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October 28, 2016

**VIA ELECTRONIC AND U.S. MAIL**

PUC Filing Center  
Public Utility Commission of Oregon  
PO Box 1088  
Salem, OR 97308-1088

**Re: UE \_\_\_ – In the Matter of IDAHO POWER COMPANY’s 2017 Annual Power Cost Update**

Attention Filing Center:

Enclosed for filing in the above-referenced matter are an original and five copies of Idaho Power Company’s Direct Testimony of Nicole A. Blackwell (Idaho Power/100-108). Please direct all communications in this matter to:

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A copy of this filing has been served on all parties to the 2016 APCU (UE 301). Please contact this office with any questions.

Very truly yours,

A handwritten signature in black ink that reads "Wendy McIndoo". The signature is written in a cursive, flowing style.

Wendy McIndoo  
Office Manager

Enclosures  
Cc: UE 301 Service List

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**CERTIFICATE OF SERVICE**

I hereby certify that I served a true and correct copy of the foregoing document in Docket UE \_\_\_ on the following named person(s) on the date indicated below by email addressed to said person(s) at his or her last-known address(es) indicated below.

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DATED: October 28, 2016

  
\_\_\_\_\_  
Wendy McIndoo  
Office Manager

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

UE \_\_\_\_

IN THE MATTER OF IDAHO POWER )  
COMPANY'S 2017 ANNUAL POWER )  
COST UPDATE )  
OCTOBER UPDATE )  
\_\_\_\_\_ )

**IDAHO POWER COMPANY**  
**DIRECT TESTIMONY**  
**OF**  
**NICOLE A. BLACKWELL**

**October 28, 2016**

1 **Q. Please state your name, business address, and present occupation.**

2 A. My name is Nicole A. Blackwell. I am employed by Idaho Power Company ("Idaho  
3 Power" or "Company") as a Regulatory Analyst I in the Regulatory Affairs  
4 Department. My business address is 1221 West Idaho Street, Boise, Idaho 83702.

5 **Q. Please describe your educational background.**

6 A. In May of 2010, I received Bachelor of Science degrees in Finance and Economics  
7 from the University of Idaho. I have also attended "The Basics: Practical Regulatory  
8 Training for the Electric Industry," an electric utility ratemaking course offered  
9 through New Mexico State University's Center for Public Utilities, and "Electric Utility  
10 Fundamentals & Insights," an electric utility course offered through the Western  
11 Energy Institute.

12 **Q. Please describe your business experience with Idaho Power.**

13 A. In January 2016, I accepted my current position at Idaho Power as a Regulatory  
14 Analyst in the Regulatory Affairs Department. As a Regulatory Analyst, I am  
15 responsible for running the AURORA model ("AURORA") to calculate net power  
16 supply expenses ("NPSE") for ratemaking purposes, as well as the determination of  
17 the marginal cost of energy used in the Company's marginal cost analyses. My  
18 duties also include providing analytical support for other regulatory activities within  
19 the Regulatory Affairs Department.

20 **Q. What is the purpose of your testimony in this proceeding?**

21 A. The purpose of my testimony is to present the determination of the Company's 2017  
22 October Update, the first portion of the Company's Annual Power Cost Update  
23 ("APCU"). If approved, the 2017 October Update will result in a revenue increase of  
24 approximately \$1.5 million, or 2.64 percent, to become effective June 1, 2017.

25 **Q. How is your testimony organized?**

26

1 A. My testimony begins with a brief history of the APCU and the filing requirements  
2 associated with it. Next, my testimony describes the required updates to AURORA  
3 and the modeling results of those changes. I then present and discuss the total  
4 NPSE for the 2017 October Update and how it compares to last year's 2016 October  
5 Update. My testimony concludes with the quantification of the projected revenue  
6 deficiency and the proposed rate implementation to eliminate that deficiency.

7 **Q. Have you prepared exhibits for this proceeding?**

8 A. Yes. I am sponsoring the following exhibits:

- 9 1. Exhibit 101, AURORA modeling determination of normalized power supply  
10 expenses for April 1, 2017 – March 31, 2018
- 11 2. Exhibits 102 – 104, Forward Price Curves, Producer Price Index, and  
12 Forward Prices used for re-pricing purchased power and surplus sales
- 13 3. Exhibit 105, total normalized base power supply expenses for the 2017  
14 October Update
- 15 4. Exhibit 106, year-over-year differences in modeled NPSE
- 16 5. Exhibit 107, Revenue Spread
- 17 6. Exhibit 108, Calculation of Revenue Impact

18 **APCU Overview**

19 **Q. What is the APCU?**

20 A. The APCU is a rate mechanism that is comprised of two components, an October  
21 Update and a March Forecast. The October Update establishes the prospective  
22 "base" or "normal" power supply expenses based on an April through March test  
23 period. The March Forecast is a forecast of expected power supply expenses over  
24 the same test period as the October Update. "Base" or "Normal" power supply  
25 expenses are calculated by modeling the test period under multiple water conditions;  
26 in this case the Company modeled 88 water conditions (1928-2015). Expected

1 power supply expenses are calculated by modeling the same test period as the  
2 October Update, except the power supply expenses are calculated by modeling a  
3 single forecast water condition from the Northwest River Forecast Center. The  
4 results of the October Update are reflected as an update to base rates and the  
5 results of the March Forecast are reflected in the March Forecast Rate Adjustment  
6 listed in Schedule 55, with both of the rate adjustments going into effect on June 1<sup>st</sup>  
7 of each year.

8 **Q. What is the definition of the term “net power supply expense” as the Company**  
9 **and the Commission have used the term historically?**

10 A. The Company and the Public Utility Commission of Oregon (“Commission”) have  
11 used the term “net power supply expense” to refer to the sum of the following  
12 Federal Energy Regulatory Commission (“FERC”) accounts: fuel expense (FERC  
13 Accounts 501 and 547) and purchased power expenses (FERC Account 555), minus  
14 surplus sales revenues (FERC Account 447).

15 **Q. What regulatory actions led to the implementation of the APCU?**

16 A. In its Order issued in Idaho Power’s rate case, UE 167, the Commission specifically  
17 recognized the Company’s unique reliance on hydro generation and its extended  
18 amortization of deferred costs, and therefore directed the parties to work together to  
19 “consider whether there is a more effective regulatory mechanism for Idaho Power to  
20 recover its allowable power costs.” (Order No. 05-871, p. 7). Following that Order,  
21 the Company filed its request for a power cost adjustment mechanism (“PCAM”) and  
22 the result of that filing was a settlement stipulation approved by the Commission in  
23 Order No. 08-238 that approved the APCU, and the implementation of the PCAM or  
24 the annual power supply expense true-up.

