagher & Flom LLP and affiliates

PRIVILEGED AND CONFIDENTIAL
SUBJECT TO THE ATTORNEY WORK PRODUCT
AND ATTORNEY-CLIENT PRIVILEGES

MEMORANDUM

August 26, 2013

TO: Heather Graham
M. Andrew McLain

FROM: Mike Naeve
Gerald Richman
Karis Anne Gong

RE: Review of PPLM's List of License Articles with Compliance
Requirements and Current Project Status

On August 8, 2013, Jon Jourdonnais, PPLM's Manager, Hydro Regulatory and Environmental Compliance, placed in the data room a revised spreadsheet listing (for each of the projects to be acquired) the principal FERC license articles imposing ongoing requirements related to environmental, recreational, and cultural resource management. The spreadsheet also provided a high-level statement of the implementation status of the various compliance requirements.

At your request, we have compared the PPLM spreadsheet to the specified license requirements in the PPLM spreadsheet. This memorandum thus does not presently cover every license requirement or general regulatory requirements applicable to all FERC hydro licensees.

MYSTIC LAKE HYDROELECTRIC PROJECT (P-2301)

Article 401: The Mystic license is subject to conditions submitted by the Montana Department of Environmental Quality ("MDEQ"), attached to the license at Appendix A, and by the U.S. Forest Service ("USFS"), attached to the license as Appendix B. Various of those conditions, set forth in Article 401, require the licensee to prepare and implement plans, which in turn must be submitted to FERC for approval prior to implementation. Once approved, the plans effectively become license conditions.

- Water Quality Monitoring Plan
- Chemical Storage and Spill Containment Plan
- Septic System Maintenance Plan
- Emergency Flow Plan
- Scenery Management Plan
- Public Access Management Plan
- Recreation Plan

- Whitewater Flow Plan
- Biological Evaluations
- Soil Erosion Control Plan
- Riparian Vegetation Monitoring Plan
- Weed Management Plan
- Wilderness Occupancy and Use Plan
- Updated Fisheries Plan
- Wildlife Species Protection, Mitigation and Enhancement Measures

At this point, all of the covered plans have been submitted and approved. That is just a first step, however, because all of these plans require ongoing implementation and monitoring by the licensee. In addition, FERC requires updated submissions with respect to several of these plans: Water Quality Monitoring Plan by December 31, 2019; Updated Fisheries Plan by September 30, 2016, plus annual reports every May; and the Whitewater Flow Plan by April 7, 2015. Further, the licensee will be required to submit a new Riparian Vegetation Monitoring Plan by April 12, 2030 if, by that point, a revised plan is necessary to improve the condition of the riparian vegetation along West Rosebud Creek.

Article 402: FERC reserved the right to require the licensee to construct, operate, and maintain fishways at the project. To date, FERC has not taken this step, but it remains possible.

Article 403: Article 403 directs the licensee to implement an Historic Properties Management Plan (“HPMP”) and Programmatic Agreement on cultural resources between FERC and the Montana State Historic Preservation Officer (“SHPO”). The HPMP includes provisions for historic architectural and engineering resources on the project and, for the term of the license, the licensee is required to review all project operations and maintenance action to determine their potential impact on such resources. In addition, the licensee must submit an annual report to FERC (PPLM’s most recent report, for 2012, was filed on January 3, 2013).

Article 404: Article 404 allows the licensee to grant permission, without prior FERC approval, for the use and occupancy of project lands for “minor” activities that are consistent with the purpose of protecting and enhancing the scenic, recreational, and environmental values of the project.¹ The licensee has continuing responsibility to supervise, control, and monitor the use and occupancies for which it grants permission. If a permitted use and occupancy violates any license condition imposed for protection and enhancement of the project’s scenic, recreational, or other environmental values, or if a covenant of a conveyance is violated, the licensee shall take any lawful action necessary to correct the violation. FERC reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing Article 404, and to require modification of those standards, guidelines, or procedures. To date, FERC has not taken these steps at Mystic.

¹ The type of use and occupancy covered by this provision are (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than ten watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement.

Under Article 404, the licensee may convey fee title, easements or rights-of-way across, or leases of project lands for specified purposes. Before the conveyance, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer. The licensee must also determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources. Generally, such conveyances must be reported to FERC on an annual basis, although certain categories must be reported forty-five days in advance. To date, PPLM has made no such submissions.

Appendix A – MDEQ Conditions Incorporated into the License: As discussed above, Article 401 explicitly references a number of the MDEQ conditions, which will not be repeated here. However, Appendix A contains additional conditions. Conditions 1 and 2 require a 10-, 5-, or 4-cubic foot per second (“cfs”) minimum flow in the bypassed reach depending on the time of year; a 2-cfs ramping rate in the bypassed reach when flows are below 10 cfs; and a 20-cfs minimum flow below West Rosebud Lake. Conditions 7, 8, and 9 require notification before any construction, notification of any unauthorized discharge of pollutants, and reasonable access for Montana Department of Environmental Quality (“MDEQ”) personnel to determine compliance with all other conditions. Condition 10 requires the acquisition of all permits, authorizations, and certifications, and reserves MDEQ’s authority to correct violations. Finally, Conditions 11 and 12 define violations of the terms of the water quality certification and expiration of the water quality certification.

Appendix B – USFS Conditions Incorporated into the License: In addition to the USFS conditions referenced in Article 401, Conditions 1 to 8 require the licensee to obtain a special use permit from the USFS; USFS approval of final designs; USFS approval of any changes; annual consultation with the USFS; implementation of a restoration plan prior to any license surrender; maintenance responsibilities; safety responsibilities; and indemnification, risks, and damage provisions. Condition 14 requires a 10-, 5-, or 4-cfs minimum flow in the bypassed reach depending on the time of year, a 2-cfs per hour ramping rate in the bypassed reach when flows are below 10 cfs, and a 20-cfs minimum flow below West Rosebud Lake. Condition 15 requires new shutoff and minimum-flow valves on the flowline to improve minimum flow reliability (approved by FERC on April 22, 2010). *PPL Montana, LLC*, 131 FERC ¶ 62,059 (2010). Condition 16 requires a fisheries monitoring plan (approved by FERC on September 30, 2010, *see PPL Montana, LLC*, Project No. 2301-034, FERC Letter Approving Fisheries Monitoring Plan (Sept. 30, 2010)).²

KERR PROJECT (P-5)

Article 43: Article 43 allows the licensee to regulate Flathead Lake between elevations 2,883 ft. and 2,893 ft. in such a manner as will make not less than 1,219,000 acre feet of storage available to the licensee.

² Under this plan, the licensee must submit an annual report to FERC, the USFS, and Montana Fish, Wildlife and Parks. PPLM made its most recent annual submission on May 6, 2013.

Articles 44: Article 44 requires licensee to maintain a continuous minimum outflow of 3,200 cfs, provided that at times between July 1 and Sept 15 when the elevation of Flathead Lake is below 2,892.7 feet, the outflow may be reduced below 3,200 cfs to a rate equal to the greater of the average of the past fifteen days deduced inflow into the lake or 2,200 cfs.

Articles 45, 46, and 47: Article 45 requires that, after the performance of various studies the licensee must file a fish resource mitigation and enhancement plan for FERC approval. Article 46 contains a similar requirement for a wildlife mitigation and enhancement plan. Both articles provide that, after the completion of the studies, the Secretary of the Interior will be allowed to impose such license conditions for the protection of fish, wildlife, and related environmental concerns. Article 47 requires the licensee to study the project's impact on wildlife habitat at the north end of Flathead Lake, and to propose any changes in project operations and other measures necessary to mitigate for loss of wildlife habitat. Unlike Articles 45 and 46, Article 47 does not reserve any conditioning authority to the Secretary of the Interior. The last of the required studies was completed in 1990, and the licensee (then Montana Power Company) then filed a Mitigation Plan intended to meet the requirements of all three articles. As modified by FERC, FERC approved the plan on June 25, 1997 and made the plan part of the license. *Montana Power Co.*, 79 FERC ¶ 61,376 (1997).

Article 48: The licensee was required, within the first year of the license, to consult with appropriate federal, state, and local agencies and prepare and file for FERC approval a report that described provisions for development of recreational facilities below the dam. On July 17, 1986, Montana Power Company filed a report providing for an access road, three parking areas, boat launch, staging area, benches, clothes changing shelter, interpretive and regulatory signs, garbage facilities, picnic area, handicapped parking stall, picnic tables, rail fence, drinking water, toilets, trails, parking and roadway barriers, and landscaping—to be completed within eighteen months of a FERC approval order. FERC approved the plan on August 26, 1986. *Montana Power Co.*, 36 FERC ¶ 62,224 (1986).

Article 52: Article 52 requires that the licensee, in consultation with the Montana SHPO and various Confederated Salish and Kootenai (“CSK”) tribal committees, develop a cultural resources management plan to periodically monitor known archeological and historical sites affected by the project's operation. The cultural resources management plan should contain procedures that would be implemented in the event any site is affected by project operation. If any known sites should become affected by project operation, the licensee must implement reasonable measures to protect such sites and make available reasonable funds for any necessary work. If any previously unrecorded archeological or historical sites are discovered during the course of construction or development of any project works, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the licensee shall consult with the SHPO and the tribal committees to develop a mitigation plan for the protection of significant archeological or historical resources as determined by such criteria. If the licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historical work related to the project, FERC reserves the right, after notice and opportunity for hearing, to require the licensee to conduct, at its own expense, any such work found necessary.

Article 55: The licensee shall operate the Kerr Project as a base-load facility, which precludes load-following or storing water for peak power generation.

Article 56: The licensee shall maintain releases at or above specified instantaneous minimum flows, provided that the passage of minimum flows from Flathead Lake downstream is not limited by the natural channel capacity immediately upstream of the Kerr Dam. The licensee shall manage the project in a manner that limits the occurrence of such channel capacity limitations. In addition, the minimum instream flows may be temporarily modified by operating emergencies beyond the licensee's control, or for short periods upon written approval of the Secretary of the Interior.

Article 57: The licensee shall operate the Kerr Project in accordance with specified between-day restrictions on flow variations, except as necessary to meet flood control requirements imposed by the Corps of Engineers. The between-day restrictions on flow variations may be temporarily modified if required by operating emergencies beyond the licensee's control, or for short periods upon prior written approval from the Secretary of the Interior.

Article 58: The licensee must operate the Kerr Project in accordance with specified following hourly maximum allowable ramping rates, except as necessary to meet flood control requirements imposed by the Corps of Engineers. As with the between-day flow retractions, the hourly ramping rates may be temporarily modified if required by operating emergencies beyond the licensee's control, or for short periods upon prior written approval from the Secretary of the Interior.

Article 59: This article required the licensee to cooperatively develop and initiate a site-specific ramping rate study as part of the adaptive management planning process. The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

Article 60: The licensee was directed to develop and implement—in consultation with the Corps of Engineers, the Bureau of Reclamation, the Bureau of Indian Affairs, and the MDEQ—a drought management plan for Flathead Lake. PPLM filed the plan on March 5, 2002, and the most recent FERC staff inspection report indicates that additional follow-up is not currently required.

Article 61: The licensee must consult with the U.S. Bureau of Reclamation on a weekly basis from April 20 to August 31 and on a biweekly basis the remainder of the year regarding the anticipated releases from Hungry Horse Reservoir. The licensee must, in a timely manner and within the maximum allowable changes in flow discharge rates set for the Kerr Project, coordinate operations with Hungry Horse Project releases.

Article 62: The licensee must provide to the Secretary of the Interior annually on or about May 1, but no later than May 10, an annual operational schedule to be supplemented on a monthly basis. The annual schedule shall include month-end estimates of water surface elevation at Flathead Lake and estimates of monthly discharge from Kerr Dam.

Articles 63, 64, 65, and 79: Articles 63, 64, and 65 created obligations (in conjunction with the CSK Tribes) for the development and implementation of a Fish and Wildlife Implementation Strategy (“FWIS”) to ensure adequate protection and utilization of fish and wildlife resources and attendant habitat of the Flathead Indian Reservation. Article 79 required the licensee to file an implementation schedule, which Montana Power Company did in late 1997. FERC approved the schedule on January 28, 1998. *Montana Power Co.*, 82 FERC ¶ 62,051 (1998). The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

Article 66: The licensee shall provide specified funding annually on the anniversary of license issuance through the license term to accomplish the objectives of the FWIS. The funds shall be placed in a separate interest-bearing account, jointly held (until the conveyance date) by the licensees, and managed by a fiduciary of their choosing pursuant to an escrow agreement that provides for exclusive use of such monies for the benefit of Flathead Reservation fish and wildlife.

Article 67: Article 67 requires the CSK Tribes to acquire acreage on the Reservation to be managed for the benefit of the Reservation fish and wildlife resources, and requires the Tribes to establish and manage a fund exclusively for fish and wildlife habitat acquisition or other habitat restoration, creation, or enhancement activities approved by the Secretary of the Interior. The acquisitions are to be funded by the licensee.

Articles 68, 71, 73, 74, 75, and 76: The licensee, in consultation with the U.S. Fish and Wildlife Service (“USFWS”) and the CSK Tribes, is required to:

- Construct a shore-aligned north shore erosion control project and associated habitat development features in the Flathead Waterfowl Production Area, consisting of two revetments on the north shore of Flathead Lake, one on either side of the Flathead River confluence, and a third revetment along the west river bank of the Flathead River.
- Commence habitat development activities on the Flathead Waterfowl Production Area.
- Construct an additional shore-aligned erosion protection segment on the north shore, east of the offshore structure located east of the river mouth of Flathead River.
- File a plan outlining habitat development activities to be undertaken on the Flathead Waterfowl Production Area.
- Before starting construction of the north shore erosion control project and associated habitat development features, the licensee must review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved

design. At least thirty days before starting construction of a cofferdam, the licensee shall submit copies to FERC staff.

- After consultation with the USFWS, the Montana Department of Fish Wildlife and Parks (“MDFWP”), and the CSK Tribes, file a detailed plan to mitigate adverse environmental impacts resulting from implementation of the north shore erosion control project, at least sixty days prior to the start of any construction activity with respect to the north shore erosion control project. The plan should be developed and include, at a minimum: types of equipment and materials to be used; construction scheduling, specifically with respect to critical times of year to minimize impacts to fish and wildlife; and measures to minimize impacts to water quality and aquatic resources. FERC reserves the right to require changes and/or additions to the plan.

PPLM indicates that the north shore work to carry this requirement was completed in March 2013, with monitoring through 2014. A final completion report is due December 20, 2013.

Article 70: The licensees were to acquire, in fee simple, and develop for the benefit of the USFWS, 2,366 acres of nearby habitat as replacement habitat for the Flathead Waterfowl Production Area lands that are precluded from waterfowl and wildlife management or utilization because of Kerr Dam operations. This has been completed.

Article 72: The licensee shall, on behalf of the USFWS, acquire in fee simple title and develop 1,058 acres of nearby habitat as replacement wildlife production areas to mitigate the loss of wildlife due to Kerr Project operations. The most recent FERC staff inspection report indicates that additional follow-up is not currently required.

Article 80: FERC reserves the authority to require the licensee to take whatever action deemed necessary as a result of the ongoing review of the impacts of the Kerr Project No. 5 on the bull trout.

Article 81: The licensee shall implement, upon FERC order, any measures as may be identified by the Secretary of the Interior, as necessary, to ensure adequate protection and utilization of the Flathead Indian Reservation or the Flathead Waterfowl Production Area. The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

THOMPSON FALLS HYDROELECTRIC PROJECT (P-1869)

Article 8: This article from the standard form L-5 terms and conditions was incorporated by the 1979 licensing order. It requires the licensee to maintain gages, stream-gaging stations, meters, and other measurement devices to determine the stage and flow of streams consistent with FERC requirements. This is an ongoing obligation.

Article 402: This article, which was added in 1990, required the licensee to submit a plan for revegetation of an island located between the Main Dam and the Dry Channel Dam. In

1993, the licensee submitted a new plan that obviated the need for revegetation of the island, and article 402 was deleted from the license.

Article 403: This article, which was added in 1990, required the licensee to implement visual resource mitigative measures described in a filing by the licensee. It is unclear whether this was completed.

Article 406: FERC requires the monitoring of recreational facilities and the periodic submission of reports updating the status of those facilities and their usage. The licensee is required to consult with the USFS; the City of Thompson Falls; the Thompson Falls Lion's Club; the Montana Fish, Wildlife and Parks; Sanders County; and the National Park Service regarding the monitoring of recreational facilities. Each report must include the results of the monitoring, a description of the methodology used for monitoring, and a plan, if necessary, for developing any new additional recreational facility to accommodate project-induced recreational use. The most recent report was filed on May 28, 2009. The next report is due in 2015. Additional reports are required every six years until the termination of the lease in 2025.

Article 409: Before starting any land-clearing, land-disturbing, or spoil-producing activities in the project boundaries, the licensee is required to consult with the Montana State Historic Preservation Officer, conduct a cultural resources survey of these areas, and file for FERC approval a report documenting the survey and a cultural resources management plan for avoiding or mitigating impacts to any significant archaeological sites or historic sites.

Appendix A: In 2009, FERC approved the construction of fish passage facilities to address bull trout habitat degradation, contingent on several requirements that are ongoing and continue through the expiration of the license in 2025. *PPL Montana, LLC*, 126 FERC ¶ 62,105 (2009).

- A1: The upstream passage must facilitate upstream fish passage, operated in accordance with an approved Operational Plan, and reduce or eliminate incidental take from blockage of bull trout migrants by the dam;
- A2: The upstream passage must facilitate downstream fish passage and reduce or minimize incidental take from dam effects on juvenile fish;
- A3: Reduce the effects of gas supersaturation on bull trout in the project area to reduce incidental take of bull trout by effects of gas bubble disease;
- A4: Develop and implement strategies for the Thompson Falls Memorandum of Understanding ("MOU") under the guidance of interagency Technical Advisory Committee;
- A5: Reduce or mitigate adverse effects to bull trout from operations of the Thompson falls reservoir: investigations should be carried out over ten-year period;
- A6: Provide periodic monitoring and evaluation of bull trout populations across the core area; and
- A7: Implement reporting and consultation requirements as outlined in the terms and conditions to minimize take of bull trout.

Appendix A Terms and Conditions: The more specific terms and conditions are outlined in Appendix A. While the construction of the facility was completed in 2010, several additional

terms and conditions are still being implemented. Many of these reflect obligations that specify PPLM directly, and the obligations would be transferred to NWE. The terms and conditions are as follows:

- TC1.a: Construct approved fish passage facility (completed in 2010).
- TC1.b: Implement and follow permit procedures required by the USFWS, State of Montana, and U.S. Army Corps of Engineers to minimize impacts to downstream resources during construction. Implementation is ongoing.
- TC1.c: Develop and implement a fish ladder standard operating procedure. The Operations Manual was approved on June 17, 2011. *PPL Montana, LLC*, 135 FERC ¶ 62,234 (2011).
- TC1.d: Provide adequate funding of the fish passage facility, including biological studies, bull trout transport, and ladder efficiency assessments. This is ongoing through 2025.
- TC1.e: Provide adequate funding for genetic testing of bull trout. This is ongoing through 2025.
- TC1.f: Make a fish transport vehicle available, and provide staff to transport any adult bull trout that is captured at the dam and determined by SOP to require transport. According to Mr. Jourdonnais's spreadsheet, the tank truck need is under review.
- TC1.g: Prepare and submit for approval an upstream passage efficiency evaluation plan. The plan was submitted on October 18, 2010 and approved by FERC on June 9, 2011. *PPL Montana, LLC*, 135 FERC ¶ 62,210 (2011). Data and analysis is to be included in the annual and five- and ten-year reports.
- TC1.h: The Technical Advisory Committee ("TAC") is to provide oversight of scientific aspects, surveys, studies, and protocols associated with the fish passage aspects of the Project from 2010-2020. At the end of the Phase 2 evaluation period, and after distribution of the ten-year report, the Licensee is required to convene a structured scientific review of the project, guided by the TAC. The scientific review must be completed by April 1, 2021.
- TC2.a: PPLM will fund the TAC with annual payments of \$100,000 from 2009-2013; subsequent annual payments are subject to renegotiation from 2014-2020.
- TC3.a: In consultation with the TAC, through the remainder of the license term, PPLM will develop and implement operational procedures to reduce or minimize total dissolved gas production at the Thompson Falls Dam during spill periods. The USFWS and MDEQ approved ongoing measures to address this term.
- TC3.b: In consultation with the TAC, through the remainder of the license term, PPLM will collaborate with multiple entities to reduce overall systemic gas supersaturation levels in the Clark Fork River from downstream of the Thompson Falls Dam to below Albeni Falls Dam.
- TC3.c: Through the remainder of the license term, examine bull trout detained through the sampling loop at the fish ladder for gas bubble trauma.
- TC4.a: Review the Thompson Falls MOU and collaborate with signatory agencies as to the need to revise and restructure the MOU. According to Mr. Jourdonnais, this is pending.
- TC5.a: For 2010-2015, PPLM with TAC involvement and USFWS approval is to conduct a prioritized five-year evaluation of factors contributing to potential loss or

enhancement of migratory bull trout passage. The assessment goals and objectives filing was made with FERC on June 22, 2010 and approved by FERC on February 9, 2011. *PPL Montana, LLC*, 134 FERC ¶ 62,123 (2011).

- TC5.b: Based on the assessment described in TC5.a, an evaluation of the site-specific need for a nonnative species control program is to be conducted by the end of 2015; final recommendations must be approved by the USFWS.
- TC6.a: For the remainder of the license term, PPLM is to ensure adequate funding of actions at the Thompson Falls Fish Ladder. This is ongoing.
- TC6.b: For the remainder of the license term, PPLM is to contribute a proportional amount of funding to ensure that fish sampled are processed, analyzed, and integrated into annual updates of the Clark Fork River genetic database. This is ongoing.
- TC6.c: For the remainder of the license term, PPLM is to fund the technology necessary to track transmittered fish that pass through the project. This is ongoing.
- TC7.a: Every year, prepare and submit a report by April 1 that states the previous year's activities, fish passage totals, and next year's proposed activities and other fisheries monitoring that may result in intentional as well as incidental take of bull trout. The most recent report was filed March 28, 2013.
- TC7.b: By December 31, 2015, after completion of the first five years of Phase 2 evaluation, present to the TAC and USFWS a comprehensive written assessment of the fishway operation.
- TC7.c: By April 1 of each year and through the end of the license, archive electronic versions of all biological progress reports (dating back to 2005) and provide access to TAC agencies at no cost. This is ongoing.
- TC7.d: For the remainder of the license term, notify USFWS of any dead, injured, or sick bull trout in real time. This is ongoing.
- TC7.e: For the remainder of the license term, notify USFWS of any project compliance emergencies in real time. This is ongoing.