25 **Q. What is the purpose of the APCU?**

26

1 A. The APCU was implemented to adjust rates on an annual basis to capture variability  
2 in power supply expenses that occur with a predominantly hydro-based generation  
3 fleet. The APCU mechanism closely aligns the power supply expenses included in  
4 customer rates with the power supply expenses actually incurred by the Company.  
5 Prior to the APCU, the Company would defer excess power supply expenses and  
6 then amortize them at a later time for collection, which led to multiple deferrals and  
7 long amortization periods.

8 **Q. What are the requirements of Order No. 08-238?**

9 A. Order No. 08-238 directed the Company to model its power supply expenses using  
10 the AURORA model, and it also identified a number of variables that were to be  
11 updated annually in AURORA. The specific variables are discussed in the following  
12 section.

13 **Q. What is the AURORA model?**

14 A. The AURORA model is a comprehensive electric resource dispatch model that  
15 simulates the economic dispatch of the Company's resources to determine NPSE for  
16 the APCU. The Commission has also accepted the use of AURORA to determine  
17 NPSE for general rate cases, marginal cost analyses, and resource modeling for the  
18 Company's Integrated Resource Plan.

19 **AURORA Model Inputs and Modeling Results**

20 **Q. What are the specific variables that are to be updated during each APCU**  
21 **filing?**

22 A. Commission Order No. 08-238 identified the following power supply expense  
23 variables to be updated annually:

- 24 a. Fuel prices and transportation costs
- 25 b. Wheeling expenses
- 26 c. Planned outages and forced outage rates

- 1 d. Heat rates
- 2 e. Forecast of normalized load and normalized sales
- 3 f. Contracts for wholesale power and power purchases and sales
- 4 g. Forward price curve
- 5 h. Public Utility Regulatory Policies Act of 1978 ("PURPA") contract expenses
- 6 i. The Oregon state allocation factor

7 For this year's October Update, the Company reviewed all of the inputs and updated  
8 those inputs that have changed since last year's October Update, which are  
9 described in more detail in the following section of my testimony.

10 Fuel Expense

11 **Q. Have any changes in the variable cost of coal production occurred since last**  
12 **year's October Update filing?**

13 A. Yes. The per-unit variable cost of production for each of the Company's coal-fired  
14 thermal generation plants has been updated to reflect current operating costs. The  
15 per-unit cost of output at the Jim Bridger plant ("Bridger") has increased from \$28.79  
16 per megawatt-hour ("MWh") to \$32.53 per MWh. The per-unit cost of output at the  
17 Boardman plant ("Boardman") increased, moving from \$25.32 per MWh to \$28.06  
18 per MWh. The per-unit cost of output at the North Valmy plant ("Valmy") has  
19 increased from \$47.18 per MWh to \$49.91 per MWh.

20 **Q. Did the Company make any modifications to the methodology used to**  
21 **determine the per-unit variable cost of coal production for the 2017 APCU**  
22 **filing?**

23 A. Yes. The Company modified its treatment of Oil, Handling, and Administrative and  
24 General ("OHAG") expenses included in the total per-unit variable cost of coal  
25 production to align with the terms of the settlement stipulation ("Stipulation")  
26 approved by Order No. 16-206 in the Company's 2016 APCU, Docket No. UE 301.



1 **Q. Please provide a summary of the 2016 APCU Stipulation as it pertains to the**  
2 **modeling of OHAG expenses.**

3 A. Idaho Power, Staff of the Public Utility Commission of Oregon, and the Citizens'  
4 Utility Board of Oregon worked together to develop a "hybrid model" to address the  
5 unique nature of OHAG expenses. The intent of the hybrid model was to separately  
6 identify OHAG costs associated with Idaho Power's dispatch of each plant and Idaho  
7 Power's share of OHAG expenses incurred due to the dispatch of each plant by the  
8 Company's ownership partners. Per the terms of the Stipulation, the parties agreed  
9 to the use of the hybrid model results for determining the final 2016 APCU revenue  
10 requirement, and agreed that the Company should apply the hybrid methodology  
11 when filing its 2017 APCU.

12 **Q. Please provide a description of the makeup and purpose of OHAG expenses.**

13 A. As mentioned previously, OHAG expenses consist of the oil, handling, and  
14 administrative and general expenses incurred at each of the Company's coal-fired  
15 plants. The oil component consists of diesel oil burned at the plant for startup and  
16 flame stabilization. The handling component includes the labor, equipment,  
17 materials and supplies, and the related overhead loading on these costs to move  
18 coal from the train trestle (all three plants) or conveyor (at Bridger) to the coal silos in  
19 the plant. The administrative and general component includes labor associated with  
20 coal fuel procurement and routine fuel analyses.

21 **Q. How is Idaho Power's share of OHAG expenses determined at each of its**  
22 **jointly-owned coal-fired facilities?**

23 A. Per the terms of the operating agreements for all three jointly-owned plants, Idaho  
24 Power is required to pay a percentage of total OHAG expenses incurred at each  
25 plant that is proportional to the Company's ownership share, regardless of the  
26 Company's dispatch of each plant.

1 **Q. Does Idaho Power's 2017 APCU model OHAG utilizing the hybrid methodology**  
2 **as agreed upon in the Stipulation?**

3 A. Yes. For the 2017 October Update, the per-MWh OHAG expense, included within  
4 the AURORA model, has been updated to reflect the amount of OHAG expense  
5 driven by Idaho Power's dispatch of each plant. The Company has separately  
6 accounted for its proportional share of the total OHAG expense incurred at each of  
7 the plants.

8 **Q. Have you prepared an exhibit that illustrates the calculation of OHAG**  
9 **expenses for the 2017 APCU?**

10 A. Yes. Exhibit 101 reflects the AURORA-modeled OHAG expense resulting from  
11 Idaho Power's dispatch, as well as Idaho Power's fixed ownership share of total  
12 OHAG expense at each plant. This methodology effectively includes in the  
13 AURORA dispatch price the true variable component of OHAG driven by the  
14 Company's dispatch of each plant. After the AURORA-modeled dispatch has  
15 occurred, the resulting costs are adjusted to align with costs actually incurred by the  
16 Company at each of its coal-fired facilities.

17 Line 4 of Exhibit 101 illustrates the AURORA-modeled OHAG expense  
18 resulting from Idaho Power's dispatch of Bridger. Line 5 of Exhibit 101 is the  
19 difference between the total AURORA-modeled expenses, Line 3, and the AURORA-  
20 modeled OHAG expense, Line 4, at Bridger ( $\$61,890.9 - \$240.5 = \$61,650.5$ ). Line  
21 6 of Exhibit 101 represents the Company's fixed ownership share of total OHAG  
22 expenses at Bridger;  $\$3,538.4$  on an annual basis. Finally, Line 7 of Exhibit 101 is  
23 the sum of the AURORA-modeled expenses (less the AURORA-modeled OHAG at  
24 Bridger), Line 5, and the Company's proportional share of total OHAG, Line 6,  
25 ( $\$61,650.5 + \$3,538.4 = \$65,188.9$ ); this line reflects the total NPSE for Bridger for  
26 the 2017 October Update.