MISSOURI-MADISON HYDROELECTRIC PROJECT (P-2188)

Article 403: Article 403 sets out detailed operating criteria and requirements for each of the nine projects, and required the licensee to file implementing plans for FERC approval. The licensee filed its operating plan on April 23, 2001, which FERC approved with certain modifications on December 7, 2001. *PPL Montana, LLC*, 97 FERC ¶ 62,203 (2001). The operation plan, as approved, became part of the license.

Article 404: Article 404 requires the licensee to develop, in consultation with the appropriate agencies, a program for monitoring water quality at all nine project developments. The article specifies a variety of water quality parameters to be monitored, and establishes a schedule for monitoring reports and program updating. The article is designed to collect in one place the various water quality monitoring conditions from five sources: PPLM's relicense application; recommendations from fish and wildlife agencies; FERC's conditions based on the recommendations in the 1999 Environmental Impact Statement; the mandatory conditions submitted by the USFS (under section 4(e) of the Federal Power Act); and the mandatory conditions submitted by the MDEQ under the Clean Water Act. PPLM filed a plan in 2001. In 2001, FERC ordered that the licensee file an updated plan by May 15, 2011, and by May 15 of

every tenth year thereafter. On May 19, 2011, FERC extended the deadline for the first updated plan to December 30, 2011, and PPLM filed the plan on December 20, 2011. FERC approved the updates plan on November 15, 2012, and the next plan is due on December 30, 2022. *PPL Montana, LLC*, 141 FERC ¶ 62,109 (2012).

Article 405: Article 405 provides that, prior to any dredging or excavation activities requiring Clean Water Act from the Corps of Engineers, the licensee shall file for FERC approval a plan for conducting such activities. The article also specifies the content of the plan. Upon FERC approval, the licensee shall implement the plan, including any changes required by FERC. FERC approved PPLM's most recent such plan (for the Cochrane Reservoir) on May 22, 2012. *PPL Montana, LLC*, 139 FERC ¶ 62,144 (2012).

Article 406: Article 406 provided that, prior to the scheduled powerhouse rehabilitation construction at the Hauser Development, the licensee (after consultation with the USFWS, the MDFWP, and other "interested entities") would submit for FERC approval a plan for gas supersaturation monitoring during construction. The plan was to include documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. FERC approved PPLM's plan on January 26, 2004. *PPL Montana, LLC*, 106 FERC ¶ 62,064 (2004).

Article 407: By this article, FERC reserved the authority to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior. The Secretary to date has not taken such action.

Articles 408, 409, 412, 414, 416, and 417: Articles 408, 409, and 412 require the licensee to implement various fisheries mitigation and enhancement measures and post-licensing evaluation and monitoring for the Madison River. Articles 414, 416, and 417 require the licensee to implement various fisheries mitigation and enhancement measures and post-licensing evaluation and monitoring for the Hauser, Holter, and the five Great Falls reservoirs and their tailwaters on the Missouri River. The articles require the plans to be prepared in consultation with the USFWS, the MDFWP, the MDEQ and other "interested entities." FERC approved PPLM's most recent revised plans on January 14, 2009, directing that the next set of revised plans be filed by December 31, 2013. *PPL Montana, LLC*, 126 FERC ¶ 62,028 (2009).

Articles 411, 418, 421, 423 and 424: These articles require the licensee to file for FERC approval (after consultation with the USFS, the USFWS, the MDFWP, and the U.S. Bureau of Land Management ("BLM")) plans for protection, mitigation, and enforcement ("PM&E") of wildlife, threatened and endangered ("T&E") species, and terrestrial habitat resources on the Madison and Missouri Rivers (collectively, the "Wildlife Plan"). On April 10, 2008, in response to PPLM filings, FERC directed the licensee to file monitoring reports with FERC by November 30 of the year following monitoring (2007, and every five years thereafter). PPLM made its most recent submission on November 12, 2012, and its next submission is scheduled for November 27, 2017.

Article 413: Article 413 required the licensee to develop a three-year plan for continued thermal monitoring of water temperatures and a pulse flow protocol for the lower Madison River downstream from the project's Madison development. The Article required the licensee, at the end of the three-year monitoring period, to submit to FERC for approval a final pulse flow protocol, developed in consultation with state and federal resource agencies and other interested entities. PPLM's plan was approved by FERC on December 21, 2004. *PPL Montana, LLC*, 109 FERC ¶ 61,303 (2004). The December 2004 order required the licensee to file, within five years from the date of the order, and every five years thereafter, a report on the performance of the licensee's pulse flow protocol, including comments from the USFWS, the MDFWP, and the MDEQ. FERC approved PPLM's most recent submission on December 23, 2009, and the next update is schedule for December 30, 2014. *PPL Montana, LLC*, 129 FERC ¶ 62,222 (2009).

Article 415: Article 415 requires an annual flow window excursion report describing deviations from target flows at the Hauser, Holter, and Morony developments to evaluate appropriate operational and electrical improvements that can minimize flow excursions under Article 403 and reduce impacts to downstream fisheries resources. PPLM made its most recent submission, for filing year 2012, on February 25, 2013. The next submission is scheduled for March 30, 2014.

Article 419: Article 419 requires that the licensee file for FERC approval a plan to coordinate and monitor flushing flows in the upper Madison River, downstream of Hebgen Dam. The plan should include, but not be limited to, a provision for monitoring flushing flow needs in the upper Madison River near Kirby Ranch in 2002 and every five years thereafter, and a provision to coordinate flushing flows in the lower Madison River below Madison Dam with flushing flow requirements in the upper Madison. PPLM filed its most recent five-year plan on March 22, 2013, which FERC approved on June 3, 2013. *PPL Montana, LLC*, 143 FERC ¶ 62,165 (2013). The next revised plan is scheduled for March 1, 2014.

Article 420: Article 420 required the licensee to file, for FERC approval and subsequent implementation, a plan to restore flows in the Madison and Missouri Rivers downstream of the Madison, Holter, Hauser, and Morony developments within thirty minutes of a plant trip. Article 402 required that plan specify the construction, operation, and maintenance of a guaranteed priority streamflow device (approved by USFS), as part of proposed modifications to the Hauser Development. In addition, Article 420 required that the licensee install dam structure upgrades (i.e., automated spillway gates) at Hauser and Madison Dams, and modify the slide gates on the Holter Dam spillway and two of the nine radial gates on the Morony Dam spillway. Finally, Article 420 required plans to install and monitor a water measurement control section with a continuous recording gauge to demonstrate compliance with daily and hourly average flow requirements at the Hauser Development, prepared after consultation with the USFS, the US Geological Survey ("USGS"), and the MDEQ. FERC approved PPLM's plan on April 2, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,007 (2002).

Article 425: The licensee must implement the "Programmatic Agreement Among the Federal Energy Regulatory FERC, the Advisory Council on Historic Preservation, and the Montana State Historic Preservation Office Regarding the Licensing and Continued Operation of the Missouri-Madison Hydroelectric Generating Project (FERC Project No. 2188)," executed on

May 6, 1998, including, but not limited to, the Cultural Resources Management Plan (“CRMP”) for the project. The Programmatic Agreement requires the licensee to annually file a compliance report with FERC and the Montana SHPO. PPLM filed its most recent compliance report on March 25, 2013, and its next report is scheduled for March 2014.

Article 426: Article 426 required the licensee—after consultation with the USFS, the BLM, the MDFWP, and the Montana SHPO—to prepare and file for FERC approval a plan for managing recreational resources at the project. The Plan was to include, but not be limited to, specific provisions for recreational development at Hebgen, Madison, Hauser, Holter, Rainbow, Cochrane, and Morony Developments, and for four public access sites to the Missouri River. Finally, the licensee was required to file a revised proposal for recreational development at the Black Eagle Recreation Area. On December 18, 2001, PPLM filed the comprehensive recreation plan (with supplemental filings on January 18, March 8, and April 5, 2002) (the “CRP”). On June 11, 2002, FERC approved the CRP. *PPL Montana, LLC*, 99 FERC ¶ 62,170 (2002). Since then, PPLM has updated the plan at least twice. On June 16, 2005, PPLM filed a 2004 CRP for FERC’s review and comment. We did not find any FERC Order approving the 2004 CRP, and it does not appear that PPLM has filed subsequent revisions. The most recent public version, the 2010 CRP, is posted on a public website PPLM maintains to provide Missouri-Madison stakeholder with news about the CRP and related development,³ and it appears that PPLM views the CPR as an organic document.⁴

Most of the terms of the 2001-02 comprehensive plan that was approved by FERC, including several specific fixed financial contributions, have been completed. Some ongoing obligations continue, however:

- *Rumbaugh Ridge/Fisherman’s Point (Hebgen)*: Licensee is required to contribute up to \$3,500 annually to operating and maintaining the site;
- *RV Dump Station (Hebgen)*: Licensee is required to contribute up to \$5,000 annually to operating and maintaining the site, and Licensee is responsible for operating and maintaining the site via contract with a private service provider;
- *Hebgen Dam Day-Use Area*: Licensee is required to contribute up to \$6,500 annually to operating and maintaining the site;
- *Hebgen Shoreline Plan*: Under the original monitoring program, PPLM was required to conduct annual monitoring trips to inspect for compliance with the program, which are to include videotaping/photographing of each inspection and written descriptions of any activities that are not in compliance with the shoreline plan;
- *Madison Site Operation & Maintenance*: Licensee is required to contribute up to \$35,000 annually to supplement the BLM, MDFWP, and Licensee recreation management responsibilities on Ennis Lake and in Upper Bear Trap Canyon; this

³ <http://www.missourimadison.com#1>

⁴ PPLM’s June 16, 2005 submission of the 2004 CRP referenced the company’s plan to revise the CRP in 2009. The June 16, 2005 submission also asked that FERC contact Mr. Jourdonnais if the agency had any questions about the “Project 2188 recreation program.” To date, we have found no written record of any such questions being raised.

includes road maintenance and weed control and any other responsibilities included in the three-party cooperative management agreement between Licensee, BLM, and the MDFWP;

- *Devil's Elbow (Hauser)*: Licensee is required to contribute up to \$40,000 annually to supplement the BLM's operation and maintenance costs for all BLM recreation sites on Hauser and Holter Reservoirs and the associated RV dump stations if they are constructed on BLM property;
- *White Sandy Beach (Hauser)*: Licensee is required to contribute up to \$50,000 annually to supplement the MDFWP recreation management responsibilities at White Sandy Beach and the Hauser Dam Access Site;
- *Meriwether Picnic Area and Coulter Campground (Holter)*: Licensee is required to contribute up to \$16,500 annually for operation and maintenance at the two recreation areas;
- *Shuttle Service (Great Falls Area)*: Licensee maintains portage sign at City of Great Falls canoe take-out ramp;
- *Four River Access Sites*: Licensee is required to contribute up to \$10,000 annually for the operation and maintenance of each site;
- *Fort Benton Motorboat Launch Area*: Licensee is required to contribute up to \$5,000 annually for the operation and maintenance of the area;
- *Fort Benton Canoe Launch and Campground*: Licensee is required to contribute up to \$5,000 annually for the operation and maintenance of the area;
- *Cochrane Dam Crossing*: Licensee is required to operate and maintain the crossing, and to contribute up to \$2,000 annually for the operation and maintenance of the crossing;
- *Ryan Island Day-Use Area*: Licensee operates and maintains the site;
- *MDFWP Managed Recreation Sites*: Licensee is required to contribute up to \$55,000 annually to supplement the MDFWP operation and maintenance costs for Black Eagle Memorial Island, the Rainbow Boat Launch, the Lewis and Clark Heritage Greenway Conservation Easement, the Pedestrian/Bicycle Trail, the Sulfur Springs Trailhead, and the Widow Coulee Fishing Access Site.