1 **Q. Will parties have an opportunity to discuss the modeling of OHAG expenses in**  
2 **the 2017 APCU?**

3 A. Yes. Per the terms of the Stipulation approved in the 2016 APCU, the stipulating  
4 parties will hold a workshop to discuss the hybrid model filed by Idaho Power in the  
5 2017 APCU and the treatment of expenses related to the Company's proportionate  
6 share of OHAG resulting from its ownership partners' dispatch at each plant.

7 **Q. Aside from the change in the treatment of OHAG expenses, please explain**  
8 **other factors contributing to the change in the per-unit variable cost of**  
9 **production since last year's October Update.**

10 A. The per-unit variable cost of coal production can vary year-to-year due to fluctuations  
11 in everyday operations. These normal variations can be attributed to price variability  
12 provided for in existing contracts for coal supply and shipment and variability in plant  
13 and coal yard operations. In addition to normal variations in coal fuel costs that  
14 should be expected from year to year, there were additional factors that contributed  
15 to the changes in coal costs at Bridger.

16 The increase in coal fuel expense at Bridger is driven by changes in coal  
17 production volumes at the Bridger Coal Company ("BCC") mine. Lower market  
18 prices, coupled with low-cost natural gas, is causing generation from the Company's  
19 gas-fired units, as well as increased market purchases, to displace generation at  
20 coal-fired units. As a result of lower generation at Bridger, the BCC mine plan has  
21 been adjusted to reflect reduced coal volumes. Lower production at the mine results  
22 in fixed costs being recovered over fewer tons, causing the cost per ton of coal to  
23 increase.

24 **Q. Given the decrease in coal production volumes at BCC, is the Company**  
25 **working with its ownership partner to develop a revised fueling plan for**  
26 **Bridger?**

1 **A.** Yes. Idaho Power and PacifiCorp are ownership partners in the BCC mine and  
2 Bridger. As part of PacifiCorp's 2017 Transition Adjustment Mechanism filing,  
3 Docket No. UE 307, PacifiCorp proposed that the Commission open an expedited  
4 docket to consider the least-cost, least-risk fuel supply for Bridger. It is Idaho  
5 Power's understanding that as part of this proposed docket, PacifiCorp intends to file  
6 an updated Long-Term Fuel Plan in early 2017. Idaho Power plans to work  
7 alongside PacifiCorp to develop an appropriate fueling strategy for Bridger. It is  
8 anticipated that changes in Bridger fueling costs, resulting from an updated Long-  
9 Term Fuel Plan, would be captured in Idaho Power's 2017 APCU March Forecast.

10 **Q. How does the natural gas price forecast for the 2017 October Update compare**  
11 **to last year's October Update?**

12 **A.** The Company has updated its natural gas price forecast for the 2017 October  
13 Update. The Henry Hub price used for the 2016 October Update was \$3.06 per  
14 MMBtu, while the Henry Hub price used in the 2017 October Update is \$3.05 per  
15 MMBtu, a decrease of \$0.01 per MMBtu.

16 **Q. Have there been any changes to the inputs used to determine the natural gas**  
17 **price forecast since last year's October Update?**

18 **A.** Yes. For the previous eight APCU filings, the natural gas price forecast used the  
19 Northwest Power and Conservation Council ("NWPCC"), New York Mercantile  
20 Exchange ("NYMEX"), Natural Gas Exchange ("NGX"), Energy Information  
21 Administration ("EIA"), and Moody's forecast data to develop a normalized gas price.  
22 The high and low gas prices were removed and the remaining three gas prices were  
23 averaged.

24 After reviewing the five indices utilized in past filings, the Company  
25 determined that it is no longer appropriate to incorporate two of the five inputs:  
26 NWPCC and NGX. NWPCC has not updated its forecast for several years and

1 therefore is no longer relevant. Additionally, NGX began posting the same  
2 settlements for the Henry Hub forward price curve as NYMEX. Since NYMEX owns  
3 the Henry Hub futures contract, the Company has determined it to be the most valid  
4 exchange to use for a market-based forecast for Henry Hub pricing. Including NGX  
5 in the forecast methodology would double weight the NYMEX data and skew the  
6 forecast gas price. Therefore, NGX was also removed from the forecast.

7 For the 2017 APCU, NYMEX, EIA and Moody's forecast data were included  
8 in the methodology and the median price was selected to determine a normalized  
9 gas price. In future filings, the Company will continue to monitor the NWPC  
10 forecast, and will consider including it in the gas price forecast determination if it has  
11 been appropriately updated.

12 PURPA Expense

13 **Q. Please describe any changes to PURPA generation since last year's October**  
14 **Update.**

15 A. Last year's October Update included 361 average megawatts ("aMW") of available  
16 PURPA generation, whereas PURPA generation included in the 2017 October  
17 Update is 352 aMW, a decrease of 9 aMW since last year's October Update.

18 **Q. What is driving the changes in PURPA generation since last year's October**  
19 **Update?**

20 A. The decrease in PURPA generation is primarily due to the termination of an Energy  
21 Sales Agreement between Idaho Power and Pocatello Solar 1, LLC. Termination of  
22 the project resulted in a decrease in forecast PURPA generation of 6.2 aMW.

23 **Q. How has the annual PURPA expense changed from last year's October**  
24 **Update?**

25 A. The annual PURPA expense has increased from \$208.9 million to \$218.1 million, an  
26 increase of \$9.2 million. Updated PURPA contract values drove the increase in

1 PURPA expense, despite a decrease in total generation from last year's October  
2 Update.

3 Normalized Load

4 **Q. Please describe the changes in the Company's system loads since last year's**  
5 **October Update.**

6 A. The Company's annual normalized system load used in last year's October Update  
7 was 1,815 aMW. The Company's annual normalized system load used in this year's  
8 October Update is 1,817 aMW, an increase of 2 aMW. The increase of 2 aMW is  
9 about a 0.1 percent increase in loads between the two test years.

10 Other

11 **Q. What other AURORA inputs were modified from last year's October Update?**

12 A. The Company updated the maintenance rates and forced outage rates for its thermal  
13 plants, which is a consistent practice for every APCU filing.

14 Modeling Results

15 **Q. Have you prepared an exhibit that summarizes the results of the AURORA**  
16 **model with all of the updated inputs described above?**

17 A. Yes. Exhibit 101 shows the results of the AURORA modeling determination of  
18 normalized NPSE for the April 2017 through March 2018 test year. Exhibit 101  
19 presents the summary of results containing average variable power supply  
20 generation output and expenses based on 88 historical water conditions.