Article 427: Article 427 requires the licensee, after consulting the USFS, the BLM, and the MDFWP, to monitor recreation use of the project area to determine whether existing recreation facilities are meeting recreation needs. The monitoring studies were to begin within six years after issuance of the license and are to be reported to FERC every six years thereafter, in conjunction with FERC Form 80.⁵ The report is to include: (1) annual recreation use figures; (2) a discussion of the adequacy of the licensee's recreation facilities at the project site to meet recreation demand; (3) a description of the methodology used to collect all study data; (4) if there is a need for additional facilities, a recreation plan proposed by the licensee to accommodate recreation needs in the project area; (5) documentation of agency consultation and agency comments on the report after it has been prepared and provided to the agencies; and (6) specific descriptions of how the agencies' comments are accommodated by the report. FERC approved

⁵ 18 C.F.R. § 8.11. FERC Form 80. Form 80 is used to gather information necessary for FERC and other agencies to know what recreational facilities are located at licensed projects, whether public recreational needs are being accommodated by the facilities, and where additional efforts could be made to meet future needs.

PPLM's most recent report on November 10, 2010. *PPL Montana, LLC*, Project No. 2188-030, Unpublished Letter Order re: Recreation Report (Nov. 10, 2010). The next report is due on or before April 1, 2015.

Article 428: Article 428 contains parallel use and occupancy provisions found in Article 404 for the Mystic Lake Hydroelectric Project (*see above*).

Appendix A – MDEQ Conditions Incorporated into the License: Appendix A to the license order contains the state's conditions to the water quality certification issued for the Missouri-Madison Project on September 3, 1993 by the MDEQ.

1. The licensee shall, prior to any changes in the operation of Cochrane, Ryan, or Morony Reservoirs, submit to the Montana Department of Health and Environmental Services ("DHES")⁶ a written evaluation of the potential for ground water contamination, and elevated concentrations in downstream surface water, which are likely to be caused by the proposed changes. The evaluation plan must be approved by DHES prior to its implementation.
2. The licensee shall, prior to changing its peaking operations at Cochrane and Morony Reservoirs, complete an evaluation of the potential for bank erosion and mass wasting at these reservoirs to result from changes in operations.
3. The licensee was required, within three months of issuance of the FERC license, to submit Drawdown Operational Plans for Black Eagle and Morony dams for DHES approval.
4. The licensee shall submit reservoir dredging and monitoring plans for all reservoirs at least three months prior to any dredging. Upon approval or modification by the DHES the licensee shall implement the plans according to their terms and schedules.
5. The licensee was required to develop and implement a water quality monitoring plan for all projects. *See discussion of Article 404, above.*
6. The licensee was required, within three months after issuance of the FERC license, to submit for DHES approval a toxic algae monitoring plan for Hebgen Reservoir.
7. The licensee shall, within one year after issuance of the FERC license, begin monitoring the bank erosion at each project reservoir. The licensee shall submit monitoring plans for all reservoirs at least three months prior to monitoring. *See discussion of Article 402, above.*
8. The licensee shall apply for and receive any necessary permits and authorizations from DHES prior to any construction activities.
9. The licensee shall maintain minimum flows of 200 cfs from April 1 through June 30 and 80 cfs from July 1 through March 31 in the portion of the Madison River from the Madison Dam to the Madison Power House. *See discussion of Article 420, above.*

⁶ The MDEQ is the successor agency to the DHES.

10. The licensee, within one year after issuance of the FERC license, was required to develop for DHES approval reservoir drawdown criteria for nonemergency drawdowns of each reservoir. Upon approval or modification by the DHES, the licensee may then change its operations consistent with the drawdown criteria. *See* discussion of Article 403, above.
11. Any operations under this license that would result in water quality which is worse than conditions associated with reasonable operation of the licensee's dams at July 1, 1971, must to the extent of the worsened condition, be reviewed and approved under the nondegradation policy at Section 75-5-303, MCA prior to commencement.⁷

Appendix B: USFS Conditions Incorporated into License

1. The licensee cannot not implement USFS-mandated conditions without completion of USFS review.
2. USFS approval is required before any ground-disturbing actions occur on National Forest System land.
3. The licensee shall obtain written approval from the USFS prior to making any changes in the location of any constructed project features or facilities, or any changes in the uses of USFS-administered lands and waters, or any departure from the requirements of any approved exhibits filed with FERC.
4. Each year during the 60 days preceding the anniversary date of the license, the licensee shall consult with the USFS with regard to measures needed to ensure protection and development of the natural resource values of the project area. Within 60 days following such consultation, the licensee shall file with FERC evidence of the consultation with any recommendations made by the USFS. FERC reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection.
5. This condition sets out detailed disputed resolutions procedures in order to expedite the review of disputed USFS orders or directions given during construction.
6. This condition sets out instream flow requirements in the Madison River below Hebgen Dam, on the Madison River at Kirby Ranch, and on the Madison River below the Madison development.
7. The licensee shall construct, operate, and maintain a guaranteed priority streamflow device, approved by the USFS, as part of the diversion/intake structure. At least 90 days prior to beginning construction of the diversion structure, the licensee shall file for FERC approval functional design drawings and an implementation schedule for the guaranteed priority streamflow device. FERC approved the device on April 2, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,007 (2002). *See* discussion of Article 420, above.
8. Within six months of license issuance, the licensee had to file for FERC approval a plan approved by the USFS for monitoring toxic algae blooms in Hebgen Reservoir

⁷ Condition 12 of Appendix A simply provided that the certification represented final agency action under Montana law.

- throughout the term of the license. FERC approved the plan on January 16, 2002. *PPL Montana, LLC*, 98 FERC ¶ 62,020 (2002). See discussion of Article 404, above.
9. The licensee shall establish two water quality stations: (1) Madison River above Hebgen Reservoir and (2) Madison River below Hebgen Dam. The licensee shall assist the MDEQ and the Gallatin County Health Department in monitoring toxic algae in Hebgen Reservoir. The licensee shall also fund an annual water quality enhancement account that may be used for monitoring toxic algae blooms in Hebgen Reservoir, monitoring and treating appropriate point source discharges, sediment control projects, and applied water quality research studies in the Missouri-Madison river system.
 10. Within one year of the issuance of the license, the Licensee had to file for FERC approval a USFS-approved plan for a baseline study which will delineate the growth and distribution of submerged macrophytes and their use by waterfowl and reservoir fisheries in Hebgen Reservoir. FERC approved the plan on May 23, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,135 (2002). See discussion of Article 411, above.
 11. At least one year prior to scheduled implementation, the licensee shall notify the USFS of any land-clearing, land-disturbing, or other activity proposed for National Forest System land that may potentially have adverse effects to “sensitive species.”
 12. Within six months of the issuance of the license, the licensee had to file for FERC approval USFS-approved plans for the completion of the Hebgen Development comprehensive bald eagle habitat protection and enhancement plan. FERC approved the plan on April 30, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,084 (2002). See discussion of Article 421, above.
 13. Within one year following the date of issuance of the license, the licensee had to prepare and file for FERC approval a project operations erosion and sedimentation control plan (“ESCP”). The most current plan was approved by FERC on October 29, 2009. *PPL Montana, LLC*, 129 FERC ¶ 62,086 (2009). See discussion of Article 405, above.
 14. Within one year of the issuance of the license, the licensee shall conduct an assessment of the project’s overhead transmission lines on National Forest System. Within three years of the issuance of the license, the licensee had to develop a USFS-approved plan for the implementation of necessary modifications to the project’s overhead transmission lines on National Forest System land, and file the USFS-approved plan and assessment with FERC. PPLM filed the plan on March 27, 2002, and FERC approved it on May 16, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,116 (2002). See discussion of Article 424, above.
 15. Within one year of the issuance of the license, and before starting any activities the USFS determines to be of a land-disturbing nature on National Forest System land, the licensee had to file with FERC a USFS-approved plan for vegetation management.
 16. Within one year of the issuance of the license, or at least ninety days prior to starting any land-clearing, land-disturbing, or spoil-producing activities, or other action that may have potential negative effects on scenery, the licensee had to file for FERC approval a USFS-approved plan for the design and construction of the project facilities in order to preserve or enhance the scenic quality of the project area.

17. Within one year after issuance of the license, the licensee had to file for FERC approval a USFS-approved plan for implementing measures to mitigate project-induced recreation and provide for other recreation needs over the life of the project. FERC approved the plan on June 11, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,170 (2002). See discussion of Article 426, above.
18. At least ninety days prior to starting any land-clearing, land-disturbing, or spoil-producing activities affecting national forest land, the licensee shall file for FERC approval a USFS-approved plan for traffic management and public safety.
19. After consultation with the USFS and before starting construction or maintenance activities which the USFS determines may affect another authorized activity on National Forest System land, the licensee must develop and enter into an agreement with the representative for the other activity authorized by the USFS on land in question.
20. Within six months following the date of issuance of this license, the licensee had to file a revised exhibit of the project boundary, approved by the USFS, that displays only those facilities at Hebgen Lake needed for reservoir operation and maintenance as being within the project boundary. PPLM submitted this on December 20, 2000.

Memoranda of Understanding: While the proceeding leading to the issuance of September 27, 2000 license was pending before FERC, the Montana Power Company (the processor licensee to PPLM) executed a Memorandum of Understanding (“Recreation MOU”) with various Montana counties,⁸ the USFS, the BLM, the MDFWP, and the U.S. Bureau of Reclamation. The Recreation MOU implements the Missouri-Madison River Fund Grant Program to address ongoing needs for public recreation in the Missouri-Madison Project Area. Now administered by PPLM as the project licensee, the Grant Program annually awards grants (along with PPLM matching funds) for qualifying projects. The Recreation MOU and the obligations thereunder remain in effect for the life of the license.

In addition, on January 1, 2009, PPLM executed a second MOU with state and federal resource management agencies to provide funding and to form several Technical Advisory Committees to implement license requirements for the protection, mitigation, and enhancement of fisheries, wildlife, and water quality in the Madison and Missouri River drainages. This additional MOU is renewable every ten years.

Both MOUs have been submitted and explained to FERC in PPLM submissions and are part of the record in this docket.

⁸ Broadwater, Cascade, Chouteau, Gallatin, Lewis and Clark, and Madison Counties.