21 **Q. Please summarize the sources and disposition of energy shown on Exhibit**  
22 **101.**

23 A. As can be seen on Exhibit 101, hydro generation supplies 8.7 million MWh,  
24 approximately 48 percent (8.7 million MWh / 17.9 million MWh = 48 percent) of the  
25 generation mix. Thermal generation supplies 5.1 million MWh (Bridger 2.0,  
26 Boardman 0.3, Valmy 0.3, Langley Gulch 2.2, Danskin 0.2, Bennett Mountain 0.1),

1 approximately 28 percent (5.1 million MWh / 17.9 million MWh = 28 percent) of the  
2 generation mix. Purchases of power are made up of short-term and longer-term  
3 market purchases, purchased power agreements (“PPA”), and PURPA. PURPA  
4 purchases reflect normalized and annualized generation levels and account for  
5 nearly 3.1 million MWh. PURPA purchases are not included on Exhibit 101;  
6 however, when combined with market purchases and PPAs of 1.1 million MWh, total  
7 purchases amount to 4.2 million MWh (3.1 million MWh + 1.1 million MWh = 4.2  
8 million MWh) or approximately 23 percent (4.2 million MWh / 17.9 million MWh = 23  
9 percent) of the generation mix. Of the 17.9 million MWh generated by the system,  
10 15.9 million MWh are utilized for system loads while 2.0 million MWh are sold as  
11 surplus sales.

12 **2017 Base Net Power Supply Expenses**

13 **Q. How are the Base Net Power Supply Expenses to be calculated for the October**  
14 **Update portion of the APCU according to the settlement stipulation approved**  
15 **in Order No. 08-238?**

16 A. Per the settlement stipulation approved in Order No. 08-238, the output of the  
17 AURORA model will be used to determine net power supply average dispatch cost  
18 for normal loads and average stream flow conditions, and the wholesale electric  
19 prices for purchased power and surplus sales determined by the Company’s power  
20 supply model will be replaced with an average forward electric price curve (Docket  
21 No. UE 195 Stipulation, p. 5).

22 **Re-pricing Based on a Forward Price Curve**

23 **Q. Please describe the re-pricing methodology mentioned above.**

24 A. The Company is required to re-price the AURORA-generated volumes of purchased  
25 power and surplus sales with a forward-based price curve using the Mid-Columbia  
26 (“Mid-C”) hub. This methodology prescribes the use of a one-year average of the

1 daily Mid-C forward price curves calculated from the previous 12 months of daily  
2 Mid-C heavy load ("Mid-C HL") and light load ("Mid-C LL") forward price curves for  
3 the period starting in the April immediately following the current April through March  
4 test period. Forward prices are then adjusted for inflation back one year using the  
5 most recent Producer Price Index for Electric Power.

6 The re-pricing of market prices in the 2017 October Update is based upon the  
7 forward price curves from April 2018 through March 2019 as shown in Exhibit 102,  
8 which were then discounted for inflation back to April 2017 through March 2018  
9 according to the quarterly inflation indices provided in Exhibit 103.

10 **Q. What is the monthly average forward price that is used for the re-pricing of**  
11 **purchased power and surplus sales volumes?**

12 A. Exhibit 104 shows the monthly prices that are used for the re-pricing of purchased  
13 power and surplus sales volumes for the 2017 October Update. The prices range  
14 from a low of \$10.07 to a high of \$33.83.

15 **Q. How does the re-pricing of purchased power and surplus sales, using a normal**  
16 **forward price curve, change purchased power expenses and surplus sales**  
17 **revenues as modeled by AURORA?**

18 A. Lines 32 and 40 of Exhibit 101 show the purchased power expenses and surplus  
19 sales revenues, respectively, before re-pricing as determined by the AURORA  
20 modeling process. Lines 20 and 28 of Exhibit 105 show the same normalized  
21 generation dispatch with purchased power and surplus sales re-priced using the  
22 normalized forward price curve shown in Exhibit 104. A comparison of Exhibit 101  
23 and Exhibit 105 demonstrates the changes due to re-pricing. Purchased power  
24 expenses decreased by \$1.1 million, moving from \$16.0 million to \$14.9 million.  
25 Surplus sales revenues decreased by \$6.9 million, moving from \$49.1 million to  
26 \$42.2 million. In this case, the NPSE resulting from the re-pricing methodology



1 shown on Exhibit 105 is an increase in NPSE of \$5.8 million or approximately \$0.37  
2 per MWh as compared to the AURORA generated expectation shown on Exhibit  
3 101. The difference for the re-pricing of purchased power of \$1.1 million and surplus  
4 sales of \$6.9 million are shown on Exhibit 106, Column J.

5 Per-Unit Cost Calculation

6 **Q. What is the per-unit cost when you combine all of the quantifications**  
7 **described earlier?**

8 A. Exhibit 105 shows that the normalized annual sales at the customer level for the April  
9 2017 through March 2018 test year are 14,661,439 MWh. Based upon test year  
10 sales, the cost per unit for the 2017 October Update to become effective on June 1,  
11 2017, is \$26.06 per MWh ( $\$382.1 \text{ million} / 14.661 \text{ million MWh} = \$26.06 \text{ per MWh}$ ).

12 **Q. How does this \$26.06 per MWh October Update compare to the October Update**  
13 **that resulted from last year's computation?**

14 A. The October Update unit cost which became effective June 1, 2016, was \$23.93<sup>1</sup> per  
15 MWh based upon a determination of total NPSE of \$349.8 million. This year's  
16 October Update per unit cost of \$26.06 per MWh equates to an increase of \$2.13 per  
17 MWh ( $\$26.06 - 23.93 = \$2.13$ ) or a \$32.3 million increase in system NPSE from last  
18 year's October Update.

19 Quantification and Discussion of the Revenue Deficiency

20 **Q. What is the revenue deficiency that results from applying the 2017 October**  
21 **Update per-unit cost to forecast Oregon jurisdictional sales?**

22 A. The revenue deficiency for the October Update is calculated by multiplying the  
23 incremental per-unit cost of \$2.13 per MWh by the Oregon jurisdictional sales for the  
24 April 2017 through March 2018 test period of 686,534.333 MWh and comparing the

25 \_\_\_\_\_  
26 <sup>1</sup> Per the settlement stipulation approved by Order No. 16-206.

1 product of that calculation to the revenue that would exist under the current October  
2 Update rates. The result of this comparison indicates a need for an additional \$1.5  
3 million annually from Oregon customers.

4 **Q. What can be concluded from the information included on Exhibit 106?**

5 A. Exhibit 106 compares the AURORA developed results, the re-pricing of purchased  
6 power and surplus sales, and the differences between the 2016 October Update and  
7 the 2017 October Update. A high level analysis based on the information shown in  
8 Exhibit 106 suggests that low market prices and low-cost natural gas are causing  
9 natural gas generation and increased market purchases to displace coal generation.  
10 At the same time, low market prices have reduced the Company's ability to make off-  
11 system sales.

12 **Q. What are some of the differences in the manner in which resources are  
13 dispatched as shown on Exhibit 106?**

14 A. Column H of Exhibit 106 shows the following: a decrease in coal expenses of \$9.9  
15 million associated with a 0.64 million MWh reduction in generation; an increase in  
16 natural gas expenses of \$6.1 million associated with an increase of 0.10 million MWh  
17 in generation; an increase in purchased power expenses of \$5.9 million associated  
18 with an increase of 0.24 million MWh; an increase in PURPA expenses of \$9.2  
19 million associated with a decrease of 0.08 million MWh; and finally, a decrease in  
20 surplus sales revenue of \$18.8 million associated with a decrease of 0.40 million  
21 MWh.