Skadden, Arps, Slate, Meagher & Flom LLP and affiliates

PRIVILEGED AND CONFIDENTIAL
SUBJECT TO THE ATTORNEY WORK PRODUCT
AND ATTORNEY-CLIENT PRIVILEGES

MEMORANDUM

August 26, 2013

TO: Heather Graham
M. Andrew McLain

FROM: Mike Naeve
Gerald Richman
Karis Anne Gong

RE: Review of PPLM's List of License Articles with Compliance
Requirements and Current Project Status

On August 8, 2013, Jon Jourdonnais, PPLM's Manager, Hydro Regulatory and Environmental Compliance, placed in the data room a revised spreadsheet listing (for each of the projects to be acquired) the principal FERC license articles imposing ongoing requirements related to environmental, recreational, and cultural resource management. The spreadsheet also provided a high-level statement of the implementation status of the various compliance requirements.

At your request, we have compared the PPLM spreadsheet to the specified license requirements in the PPLM spreadsheet. This memorandum thus does not presently cover every license requirement or general regulatory requirements applicable to all FERC hydro licensees.

MYSTIC LAKE HYDROELECTRIC PROJECT (P-2301)

Article 401: The Mystic license is subject to conditions submitted by the Montana Department of Environmental Quality ("MDEQ"), attached to the license at Appendix A, and by the U.S. Forest Service ("USFS"), attached to the license as Appendix B. Various of those conditions, set forth in Article 401, require the licensee to prepare and implement plans, which in turn must be submitted to FERC for approval prior to implementation. Once approved, the plans effectively become license conditions.

- Water Quality Monitoring Plan
- Chemical Storage and Spill Containment Plan
- Septic System Maintenance Plan
- Emergency Flow Plan
- Scenery Management Plan
- Public Access Management Plan
- Recreation Plan

- Whitewater Flow Plan
- Biological Evaluations
- Soil Erosion Control Plan
- Riparian Vegetation Monitoring Plan
- Weed Management Plan
- Wilderness Occupancy and Use Plan
- Updated Fisheries Plan
- Wildlife Species Protection, Mitigation and Enhancement Measures

At this point, all of the covered plans have been submitted and approved. That is just a first step, however, because all of these plans require ongoing implementation and monitoring by the licensee. In addition, FERC requires updated submissions with respect to several of these plans: Water Quality Monitoring Plan by December 31, 2019; Updated Fisheries Plan by September 30, 2016, plus annual reports every May; and the Whitewater Flow Plan by April 7, 2015. Further, the licensee will be required to submit a new Riparian Vegetation Monitoring Plan by April 12, 2030 if, by that point, a revised plan is necessary to improve the condition of the riparian vegetation along West Rosebud Creek.

Article 402: FERC reserved the right to require the licensee to construct, operate, and maintain fishways at the project. To date, FERC has not taken this step, but it remains possible.

Article 403: Article 403 directs the licensee to implement an Historic Properties Management Plan (“HPMP”) and Programmatic Agreement on cultural resources between FERC and the Montana State Historic Preservation Officer (“SHPO”). The HPMP includes provisions for historic architectural and engineering resources on the project and, for the term of the license, the licensee is required to review all project operations and maintenance action to determine their potential impact on such resources. In addition, the licensee must submit an annual report to FERC (PPLM’s most recent report, for 2012, was filed on January 3, 2013).

Article 404: Article 404 allows the licensee to grant permission, without prior FERC approval, for the use and occupancy of project lands for “minor” activities that are consistent with the purpose of protecting and enhancing the scenic, recreational, and environmental values of the project.¹ The licensee has continuing responsibility to supervise, control, and monitor the use and occupancies for which it grants permission. If a permitted use and occupancy violates any license condition imposed for protection and enhancement of the project’s scenic, recreational, or other environmental values, or if a covenant of a conveyance is violated, the licensee shall take any lawful action necessary to correct the violation. FERC reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing Article 404, and to require modification of those standards, guidelines, or procedures. To date, FERC has not taken these steps at Mystic.

¹ The type of use and occupancy covered by this provision are (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than ten watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement.

Under Article 404, the licensee may convey fee title, easements or rights-of-way across, or leases of project lands for specified purposes. Before the conveyance, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer. The licensee must also determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources. Generally, such conveyances must be reported to FERC on an annual basis, although certain categories must be reported forty-five days in advance. To date, PPLM has made no such submissions.

Appendix A – MDEQ Conditions Incorporated into the License: As discussed above, Article 401 explicitly references a number of the MDEQ conditions, which will not be repeated here. However, Appendix A contains additional conditions. Conditions 1 and 2 require a 10-, 5-, or 4-cubic foot per second (“cfs”) minimum flow in the bypassed reach depending on the time of year; a 2-cfs ramping rate in the bypassed reach when flows are below 10 cfs; and a 20-cfs minimum flow below West Rosebud Lake. Conditions 7, 8, and 9 require notification before any construction, notification of any unauthorized discharge of pollutants, and reasonable access for Montana Department of Environmental Quality (“MDEQ”) personnel to determine compliance with all other conditions. Condition 10 requires the acquisition of all permits, authorizations, and certifications, and reserves MDEQ’s authority to correct violations. Finally, Conditions 11 and 12 define violations of the terms of the water quality certification and expiration of the water quality certification.

Appendix B – USFS Conditions Incorporated into the License: In addition to the USFS conditions referenced in Article 401, Conditions 1 to 8 require the licensee to obtain a special use permit from the USFS; USFS approval of final designs; USFS approval of any changes; annual consultation with the USFS; implementation of a restoration plan prior to any license surrender; maintenance responsibilities; safety responsibilities; and indemnification, risks, and damage provisions. Condition 14 requires a 10-, 5-, or 4-cfs minimum flow in the bypassed reach depending on the time of year, a 2-cfs per hour ramping rate in the bypassed reach when flows are below 10 cfs, and a 20-cfs minimum flow below West Rosebud Lake. Condition 15 requires new shutoff and minimum-flow valves on the flowline to improve minimum flow reliability (approved by FERC on April 22, 2010). *PPL Montana, LLC*, 131 FERC ¶ 62,059 (2010). Condition 16 requires a fisheries monitoring plan (approved by FERC on September 30, 2010, *see PPL Montana, LLC*, Project No. 2301-034, FERC Letter Approving Fisheries Monitoring Plan (Sept. 30, 2010)).²

KERR PROJECT (P-5)

Article 43: Article 43 allows the licensee to regulate Flathead Lake between elevations 2,883 ft. and 2,893 ft. in such a manner as will make not less than 1,219,000 acre feet of storage available to the licensee.

² Under this plan, the licensee must submit an annual report to FERC, the USFS, and Montana Fish, Wildlife and Parks. PPLM made its most recent annual submission on May 6, 2013.

Articles 44: Article 44 requires licensee to maintain a continuous minimum outflow of 3,200 cfs, provided that at times between July 1 and Sept 15 when the elevation of Flathead Lake is below 2,892.7 feet, the outflow may be reduced below 3,200 cfs to a rate equal to the greater of the average of the past fifteen days deduced inflow into the lake or 2,200 cfs.

Articles 45, 46, and 47: Article 45 requires that, after the performance of various studies the licensee must file a fish resource mitigation and enhancement plan for FERC approval. Article 46 contains a similar requirement for a wildlife mitigation and enhancement plan. Both articles provide that, after the completion of the studies, the Secretary of the Interior will be allowed to impose such license conditions for the protection of fish, wildlife, and related environmental concerns. Article 47 requires the licensee to study the project's impact on wildlife habitat at the north end of Flathead Lake, and to propose any changes in project operations and other measures necessary to mitigate for loss of wildlife habitat. Unlike Articles 45 and 46, Article 47 does not reserve any conditioning authority to the Secretary of the Interior. The last of the required studies was completed in 1990, and the licensee (then Montana Power Company) then filed a Mitigation Plan intended to meet the requirements of all three articles. As modified by FERC, FERC approved the plan on June 25, 1997 and made the plan part of the license. *Montana Power Co.*, 79 FERC ¶ 61,376 (1997).

Article 48: The licensee was required, within the first year of the license, to consult with appropriate federal, state, and local agencies and prepare and file for FERC approval a report that described provisions for development of recreational facilities below the dam. On July 17, 1986, Montana Power Company filed a report providing for an access road, three parking areas, boat launch, staging area, benches, clothes changing shelter, interpretive and regulatory signs, garbage facilities, picnic area, handicapped parking stall, picnic tables, rail fence, drinking water, toilets, trails, parking and roadway barriers, and landscaping—to be completed within eighteen months of a FERC approval order. FERC approved the plan on August 26, 1986. *Montana Power Co.*, 36 FERC ¶ 62,224 (1986).

Article 52: Article 52 requires that the licensee, in consultation with the Montana SHPO and various Confederated Salish and Kootenai (“CSK”) tribal committees, develop a cultural resources management plan to periodically monitor known archeological and historical sites affected by the project's operation. The cultural resources management plan should contain procedures that would be implemented in the event any site is affected by project operation. If any known sites should become affected by project operation, the licensee must implement reasonable measures to protect such sites and make available reasonable funds for any necessary work. If any previously unrecorded archeological or historical sites are discovered during the course of construction or development of any project works, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the licensee shall consult with the SHPO and the tribal committees to develop a mitigation plan for the protection of significant archeological or historical resources as determined by such criteria. If the licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historical work related to the project, FERC reserves the right, after notice and opportunity for hearing, to require the licensee to conduct, at its own expense, any such work found necessary.

Article 55: The licensee shall operate the Kerr Project as a base-load facility, which precludes load-following or storing water for peak power generation.

Article 56: The licensee shall maintain releases at or above specified instantaneous minimum flows, provided that the passage of minimum flows from Flathead Lake downstream is not limited by the natural channel capacity immediately upstream of the Kerr Dam. The licensee shall manage the project in a manner that limits the occurrence of such channel capacity limitations. In addition, the minimum instream flows may be temporarily modified by operating emergencies beyond the licensee's control, or for short periods upon written approval of the Secretary of the Interior.

Article 57: The licensee shall operate the Kerr Project in accordance with specified between-day restrictions on flow variations, except as necessary to meet flood control requirements imposed by the Corps of Engineers. The between-day restrictions on flow variations may be temporarily modified if required by operating emergencies beyond the licensee's control, or for short periods upon prior written approval from the Secretary of the Interior.

Article 58: The licensee must operate the Kerr Project in accordance with specified following hourly maximum allowable ramping rates, except as necessary to meet flood control requirements imposed by the Corps of Engineers. As with the between-day flow retractions, the hourly ramping rates may be temporarily modified if required by operating emergencies beyond the licensee's control, or for short periods upon prior written approval from the Secretary of the Interior.

Article 59: This article required the licensee to cooperatively develop and initiate a site-specific ramping rate study as part of the adaptive management planning process. The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

Article 60: The licensee was directed to develop and implement—in consultation with the Corps of Engineers, the Bureau of Reclamation, the Bureau of Indian Affairs, and the MDEQ—a drought management plan for Flathead Lake. PPLM filed the plan on March 5, 2002, and the most recent FERC staff inspection report indicates that additional follow-up is not currently required.

Article 61: The licensee must consult with the U.S. Bureau of Reclamation on a weekly basis from April 20 to August 31 and on a biweekly basis the remainder of the year regarding the anticipated releases from Hungry Horse Reservoir. The licensee must, in a timely manner and within the maximum allowable changes in flow discharge rates set for the Kerr Project, coordinate operations with Hungry Horse Project releases.