22 **Q. Can you elaborate more on the changes in generation from the 2016 October  
23 Update to the 2017 October Update?**

24 A. In order to illustrate the changes in generation, Columns D (2016) and F (2017) of  
25 Exhibit 106 calculate the percentage of generation compared to total system load.  
26 For example, Column D, line 1, shows that hydro provided 54 percent of the

1 generation to meet the total system load of 15,898,726 MWh (8,662,089 /  
2 15,898,726 = 54 percent). Based on the 2017 October Update results, hydro  
3 generation was stable at 54 percent; coal generation decreased from 20 percent to  
4 16 percent; natural gas generation increased from 15 percent to 16 percent;  
5 purchased power and PPA increased from 5 percent to 7 percent; PURPA  
6 generation decreased from 20 percent to 19 percent; and lastly, surplus sales  
7 decreased from 15 percent to 12 percent. This comparison between resource type  
8 and total system load shows that market purchases and natural gas resources are  
9 dispatched more frequently than coal resources.

10 **Q. Are the relative changes in expenses between resource types consistent with**  
11 **the changes in output?**

12 A. Yes. The changes in expenses shown in Columns D (2016) and F (2017) of Exhibit  
13 106 are as follows: coal decreased from 27 percent to 22 percent of the total; natural  
14 gas increased from 16 percent to 17 percent; purchased power and PPA increased  
15 from 14 percent to 15 percent; PURPA decreased from 59 percent to 57 percent;  
16 and surplus sales decreased from 17 percent to 11 percent. Exhibit 106  
17 demonstrates that the majority of movement in expenses is related to coal, market  
18 purchases and sales, and natural gas, which is consistent with the changes in  
19 generation.

20 **Q. If less expensive natural gas-fired generation and market purchases are**  
21 **replacing coal generation, why is NPSE increasing as compared to last year's**  
22 **October Update?**

23 A. The forecast natural gas price discussed earlier in my testimony produced an  
24 average per-unit cost of \$20.39 per MWh at the Langley Gulch plant, whereas the  
25 coal per-unit cost varies from \$28.06 to \$49.91 per MWh. Additionally, low market  
26 prices produce an average purchase price of \$26.82 per MWh. Although coal

1 generation was replaced with lower-cost natural gas generation and market  
2 purchases, increased PURPA expenses and decreased surplus sales revenues are  
3 causing an increase in NPSE as compared to last year's October Update.

4 As mentioned previously, PURPA generation decreased slightly from last  
5 year's October Update. However, PURPA contract prices increased. PURPA is a  
6 must take resource regardless of its per-unit cost, which in this instance is \$70.82  
7 per MWh. Additionally, lower market sale prices reduce the Company's ability to  
8 make surplus sales which serve to offset NPSE. As presented in column H of Exhibit  
9 106, surplus sales volumes decreased 0.40 million MWh which resulted in a  
10 reduction of surplus sales revenue of \$18.8 million. The overall effect of reduced  
11 coal generation, increased natural gas generation and market purchases, as well as  
12 increased PURPA costs and decreased surplus sales revenues, is a revenue  
13 deficiency of \$1.5 million between the 2016 October Update and 2017 October  
14 Update.

15 **Q. Did the Company comply with the methodology in Order No. 08-238 when it**  
16 **performed its analysis to determine the NPSE for the 2017 October Update?**

17 A. Yes. The Company has complied with the methodology detailed in Order No. 08-238  
18 for calculating this year's October Update.

19 **Rate Implementation**

20 **Q. What method of allocation are you proposing to spread the incremental**  
21 **revenue requirement associated with the October Update to the various**  
22 **customer classes?**

23 A. I am proposing to allocate the revenue deficiency associated with the 2017 October  
24 Update according to the revenue spread methodology approved by the Commission  
25 in UE 214, Order No. 10-191. Order No. 10-191 established a revenue spread  
26 methodology whereby the revenue deficiency for the October Update is allocated to

1 individual customer classes on the basis of the total generation-related revenue  
2 requirement approved in the Company's last general rate case. In this instance, the  
3 Company's last general rate case, Docket No. UE 233, was a settled case in which  
4 parties did not adopt the Company's class cost-of-service methodology, but rather  
5 agreed to a revenue spread methodology that was set forth in Exhibit B to the Partial  
6 Stipulation filed on February 1, 2012 ("Exhibit B"). In light of the stipulated revenue  
7 spread, the Company has utilized the total generation-related revenue requirement  
8 detailed on Exhibit B to apportion the October Update revenue requirement to each  
9 customer class. The proposed revenue spread resulting from the application of the  
10 stipulated methodology in Docket No. UE 233 is shown on Exhibit 107.

11 **Q. Was the incremental spread of the revenue requirement mentioned above**  
12 **approved in prior years' APCU filings?**

13 A. Yes. The Company used this same methodology in Docket Nos. UE 242, UE 257,  
14 UE 279, UE 293, and UE 301. This methodology was approved in Order No. 12-176  
15 on May 18, 2012.

16 **Q. What is the overall revenue impact in percentage terms of this year's October**  
17 **Update compared to last year's October Update using the rate spread**  
18 **methodology described above?**

19 A. The overall revenue impact of the October Update compared to last year's October  
20 Update is a 2.64 percent increase.

21 **Q. Have you prepared an exhibit showing the summary of revenue impact**  
22 **resulting from the October Update proposed by the Company?**

23 A. Yes. Exhibit 108 provides a summary of the revenue change resulting from this  
24 year's October Update as compared to current revenue.

25 **Q. Does this conclude your testimony?**

26 A. Yes, it does.

Idaho Power/101  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Idaho Power Company's AURORA Modeled Power Supply Expenses for  
April 1, 2017 – March 31, 2018  
Normalized Loads Over 88 Water Year Conditions

October 28, 2016

IPCO POWER SUPPLY EXPENSES FOR APRIL 1, 2017 -- MARCH 31, 2018 (Multiple Gas Prices/88 Years of Hydro Conditions)  
AURORA Developed Results - October Update  
Variable Coal Handling Costs Modeled Using UE 301 Settlement Methodology - October Update  
AVERAGE