Article 62: The licensee must provide to the Secretary of the Interior annually on or about May 1, but no later than May 10, an annual operational schedule to be supplemented on a monthly basis. The annual schedule shall include month-end estimates of water surface elevation at Flathead Lake and estimates of monthly discharge from Kerr Dam.

Articles 63, 64, 65, and 79: Articles 63, 64, and 65 created obligations (in conjunction with the CSK Tribes) for the development and implementation of a Fish and Wildlife Implementation Strategy (“FWIS”) to ensure adequate protection and utilization of fish and wildlife resources and attendant habitat of the Flathead Indian Reservation. Article 79 required the licensee to file an implementation schedule, which Montana Power Company did in late 1997. FERC approved the schedule on January 28, 1998. *Montana Power Co.*, 82 FERC ¶ 62,051 (1998). The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

Article 66: The licensee shall provide specified funding annually on the anniversary of license issuance through the license term to accomplish the objectives of the FWIS. The funds shall be placed in a separate interest-bearing account, jointly held (until the conveyance date) by the licensees, and managed by a fiduciary of their choosing pursuant to an escrow agreement that provides for exclusive use of such monies for the benefit of Flathead Reservation fish and wildlife.

Article 67: Article 67 requires the CSK Tribes to acquire acreage on the Reservation to be managed for the benefit of the Reservation fish and wildlife resources, and requires the Tribes to establish and manage a fund exclusively for fish and wildlife habitat acquisition or other habitat restoration, creation, or enhancement activities approved by the Secretary of the Interior. The acquisitions are to be funded by the licensee.

Articles 68, 71, 73, 74, 75, and 76: The licensee, in consultation with the U.S. Fish and Wildlife Service (“USFWS”) and the CSK Tribes, is required to:

- Construct a shore-aligned north shore erosion control project and associated habitat development features in the Flathead Waterfowl Production Area, consisting of two revetments on the north shore of Flathead Lake, one on either side of the Flathead River confluence, and a third revetment along the west river bank of the Flathead River.
- Commence habitat development activities on the Flathead Waterfowl Production Area.
- Construct an additional shore-aligned erosion protection segment on the north shore, east of the offshore structure located east of the river mouth of Flathead River.
- File a plan outlining habitat development activities to be undertaken on the Flathead Waterfowl Production Area.
- Before starting construction of the north shore erosion control project and associated habitat development features, the licensee must review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved

design. At least thirty days before starting construction of a cofferdam, the licensee shall submit copies to FERC staff.

- After consultation with the USFWS, the Montana Department of Fish Wildlife and Parks (“MDFWP”), and the CSK Tribes, file a detailed plan to mitigate adverse environmental impacts resulting from implementation of the north shore erosion control project, at least sixty days prior to the start of any construction activity with respect to the north shore erosion control project. The plan should be developed and include, at a minimum: types of equipment and materials to be used; construction scheduling, specifically with respect to critical times of year to minimize impacts to fish and wildlife; and measures to minimize impacts to water quality and aquatic resources. FERC reserves the right to require changes and/or additions to the plan.

PPLM indicates that the north shore work to carry this requirement was completed in March 2013, with monitoring through 2014. A final completion report is due December 20, 2013.

Article 70: The licensees were to acquire, in fee simple, and develop for the benefit of the USFWS, 2,366 acres of nearby habitat as replacement habitat for the Flathead Waterfowl Production Area lands that are precluded from waterfowl and wildlife management or utilization because of Kerr Dam operations. This has been completed.

Article 72: The licensee shall, on behalf of the USFWS, acquire in fee simple title and develop 1,058 acres of nearby habitat as replacement wildlife production areas to mitigate the loss of wildlife due to Kerr Project operations. The most recent FERC staff inspection report indicates that additional follow-up is not currently required.

Article 80: FERC reserves the authority to require the licensee to take whatever action deemed necessary as a result of the ongoing review of the impacts of the Kerr Project No. 5 on the bull trout.

Article 81: The licensee shall implement, upon FERC order, any measures as may be identified by the Secretary of the Interior, as necessary, to ensure adequate protection and utilization of the Flathead Indian Reservation or the Flathead Waterfowl Production Area. The most recent FERC staff inspection report (dated September 25, 2012) indicates that additional follow-up is not currently required.

THOMPSON FALLS HYDROELECTRIC PROJECT (P-1869)

Article 8: This article from the standard form L-5 terms and conditions was incorporated by the 1979 licensing order. It requires the licensee to maintain gages, stream-gaging stations, meters, and other measurement devices to determine the stage and flow of streams consistent with FERC requirements. This is an ongoing obligation.

Article 402: This article, which was added in 1990, required the licensee to submit a plan for revegetation of an island located between the Main Dam and the Dry Channel Dam. In

1993, the licensee submitted a new plan that obviated the need for revegetation of the island, and article 402 was deleted from the license.

Article 403: This article, which was added in 1990, required the licensee to implement visual resource mitigative measures described in a filing by the licensee. It is unclear whether this was completed.

Article 406: FERC requires the monitoring of recreational facilities and the periodic submission of reports updating the status of those facilities and their usage. The licensee is required to consult with the USFS; the City of Thompson Falls; the Thompson Falls Lion's Club; the Montana Fish, Wildlife and Parks; Sanders County; and the National Park Service regarding the monitoring of recreational facilities. Each report must include the results of the monitoring, a description of the methodology used for monitoring, and a plan, if necessary, for developing any new additional recreational facility to accommodate project-induced recreational use. The most recent report was filed on May 28, 2009. The next report is due in 2015. Additional reports are required every six years until the termination of the lease in 2025.

Article 409: Before starting any land-clearing, land-disturbing, or spoil-producing activities in the project boundaries, the licensee is required to consult with the Montana State Historic Preservation Officer, conduct a cultural resources survey of these areas, and file for FERC approval a report documenting the survey and a cultural resources management plan for avoiding or mitigating impacts to any significant archaeological sites or historic sites.

Appendix A: In 2009, FERC approved the construction of fish passage facilities to address bull trout habitat degradation, contingent on several requirements that are ongoing and continue through the expiration of the license in 2025. *PPL Montana, LLC*, 126 FERC ¶ 62,105 (2009).

- A1: The upstream passage must facilitate upstream fish passage, operated in accordance with an approved Operational Plan, and reduce or eliminate incidental take from blockage of bull trout migrants by the dam;
- A2: The upstream passage must facilitate downstream fish passage and reduce or minimize incidental take from dam effects on juvenile fish;
- A3: Reduce the effects of gas supersaturation on bull trout in the project area to reduce incidental take of bull trout by effects of gas bubble disease;
- A4: Develop and implement strategies for the Thompson Falls Memorandum of Understanding ("MOU") under the guidance of interagency Technical Advisory Committee;
- A5: Reduce or mitigate adverse effects to bull trout from operations of the Thompson falls reservoir: investigations should be carried out over ten-year period;
- A6: Provide periodic monitoring and evaluation of bull trout populations across the core area; and
- A7: Implement reporting and consultation requirements as outlined in the terms and conditions to minimize take of bull trout.

Appendix A Terms and Conditions: The more specific terms and conditions are outlined in Appendix A. While the construction of the facility was completed in 2010, several additional

terms and conditions are still being implemented. Many of these reflect obligations that specify PPLM directly, and the obligations would be transferred to NWE. The terms and conditions are as follows:

- TC1.a: Construct approved fish passage facility (completed in 2010).
- TC1.b: Implement and follow permit procedures required by the USFWS, State of Montana, and U.S. Army Corps of Engineers to minimize impacts to downstream resources during construction. Implementation is ongoing.
- TC1.c: Develop and implement a fish ladder standard operating procedure. The Operations Manual was approved on June 17, 2011. *PPL Montana, LLC*, 135 FERC ¶ 62,234 (2011).
- TC1.d: Provide adequate funding of the fish passage facility, including biological studies, bull trout transport, and ladder efficiency assessments. This is ongoing through 2025.
- TC1.e: Provide adequate funding for genetic testing of bull trout. This is ongoing through 2025.
- TC1.f: Make a fish transport vehicle available, and provide staff to transport any adult bull trout that is captured at the dam and determined by SOP to require transport. According to Mr. Jourdonnais's spreadsheet, the tank truck need is under review.
- TC1.g: Prepare and submit for approval an upstream passage efficiency evaluation plan. The plan was submitted on October 18, 2010 and approved by FERC on June 9, 2011. *PPL Montana, LLC*, 135 FERC ¶ 62,210 (2011). Data and analysis is to be included in the annual and five- and ten-year reports.
- TC1.h: The Technical Advisory Committee ("TAC") is to provide oversight of scientific aspects, surveys, studies, and protocols associated with the fish passage aspects of the Project from 2010-2020. At the end of the Phase 2 evaluation period, and after distribution of the ten-year report, the Licensee is required to convene a structured scientific review of the project, guided by the TAC. The scientific review must be completed by April 1, 2021.
- TC2.a: PPLM will fund the TAC with annual payments of \$100,000 from 2009-2013; subsequent annual payments are subject to renegotiation from 2014-2020.
- TC3.a: In consultation with the TAC, through the remainder of the license term, PPLM will develop and implement operational procedures to reduce or minimize total dissolved gas production at the Thompson Falls Dam during spill periods. The USFWS and MDEQ approved ongoing measures to address this term.
- TC3.b: In consultation with the TAC, through the remainder of the license term, PPLM will collaborate with multiple entities to reduce overall systemic gas supersaturation levels in the Clark Fork River from downstream of the Thompson Falls Dam to below Albeni Falls Dam.
- TC3.c: Through the remainder of the license term, examine bull trout detained through the sampling loop at the fish ladder for gas bubble trauma.
- TC4.a: Review the Thompson Falls MOU and collaborate with signatory agencies as to the need to revise and restructure the MOU. According to Mr. Jourdonnais, this is pending.
- TC5.a: For 2010-2015, PPLM with TAC involvement and USFWS approval is to conduct a prioritized five-year evaluation of factors contributing to potential loss or

enhancement of migratory bull trout passage. The assessment goals and objectives filing was made with FERC on June 22, 2010 and approved by FERC on February 9, 2011. *PPL Montana, LLC*, 134 FERC ¶ 62,123 (2011).

- TC5.b: Based on the assessment described in TC5.a, an evaluation of the site-specific need for a nonnative species control program is to be conducted by the end of 2015; final recommendations must be approved by the USFWS.
- TC6.a: For the remainder of the license term, PPLM is to ensure adequate funding of actions at the Thompson Falls Fish Ladder. This is ongoing.
- TC6.b: For the remainder of the license term, PPLM is to contribute a proportional amount of funding to ensure that fish sampled are processed, analyzed, and integrated into annual updates of the Clark Fork River genetic database. This is ongoing.
- TC6.c: For the remainder of the license term, PPLM is to fund the technology necessary to track transmittered fish that pass through the project. This is ongoing.
- TC7.a: Every year, prepare and submit a report by April 1 that states the previous year's activities, fish passage totals, and next year's proposed activities and other fisheries monitoring that may result in intentional as well as incidental take of bull trout. The most recent report was filed March 28, 2013.
- TC7.b: By December 31, 2015, after completion of the first five years of Phase 2 evaluation, present to the TAC and USFWS a comprehensive written assessment of the fishway operation.
- TC7.c: By April 1 of each year and through the end of the license, archive electronic versions of all biological progress reports (dating back to 2005) and provide access to TAC agencies at no cost. This is ongoing.
- TC7.d: For the remainder of the license term, notify USFWS of any dead, injured, or sick bull trout in real time. This is ongoing.
- TC7.e: For the remainder of the license term, notify USFWS of any project compliance emergencies in real time. This is ongoing.

MISSOURI-MADISON HYDROELECTRIC PROJECT (P-2188)

Article 403: Article 403 sets out detailed operating criteria and requirements for each of the nine projects, and required the licensee to file implementing plans for FERC approval. The licensee filed its operating plan on April 23, 2001, which FERC approved with certain modifications on December 7, 2001. *PPL Montana, LLC*, 97 FERC ¶ 62,203 (2001). The operation plan, as approved, became part of the license.

Article 404: Article 404 requires the licensee to develop, in consultation with the appropriate agencies, a program for monitoring water quality at all nine project developments. The article specifies a variety of water quality parameters to be monitored, and establishes a schedule for monitoring reports and program updating. The article is designed to collect in one place the various water quality monitoring conditions from five sources: PPLM's relicense application; recommendations from fish and wildlife agencies; FERC's conditions based on the recommendations in the 1999 Environmental Impact Statement; the mandatory conditions submitted by the USFS (under section 4(e) of the Federal Power Act); and the mandatory conditions submitted by the MDEQ under the Clean Water Act. PPLM filed a plan in 2001. In 2001, FERC ordered that the licensee file an updated plan by May 15, 2011, and by May 15 of

every tenth year thereafter. On May 19, 2011, FERC extended the deadline for the first updated plan to December 30, 2011, and PPLM filed the plan on December 20, 2011. FERC approved the updates plan on November 15, 2012, and the next plan is due on December 30, 2022. *PPL Montana, LLC*, 141 FERC ¶ 62,109 (2012).

Article 405: Article 405 provides that, prior to any dredging or excavation activities requiring Clean Water Act from the Corps of Engineers, the licensee shall file for FERC approval a plan for conducting such activities. The article also specifies the content of the plan. Upon FERC approval, the licensee shall implement the plan, including any changes required by FERC. FERC approved PPLM's most recent such plan (for the Cochrane Reservoir) on May 22, 2012. *PPL Montana, LLC*, 139 FERC ¶ 62,144 (2012).

Article 406: Article 406 provided that, prior to the scheduled powerhouse rehabilitation construction at the Hauser Development, the licensee (after consultation with the USFWS, the MDFWP, and other "interested entities") would submit for FERC approval a plan for gas supersaturation monitoring during construction. The plan was to include documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. FERC approved PPLM's plan on January 26, 2004. *PPL Montana, LLC*, 106 FERC ¶ 62,064 (2004).

Article 407: By this article, FERC reserved the authority to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior. The Secretary to date has not taken such action.

Articles 408, 409, 412, 414, 416, and 417: Articles 408, 409, and 412 require the licensee to implement various fisheries mitigation and enhancement measures and post-licensing evaluation and monitoring for the Madison River. Articles 414, 416, and 417 require the licensee to implement various fisheries mitigation and enhancement measures and post-licensing evaluation and monitoring for the Hauser, Holter, and the five Great Falls reservoirs and their tailwaters on the Missouri River. The articles require the plans to be prepared in consultation with the USFWS, the MDFWP, the MDEQ and other "interested entities." FERC approved PPLM's most recent revised plans on January 14, 2009, directing that the next set of revised plans be filed by December 31, 2013. *PPL Montana, LLC*, 126 FERC ¶ 62,028 (2009).

Articles 411, 418, 421, 423 and 424: These articles require the licensee to file for FERC approval (after consultation with the USFS, the USFWS, the MDFWP, and the U.S. Bureau of Land Management ("BLM")) plans for protection, mitigation, and enforcement ("PM&E") of wildlife, threatened and endangered ("T&E") species, and terrestrial habitat resources on the Madison and Missouri Rivers (collectively, the "Wildlife Plan"). On April 10, 2008, in response to PPLM filings, FERC directed the licensee to file monitoring reports with FERC by November 30 of the year following monitoring (2007, and every five years thereafter). PPLM made its most recent submission on November 12, 2012, and its next submission is scheduled for November 27, 2017.

Article 413: Article 413 required the licensee to develop a three-year plan for continued thermal monitoring of water temperatures and a pulse flow protocol for the lower Madison River downstream from the project's Madison development. The Article required the licensee, at the end of the three-year monitoring period, to submit to FERC for approval a final pulse flow protocol, developed in consultation with state and federal resource agencies and other interested entities. PPLM's plan was approved by FERC on December 21, 2004. *PPL Montana, LLC*, 109 FERC ¶ 61,303 (2004). The December 2004 order required the licensee to file, within five years from the date of the order, and every five years thereafter, a report on the performance of the licensee's pulse flow protocol, including comments from the USFWS, the MDFWP, and the MDEQ. FERC approved PPLM's most recent submission on December 23, 2009, and the next update is schedule for December 30, 2014. *PPL Montana, LLC*, 129 FERC ¶ 62,222 (2009).

Article 415: Article 415 requires an annual flow window excursion report describing deviations from target flows at the Hauser, Holter, and Morony developments to evaluate appropriate operational and electrical improvements that can minimize flow excursions under Article 403 and reduce impacts to downstream fisheries resources. PPLM made its most recent submission, for filing year 2012, on February 25, 2013. The next submission is scheduled for March 30, 2014.

Article 419: Article 419 requires that the licensee file for FERC approval a plan to coordinate and monitor flushing flows in the upper Madison River, downstream of Hebgen Dam. The plan should include, but not be limited to, a provision for monitoring flushing flow needs in the upper Madison River near Kirby Ranch in 2002 and every five years thereafter, and a provision to coordinate flushing flows in the lower Madison River below Madison Dam with flushing flow requirements in the upper Madison. PPLM filed its most recent five-year plan on March 22, 2013, which FERC approved on June 3, 2013. *PPL Montana, LLC*, 143 FERC ¶ 62,165 (2013). The next revised plan is scheduled for March 1, 2014.

Article 420: Article 420 required the licensee to file, for FERC approval and subsequent implementation, a plan to restore flows in the Madison and Missouri Rivers downstream of the Madison, Holter, Hauser, and Morony developments within thirty minutes of a plant trip. Article 402 required that plan specify the construction, operation, and maintenance of a guaranteed priority streamflow device (approved by USFS), as part of proposed modifications to the Hauser Development. In addition, Article 420 required that the licensee install dam structure upgrades (i.e., automated spillway gates) at Hauser and Madison Dams, and modify the slide gates on the Holter Dam spillway and two of the nine radial gates on the Morony Dam spillway. Finally, Article 420 required plans to install and monitor a water measurement control section with a continuous recording gauge to demonstrate compliance with daily and hourly average flow requirements at the Hauser Development, prepared after consultation with the USFS, the US Geological Survey ("USGS"), and the MDEQ. FERC approved PPLM's plan on April 2, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,007 (2002).

Article 425: The licensee must implement the "Programmatic Agreement Among the Federal Energy Regulatory FERC, the Advisory Council on Historic Preservation, and the Montana State Historic Preservation Office Regarding the Licensing and Continued Operation of the Missouri-Madison Hydroelectric Generating Project (FERC Project No. 2188)," executed on

May 6, 1998, including, but not limited to, the Cultural Resources Management Plan (“CRMP”) for the project. The Programmatic Agreement requires the licensee to annually file a compliance report with FERC and the Montana SHPO. PPLM filed its most recent compliance report on March 25, 2013, and its next report is scheduled for March 2014.

Article 426: Article 426 required the licensee—after consultation with the USFS, the BLM, the MDFWP, and the Montana SHPO—to prepare and file for FERC approval a plan for managing recreational resources at the project. The Plan was to include, but not be limited to, specific provisions for recreational development at Hebgen, Madison, Hauser, Holter, Rainbow, Cochrane, and Morony Developments, and for four public access sites to the Missouri River. Finally, the licensee was required to file a revised proposal for recreational development at the Black Eagle Recreation Area. On December 18, 2001, PPLM filed the comprehensive recreation plan (with supplemental filings on January 18, March 8, and April 5, 2002) (the “CRP”). On June 11, 2002, FERC approved the CRP. *PPL Montana, LLC*, 99 FERC ¶ 62,170 (2002). Since then, PPLM has updated the plan at least twice. On June 16, 2005, PPLM filed a 2004 CRP for FERC’s review and comment. We did not find any FERC Order approving the 2004 CRP, and it does not appear that PPLM has filed subsequent revisions. The most recent public version, the 2010 CRP, is posted on a public website PPLM maintains to provide Missouri-Madison stakeholder with news about the CRP and related development,³ and it appears that PPLM views the CPR as an organic document.⁴

Most of the terms of the 2001-02 comprehensive plan that was approved by FERC, including several specific fixed financial contributions, have been completed. Some ongoing obligations continue, however:

- *Rumbaugh Ridge/Fisherman’s Point (Hebgen):* Licensee is required to contribute up to \$3,500 annually to operating and maintaining the site;
- *RV Dump Station (Hebgen):* Licensee is required to contribute up to \$5,000 annually to operating and maintaining the site, and Licensee is responsible for operating and maintaining the site via contract with a private service provider;
- *Hebgen Dam Day-Use Area:* Licensee is required to contribute up to \$6,500 annually to operating and maintaining the site;
- *Hebgen Shoreline Plan:* Under the original monitoring program, PPLM was required to conduct annual monitoring trips to inspect for compliance with the program, which are to include videotaping/photographing of each inspection and written descriptions of any activities that are not in compliance with the shoreline plan;
- *Madison Site Operation & Maintenance:* Licensee is required to contribute up to \$35,000 annually to supplement the BLM, MDFWP, and Licensee recreation management responsibilities on Ennis Lake and in Upper Bear Trap Canyon; this

³ <http://www.missourimadison.com#1>

⁴ PPLM’s June 16, 2005 submission of the 2004 CRP referenced the company’s plan to revise the CRP in 2009. The June 16, 2005 submission also asked that FERC contact Mr. Jourdonnais if the agency had any questions about the “Project 2188 recreation program.” To date, we have found no written record of any such questions being raised.

includes road maintenance and weed control and any other responsibilities included in the three-party cooperative management agreement between Licensee, BLM, and the MDFWP;

- *Devil's Elbow (Hauser)*: Licensee is required to contribute up to \$40,000 annually to supplement the BLM's operation and maintenance costs for all BLM recreation sites on Hauser and Holter Reservoirs and the associated RV dump stations if they are constructed on BLM property;
- *White Sandy Beach (Hauser)*: Licensee is required to contribute up to \$50,000 annually to supplement the MDFWP recreation management responsibilities at White Sandy Beach and the Hauser Dam Access Site;
- *Meriwether Picnic Area and Coulter Campground (Holter)*: Licensee is required to contribute up to \$16,500 annually for operation and maintenance at the two recreation areas;
- *Shuttle Service (Great Falls Area)*: Licensee maintains portage sign at City of Great Falls canoe take-out ramp;
- *Four River Access Sites*: Licensee is required to contribute up to \$10,000 annually for the operation and maintenance of each site;
- *Fort Benton Motorboat Launch Area*: Licensee is required to contribute up to \$5,000 annually for the operation and maintenance of the area;
- *Fort Benton Canoe Launch and Campground*: Licensee is required to contribute up to \$5,000 annually for the operation and maintenance of the area;
- *Cochrane Dam Crossing*: Licensee is required to operate and maintain the crossing, and to contribute up to \$2,000 annually for the operation and maintenance of the crossing;
- *Ryan Island Day-Use Area*: Licensee operates and maintains the site;
- *MDFWP Managed Recreation Sites*: Licensee is required to contribute up to \$55,000 annually to supplement the MDFWP operation and maintenance costs for Black Eagle Memorial Island, the Rainbow Boat Launch, the Lewis and Clark Heritage Greenway Conservation Easement, the Pedestrian/Bicycle Trail, the Sulfur Springs Trailhead, and the Widow Coulee Fishing Access Site.