Line No.		April	May	June	July	August	September	October	November	December	January	February	March	Annual
1	Hydroelectric Generation (MWh)	886,708.0	953,501.2	920,434.9	701,404.3	480,709.0	562,295.9	544,650.6	459,087.5	679,246.4	761,208.9	841,860.9	859,799.5	8,650,907.1
	<b>Bridger</b>													
2	Energy (MWh)	45,512.5	23,629.1	93,755.6	262,612.0	299,451.3	178,326.3	166,635.7	185,609.1	240,430.2	208,079.5	154,326.5	145,595.4	2,003,963.0
3	AURORA Modeled Expense (\$ x 1000)	\$ 1,483.1	\$ 768.9	\$ 2,985.9	\$ 8,149.8	\$ 9,226.2	\$ 5,562.2	\$ 5,220.2	\$ 5,820.9	\$ 7,447.7	\$ 6,194.4	\$ 4,629.1	\$ 4,402.3	61,890.9
4	AURORA Modeled Handling Expense (\$ x 1000)	\$ 5.5	\$ 2.8	\$ 11.3	\$ 31.5	\$ 35.9	\$ 21.4	\$ 20.0	\$ 22.3	\$ 28.9	\$ 25.0	\$ 18.5	\$ 17.5	240.5
5	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 1,477.6	\$ 766.1	\$ 2,974.7	\$ 8,118.3	\$ 9,190.3	\$ 5,540.8	\$ 5,200.2	\$ 5,798.7	\$ 7,418.9	\$ 6,169.5	\$ 4,610.6	\$ 4,384.8	61,650.5
6	IPC Share of OHAG Expense (\$ x 1000)	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	\$ 294.9	3,538.4
7	Total Expense (\$ x 1000)	\$ 1,772.5	\$ 1,061.0	\$ 3,269.5	\$ 8,413.2	\$ 9,485.2	\$ 5,835.7	\$ 5,495.0	\$ 6,093.5	\$ 7,713.8	\$ 6,464.3	\$ 4,905.5	\$ 4,679.7	65,188.9
	<b>Boardman</b>													
8	Energy (MWh)	12,377.5	12,069.2	16,953.6	32,902.4	37,475.4	27,395.7	26,134.3	30,556.7	33,307.9	20,271.5	15,935.3	14,759.3	280,138.6
9	AURORA Modeled Expense (\$ x 1000)	\$ 334.1	\$ 325.0	\$ 455.4	\$ 858.8	\$ 974.7	\$ 720.2	\$ 687.6	\$ 798.0	\$ 867.1	\$ 591.0	\$ 468.0	\$ 438.0	7,517.9
10	AURORA Modeled Handling Expense (\$ x 1000)	\$ 0.6	\$ 0.6	\$ 0.8	\$ 1.6	\$ 1.9	\$ 1.4	\$ 1.3	\$ 1.5	\$ 1.7	\$ 1.0	\$ 0.8	\$ 0.7	14.0
11	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 333.5	\$ 324.4	\$ 454.5	\$ 857.2	\$ 972.8	\$ 718.9	\$ 686.3	\$ 796.5	\$ 865.4	\$ 590.0	\$ 467.2	\$ 437.3	7,503.9
12	IPC Share of OHAG Expense (\$ x 1000)	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	\$ 29.7	356.4
13	Total Expense (\$ x 1000)	\$ 363.2	\$ 354.1	\$ 484.2	\$ 886.9	\$ 1,002.5	\$ 748.6	\$ 716.0	\$ 826.2	\$ 895.1	\$ 619.7	\$ 496.9	\$ 467.0	7,860.3
	<b>Valmy</b>													
14	Energy (MWh)	4,719.8	1,689.8	10,901.5	36,029.1	45,340.0	23,087.3	22,473.5	22,001.0	31,494.5	18,349.3	16,988.6	14,114.9	247,189.3
15	AURORA Modeled Expense (\$ x 1000)	\$ 170.8	\$ 62.1	\$ 387.7	\$ 1,225.0	\$ 1,530.9	\$ 792.1	\$ 774.5	\$ 766.4	\$ 1,074.9	\$ 627.2	\$ 580.8	\$ 488.2	8,480.8
16	AURORA Modeled Handling Expense (\$ x 1000)	\$ 4.3	\$ 1.6	\$ 10.0	\$ 33.1	\$ 41.7	\$ 21.2	\$ 20.7	\$ 20.2	\$ 29.0	\$ 16.9	\$ 15.6	\$ 13.0	227.4
17	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 166.5	\$ 60.6	\$ 377.7	\$ 1,191.8	\$ 1,489.2	\$ 770.9	\$ 753.9	\$ 746.2	\$ 1,046.0	\$ 610.3	\$ 565.2	\$ 475.2	8,253.4
18	IPC Share of OHAG Expense (\$ x 1000)	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	\$ 340.4	4,085.0
19	Total Expense (\$ x 1000)	\$ 506.9	\$ 401.0	\$ 718.1	\$ 1,532.3	\$ 1,829.6	\$ 1,111.3	\$ 1,094.3	\$ 1,086.6	\$ 1,386.4	\$ 950.8	\$ 905.6	\$ 815.6	12,338.4
	<b>Langley Gulch</b>													
20	Energy (MWh)	175,532.6	171,918.2	182,201.9	197,830.4	198,877.6	193,314.8	191,330.0	185,215.8	190,938.7	168,458.6	148,331.3	156,060.9	2,160,010.8
21	Expense (\$ x 1000)	\$ 3,061.4	\$ 2,963.3	\$ 3,105.5	\$ 3,616.2	\$ 3,710.3	\$ 3,620.6	\$ 3,758.4	\$ 4,211.6	\$ 4,748.5	\$ 4,107.5	\$ 3,514.1	\$ 3,622.5	44,040.1