Article 427: Article 427 requires the licensee, after consulting the USFS, the BLM, and the MDFWP, to monitor recreation use of the project area to determine whether existing recreation facilities are meeting recreation needs. The monitoring studies were to begin within six years after issuance of the license and are to be reported to FERC every six years thereafter, in conjunction with FERC Form 80.⁵ The report is to include: (1) annual recreation use figures; (2) a discussion of the adequacy of the licensee's recreation facilities at the project site to meet recreation demand; (3) a description of the methodology used to collect all study data; (4) if there is a need for additional facilities, a recreation plan proposed by the licensee to accommodate recreation needs in the project area; (5) documentation of agency consultation and agency comments on the report after it has been prepared and provided to the agencies; and (6) specific descriptions of how the agencies' comments are accommodated by the report. FERC approved

⁵ 18 C.F.R. § 8.11. FERC Form 80. Form 80 is used to gather information necessary for FERC and other agencies to know what recreational facilities are located at licensed projects, whether public recreational needs are being accommodated by the facilities, and where additional efforts could be made to meet future needs.

PPLM's most recent report on November 10, 2010. *PPL Montana, LLC*, Project No. 2188-030, Unpublished Letter Order re: Recreation Report (Nov. 10, 2010). The next report is due on or before April 1, 2015.

Article 428: Article 428 contains parallel use and occupancy provisions found in Article 404 for the Mystic Lake Hydroelectric Project (*see above*).

Appendix A – MDEQ Conditions Incorporated into the License: Appendix A to the license order contains the state's conditions to the water quality certification issued for the Missouri-Madison Project on September 3, 1993 by the MDEQ.

1. The licensee shall, prior to any changes in the operation of Cochrane, Ryan, or Morony Reservoirs, submit to the Montana Department of Health and Environmental Services ("DHES")⁶ a written evaluation of the potential for ground water contamination, and elevated concentrations in downstream surface water, which are likely to be caused by the proposed changes. The evaluation plan must be approved by DHES prior to its implementation.
2. The licensee shall, prior to changing its peaking operations at Cochrane and Morony Reservoirs, complete an evaluation of the potential for bank erosion and mass wasting at these reservoirs to result from changes in operations.
3. The licensee was required, within three months of issuance of the FERC license, to submit Drawdown Operational Plans for Black Eagle and Morony dams for DHES approval.
4. The licensee shall submit reservoir dredging and monitoring plans for all reservoirs at least three months prior to any dredging. Upon approval or modification by the DHES the licensee shall implement the plans according to their terms and schedules.
5. The licensee was required to develop and implement a water quality monitoring plan for all projects. *See discussion of Article 404, above.*
6. The licensee was required, within three months after issuance of the FERC license, to submit for DHES approval a toxic algae monitoring plan for Hebgen Reservoir.
7. The licensee shall, within one year after issuance of the FERC license, begin monitoring the bank erosion at each project reservoir. The licensee shall submit monitoring plans for all reservoirs at least three months prior to monitoring. *See discussion of Article 402, above.*
8. The licensee shall apply for and receive any necessary permits and authorizations from DHES prior to any construction activities.
9. The licensee shall maintain minimum flows of 200 cfs from April 1 through June 30 and 80 cfs from July 1 through March 31 in the portion of the Madison River from the Madison Dam to the Madison Power House. *See discussion of Article 420, above.*

⁶ The MDEQ is the successor agency to the DHES.

10. The licensee, within one year after issuance of the FERC license, was required to develop for DHES approval reservoir drawdown criteria for nonemergency drawdowns of each reservoir. Upon approval or modification by the DHES, the licensee may then change its operations consistent with the drawdown criteria. *See* discussion of Article 403, above.
11. Any operations under this license that would result in water quality which is worse than conditions associated with reasonable operation of the licensee's dams at July 1, 1971, must to the extent of the worsened condition, be reviewed and approved under the nondegradation policy at Section 75-5-303, MCA prior to commencement.⁷

Appendix B: USFS Conditions Incorporated into License

1. The licensee cannot not implement USFS-mandated conditions without completion of USFS review.
2. USFS approval is required before any ground-disturbing actions occur on National Forest System land.
3. The licensee shall obtain written approval from the USFS prior to making any changes in the location of any constructed project features or facilities, or any changes in the uses of USFS-administered lands and waters, or any departure from the requirements of any approved exhibits filed with FERC.
4. Each year during the 60 days preceding the anniversary date of the license, the licensee shall consult with the USFS with regard to measures needed to ensure protection and development of the natural resource values of the project area. Within 60 days following such consultation, the licensee shall file with FERC evidence of the consultation with any recommendations made by the USFS. FERC reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection.
5. This condition sets out detailed disputed resolutions procedures in order to expedite the review of disputed USFS orders or directions given during construction.
6. This condition sets out instream flow requirements in the Madison River below Hebgen Dam, on the Madison River at Kirby Ranch, and on the Madison River below the Madison development.
7. The licensee shall construct, operate, and maintain a guaranteed priority streamflow device, approved by the USFS, as part of the diversion/intake structure. At least 90 days prior to beginning construction of the diversion structure, the licensee shall file for FERC approval functional design drawings and an implementation schedule for the guaranteed priority streamflow device. FERC approved the device on April 2, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,007 (2002). *See* discussion of Article 420, above.
8. Within six months of license issuance, the licensee had to file for FERC approval a plan approved by the USFS for monitoring toxic algae blooms in Hebgen Reservoir

⁷ Condition 12 of Appendix A simply provided that the certification represented final agency action under Montana law.

throughout the term of the license. FERC approved the plan on January 16, 2002. *PPL Montana, LLC*, 98 FERC ¶ 62,020 (2002). See discussion of Article 404, above.

9. The licensee shall establish two water quality stations: (1) Madison River above Hebgen Reservoir and (2) Madison River below Hebgen Dam. The licensee shall assist the MDEQ and the Gallatin County Health Department in monitoring toxic algae in Hebgen Reservoir. The licensee shall also fund an annual water quality enhancement account that may be used for monitoring toxic algae blooms in Hebgen Reservoir, monitoring and treating appropriate point source discharges, sediment control projects, and applied water quality research studies in the Missouri-Madison river system.
10. Within one year of the issuance of the license, the Licensee had to file for FERC approval a USFS-approved plan for a baseline study which will delineate the growth and distribution of submerged macrophytes and their use by waterfowl and reservoir fisheries in Hebgen Reservoir. FERC approved the plan on May 23, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,135 (2002). See discussion of Article 411, above.
11. At least one year prior to scheduled implementation, the licensee shall notify the USFS of any land-clearing, land-disturbing, or other activity proposed for National Forest System land that may potentially have adverse effects to “sensitive species.”
12. Within six months of the issuance of the license, the licensee had to file for FERC approval USFS-approved plans for the completion of the Hebgen Development comprehensive bald eagle habitat protection and enhancement plan. FERC approved the plan on April 30, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,084 (2002). See discussion of Article 421, above.
13. Within one year following the date of issuance of the license, the licensee had to prepare and file for FERC approval a project operations erosion and sedimentation control plan (“ESCP”). The most current plan was approved by FERC on October 29, 2009. *PPL Montana, LLC*, 129 FERC ¶ 62,086 (2009). See discussion of Article 405, above.
14. Within one year of the issuance of the license, the licensee shall conduct an assessment of the project’s overhead transmission lines on National Forest System. Within three years of the issuance of the license, the licensee had to develop a USFS-approved plan for the implementation of necessary modifications to the project’s overhead transmission lines on National Forest System land, and file the USFS-approved plan and assessment with FERC. *PPLM* filed the plan on March 27, 2002, and FERC approved it on May 16, 2002. *PP&L Montana, LLC*, 99 FERC ¶ 62,116 (2002). See discussion of Article 424, above.
15. Within one year of the issuance of the license, and before starting any activities the USFS determines to be of a land-disturbing nature on National Forest System land, the licensee had to file with FERC a USFS-approved plan for vegetation management.
16. Within one year of the issuance of the license, or at least ninety days prior to starting any land-clearing, land-disturbing, or spoil-producing activities, or other action that may have potential negative effects on scenery, the licensee had to file for FERC approval a USFS-approved plan for the design and construction of the project facilities in order to preserve or enhance the scenic quality of the project area.

17. Within one year after issuance of the license, the licensee had to file for FERC approval a USFS-approved plan for implementing measures to mitigate project-induced recreation and provide for other recreation needs over the life of the project. FERC approved the plan on June 11, 2002. *PPL Montana, LLC*, 99 FERC ¶ 62,170 (2002). See discussion of Article 426, above.
18. At least ninety days prior to starting any land-clearing, land-disturbing, or spoil-producing activities affecting national forest land, the licensee shall file for FERC approval a USFS-approved plan for traffic management and public safety.
19. After consultation with the USFS and before starting construction or maintenance activities which the USFS determines may affect another authorized activity on National Forest System land, the licensee must develop and enter into an agreement with the representative for the other activity authorized by the USFS on land in question.
20. Within six months following the date of issuance of this license, the licensee had to file a revised exhibit of the project boundary, approved by the USFS, that displays only those facilities at Hebgen Lake needed for reservoir operation and maintenance as being within the project boundary. PPLM submitted this on December 20, 2000.

Memoranda of Understanding: While the proceeding leading to the issuance of September 27, 2000 license was pending before FERC, the Montana Power Company (the processor licensee to PPLM) executed a Memorandum of Understanding (“Recreation MOU”) with various Montana counties,⁸ the USFS, the BLM, the MDFWP, and the U.S. Bureau of Reclamation. The Recreation MOU implements the Missouri-Madison River Fund Grant Program to address ongoing needs for public recreation in the Missouri-Madison Project Area. Now administered by PPLM as the project licensee, the Grant Program annually awards grants (along with PPLM matching funds) for qualifying projects. The Recreation MOU and the obligations thereunder remain in effect for the life of the license.

In addition, on January 1, 2009, PPLM executed a second MOU with state and federal resource management agencies to provide funding and to form several Technical Advisory Committees to implement license requirements for the protection, mitigation, and enhancement of fisheries, wildlife, and water quality in the Madison and Missouri River drainages. This additional MOU is renewable every ten years.

Both MOUs have been submitted and explained to FERC in PPLM submissions and are part of the record in this docket.

⁸ Broadwater, Cascade, Chouteau, Gallatin, Lewis and Clark, and Madison Counties.