	<b>Danskin</b>													
22	Energy (MWh)	899.8	1,690.1	18,673.9	64,991.3	74,697.7	36,467.3	19,251.1	6,134.4	4,806.7	1,495.4	1,957.2	294.3	231,359.1
23	Expense (\$ x 1000)	\$ 22.5	\$ 43.8	\$ 485.7	\$ 1,910.8	\$ 2,197.6	\$ 1,028.7	\$ 543.8	\$ 178.5	\$ 170.8	\$ 59.3	\$ 80.5	\$ 11.2	6,733.0
	<b>Bennett Mountain</b>													
24	Energy (MWh)	250.1	481.1	8,578.2	44,478.7	48,934.2	23,659.8	11,547.3	2,729.8	2,914.1	674.4	1,046.6	96.9	145,391.3
25	Expense (\$ x 1000)	\$ 6.5	\$ 12.2	\$ 220.2	\$ 1,305.0	\$ 1,429.4	\$ 656.3	\$ 324.6	\$ 78.6	\$ 104.3	\$ 28.5	\$ 44.7	\$ 3.6	4,214.0
26	Fixed Capacity Charge - Gas Transportation (\$ x 1000)	\$ 725.0	\$ 748.7	\$ 746.0	\$ 770.4	\$ 770.4	\$ 746.0	\$ 748.7	\$ 725.0	\$ 748.7	\$ 747.3	\$ 676.1	\$ 747.3	8,899.3
	<b>Purchased Power (Excluding PURPA)</b>													
27	Market Energy (MWh)	6,303.0	14,004.9	66,206.8	103,660.5	123,060.0	43,268.4	14,742.5	58,927.8	37,059.3	75,429.7	5,089.7	7,450.5	555,202.9
28	Elkhorn Wind Energy (MWh)	25,222.8	24,240.8	23,934.6	26,559.8	24,064.4	19,958.8	20,960.4	30,426.8	29,073.2	26,367.6	23,457.6	29,036.4	303,302.9
29	Neal Hot Springs Energy (MWh)	14,081.9	11,353.2	10,318.6	8,357.0	9,713.8	11,676.6	13,859.1	17,054.5	17,838.6	18,323.1	16,285.0	16,438.1	165,299.4
30	Raft River Geothermal Energy (MWh)	6,088.1	5,065.7	5,127.2	5,756.7	5,203.9	5,842.0	7,652.8	6,875.9	7,035.5	7,084.5	6,387.4	6,429.4	74,459.1
31	Total Energy Excl. PURPA (MWh)	51,695.8	54,664.4	105,587.2	144,334.0	162,042.1	80,745.8	57,214.8	113,195.0	91,006.6	127,204.8	51,219.7	59,354.3	1,098,264.4
32	Market Expense (\$ x 1000)	\$ 157.5	\$ 365.3	\$ 1,893.8	\$ 3,109.6	\$ 3,725.1	\$ 1,199.1	\$ 399.4	\$ 1,709.8	\$ 1,088.8	\$ 2,006.1	\$ 134.2	\$ 200.0	15,988.8
33	Elkhorn Wind Expense (\$ x 1000)	\$ 1,123.7	\$ 1,079.9	\$ 1,450.7	\$ 1,931.7	\$ 1,750.2	\$ 1,209.7	\$ 1,270.4	\$ 2,212.9	\$ 2,114.5	\$ 1,646.1	\$ 1,464.5	\$ 1,332.5	18,586.8
34	Neal Hot Springs Expense (\$ x 1000)	\$ 1,154.3	\$ 930.6	\$ 1,153.9	\$ 1,121.5	\$ 1,303.6	\$ 1,305.8	\$ 1,549.9	\$ 2,288.7	\$ 2,393.9	\$ 2,097.8	\$ 1,864.5	\$ 1,379.5	18,544.0
35	Raft River Geothermal Expense (\$ x 1000)	\$ 289.2	\$ 240.6	\$ 331.4	\$ 446.5	\$ 403.6	\$ 377.6	\$ 494.6	\$ 526.3	\$ 545.7	\$ 467.5	\$ 421.5	\$ 311.8	4,856.3
36	Total Expense Excl. PURPA (\$ x 1000)	\$ 2,724.7	\$ 2,616.5	\$ 4,829.8	\$ 6,609.3	\$ 7,182.5	\$ 4,092.2	\$ 3,714.3	\$ 6,737.8	\$ 6,142.9	\$ 6,217.6	\$ 3,884.6	\$ 3,223.8	57,975.9
	<b>Surplus Sales</b>													
37	Energy (MWh)	361,911.0	253,454.2	144,485.0	42,389.0	21,694.1	86,704.8	173,890.9	37,294.4	106,567.5	91,316.5	314,596.8	345,656.6	1,979,960.8
38	Revenue Including Transmission Expenses (\$ x 1000)	\$ 7,922.4	\$ 5,086.9	\$ 2,987.8	\$ 1,322.7	\$ 814.4	\$ 2,689.3	\$ 5,148.5	\$ 1,096.5	\$ 3,440.4	\$ 2,623.5	\$ 8,868.5	\$ 9,067.7	51,068.6
39	Transmission Expenses (\$ x 1000)	\$ 361.9	\$ 253.5	\$ 144.5	\$ 42.4	\$ 21.7	\$ 86.7	\$ 173.9	\$ 37.3	\$ 106.6	\$ 91.3	\$ 314.6	\$ 345.7	1,980.0
40	Revenue Excluding Transmission Expenses (\$ x 1000)	\$ 7,560.5	\$ 4,833.4	\$ 2,843.3	\$ 1,280.3	\$ 792.7	\$ 2,602.6	\$ 4,974.6	\$ 1,059.2	\$ 3,333.9	\$ 2,532.2	\$ 8,553.9	\$ 8,722.0	49,088.6
41	Net Power Supply Expenses (\$ x 1000)	\$ 1,622.3	\$ 3,367.1	\$ 11,015.7	\$ 23,763.7	\$ 26,814.8	\$ 15,236.8	\$ 11,420.5	\$ 18,878.6	\$ 18,576.6	\$ 16,662.6	\$ 5,954.2	\$ 4,848.5	158,161.2

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Mid-Columbia Heavy and Light Load  
Forward Price Curves

October 28, 2016



Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/1

MidC HL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
9/30/2015	23.8500	22.8000	22.8000	31.1500	35.1500	31.8000	28.2000	31.5000	35.5000	33.9500	31.2000	27.8000
10/1/2015	23.8500	22.8000	22.8000	31.1500	35.1500	31.8000	28.2000	31.5000	35.5000	33.9500	31.2000	27.8000
10/2/2015	23.5000	22.4500	22.4500	30.6500	34.6000	31.3000	27.7500	31.0000	34.9500	33.4500	30.7500	27.4000
10/5/2015	23.5000	22.4500	22.4500	30.1500	34.0500	30.8000	27.7500	31.0000	34.9500	33.2500	30.5500	27.2500
10/6/2015	23.5000	22.4500	22.4500	30.1500	34.0500	30.8000	27.7500	31.0000	34.9500	33.2500	30.5500	27.2500
10/7/2015	23.5000	22.4500	22.4500	30.1500	34.0500	30.8000	27.7500	31.0000	34.9500	33.2500	30.5500	27.2500
10/8/2015	23.5000	22.4500	22.4500	30.1500	34.0500	30.8000	27.7500	31.0000	34.9500	33.2500	30.5500	27.2500
10/9/2015	23.9000	22.8500	22.8500	30.7000	34.6500	31.3500	28.2500	31.5500	35.5500	33.8000	31.0500	27.7000
10/12/2015	23.9000	22.8500	22.8500	30.7000	34.6500	31.3500	28.2500	31.5500	35.5500	33.8000	31.0500	27.7000
10/13/2015	23.9000	22.8500	22.8500	30.7000	34.6500	31.3500	28.2500	31.5500	35.5500	33.8000	31.0500	27.7000
10/14/2015	23.9000	22.8500	22.8500	30.7000	34.6500	31.3500	28.2500	31.5500	35.5500	33.8000	31.0500	27.7000
10/15/2015	24.0500	23.0000	23.0000	30.9000	34.8500	31.5500	28.4000	31.7500	35.7500	34.0000	31.2500	27.8500
10/16/2015	24.1500	23.1000	23.1000	31.2500	35.2500	31.9000	27.9500	31.2500	35.2000	34.1000	31.3500	27.9000
10/19/2015	24.1500	23.1000	23.1000	31.3000	35.3000	31.9500	27.6500	30.9000	34.8000	34.0000	31.3000	27.8500
10/20/2015	24.1500	23.1000	23.1000	31.3000	35.3000	31.9500	27.6500	30.9000	34.8000	34.0000	31.3000	27.8500
10/21/2015	24.1500	23.1000	23.1000	31.3000	35.3000	31.9500	27.6500	30.9000	34.8000	34.0000	31.3000	27.8500
10/22/2015	24.1500	23.1000	23.1000	31.3000	35.3000	31.9500	27.6500	30.9000	34.8000	34.0000	31.3000	27.8500
10/23/2015	24.1500	23.1000	23.1000	31.3000	35.3000	31.9500	27.6500	30.9000	34.8000	34.0000	31.3000	27.8500
10/26/2015	24.1000	23.1000	23.1000	31.2500	35.2500	31.9000	27.6000	30.8500	34.7500	33.9500	31.2500	27.8000
10/27/2015	24.1000	23.1000	23.1000	31.2500	35.2500	31.9000	27.6000	30.8500	34.7500	33.9500	31.2500	27.8000
10/28/2015	24.0500	23.0500	23.0500	31.2000	35.2000	31.8500	27.5500	30.8000	34.7000	33.9000	31.2000	27.7500
10/29/2015	24.0500	23.0500	23.0500	31.2000	35.2000	31.8500	27.5500	30.8000	34.7000	33.9000	31.2000	27.7500
10/30/2015	24.0500	23.0500	23.0500	31.2000	35.2000	31.8500	27.5500	30.8000	34.7000	33.9000	31.2000	27.7500
11/2/2015	24.0000	23.0000	23.0000	31.1000	35.1000	31.7500	27.4500	30.7000	34.6000	33.8000	31.1000	27.6500
11/3/2015	23.9500	22.9500	22.9500	30.6500	34.6000	31.3000	27.3000	30.5000	34.4000	33.6000	30.9000	27.5000
11/4/2015	24.1500	23.1000	23.1000	30.8500	34.8500	31.5000	26.9000	30.0500	33.9000	33.5500	30.8500	27.5000
11/5/2015	24.2000	23.1500	23.1500	30.9000	34.9000	31.5500	26.9500	30.1000	33.9500	33.5500	30.8500	27.5000
11/6/2015	24.2500	23.2000	23.2000	30.9000	34.9000	31.5500	26.9000	30.0500	33.9000	33.5500	30.8500	27.5000
11/9/2015	24.2500	23.2000	23.2000	30.9000	34.9000	31.5500	26.9000	30.0500	33.9000	33.5500	30.8500	27.5000
11/10/2015	24.2500	23.2000	23.2000	30.9000	34.9000	31.5500	26.9000	30.0500	33.9000	33.5500	30.8500	27.5000
11/11/2015	24.2500	23.2000	23.2000	30.9000	34.9000	31.5500	26.9000	30.0500	33.9000	33.5500	30.8500	27.5000
11/12/2015	23.9000	22.8500	22.8500	30.4500	34.4000	31.1000	26.5000	29.6000	33.4000	33.1000	30.4000	27.1000
11/13/2015	23.8500	22.8000	22.8000	30.4000	34.3000	31.0500	26.4500	29.5500	33.3000	33.0500	30.3500	27.0500
11/16/2015	23.8000	22.7500	22.7500	30.3500	34.2500	31.0000	26.4000	29.5000	33.2500	33.0000	30.3000	27.0000
11/17/2015	23.8000	22.7500	22.7500	30.3500	34.2500	31.0000	26.4000	29.5000	33.2500	33.0000	30.3000	27.0000
11/18/2015	23.8000	22.7500	22.7500	30.3500	34.2500	31.0000	26.4000	29.5000	33.2500	33.0000	30.3000	27.0000
11/19/2015	23.8000	22.7500	22.7500	30.3500	34.2500	31.0000	26.4000	29.5000	33.2500	33.0000	30.3000	27.0000
11/20/2015	23.2000	22.1500	22.1500	29.9500	33.8000	30.5500	26.6500	29.8000	33.5500	32.8500	30.2000	26.9000
11/23/2015	23.3000	22.2500	22.2500	30.1000	33.9500	30.7000	26.7500	29.9500	33.7000	33.0000	30.3500	27.0000
11/24/2015	22.5000	21.5000	21.5000	29.1000	32.8000	29.6500	25.8500	28.9500	32.5500	32.2000	29.6000	26.3500
11/25/2015	22.5000	21.5000	21.5000	29.1000	32.8000	29.6500	25.8500	28.9500	32.5500	32.2000	29.6000	26.3500
11/27/2015	22.5000	21.5000	21.5000	29.1000	32.8000	29.6500	25.8500	28.9500	32.5500	32.2000	29.6000	26.3500
11/30/2015	22.9000	21.9000	21.9000	29.6500	33.4000	30.2000	26.3500	29.5000	33.1500	32.7500	30.1000	26.8000
12/1/2015	22.9000	21.9000	21.9000	29.6500	33.4000	30.2000	26.3500	29.5000	33.1500	32.7500	30.1000	26.8000
12/2/2015	22.6000	21.6000	21.6000	29.2500	32.9500	29.8000	26.0000	29.1000	32.7500	32.3500	29.7500	26.5000
12/3/2015	22.6000	21.6000	21.6000	29.2500	32.9500	29.8000	26.0000	29.1000	32.7500	32.3500	29.7500	26.5000
12/4/2015	22.6000	21.6000	21.6000	29.2500	32.9500	29.8000	26.0000	29.1000	32.7500	32.3500	29.7500	26.5000
12/7/2015	22.4000	21.4000	21.4000	29.0000	32.6500	29.5500	25.8000	28.8500	32.4500	32.1000	29.5000	26.3000
12/8/2015	22.3000	21.3000	21.3000	28.8500	32.5000	29.4000	25.7000	28.7000	32.3000	31.9500	29.3500	26.2000
12/9/2015	22.3000	21.3000	21.3000	28.8500	32.5000	29.4000	25.7000	28.7000	32.3000	31.9500	29.3500	26.2000
12/10/2015	22.2500	21.2500	21.2500	28.8000	32.4000	29.3500	25.6500	28.6500	32.2000	31.8500	29.3000	26.1500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/2

MidC HL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
12/11/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/14/2015	22.2500	21.2000	21.2000	28.8000	32.4000	29.3500	25.6500	28.6500	32.2000	31.8500	29.3000	26.1500
12/15/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/16/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/17/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/18/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/21/2015	22.3500	21.3000	21.3000	28.9000	32.5000	29.4500	25.7500	28.7500	32.3000	31.9500	29.4000	26.2500
12/22/2015	22.4000	21.3500	21.3500	28.9500	32.6000	29.5000	25.8000	28.8000	32.4000	32.0000	29.4500	26.3000
12/23/2015	22.7500	21.7000	21.7000	29.4000	33.1000	29.9500	26.8500	30.0000	33.7500	32.4000	29.8000	26.6000
12/24/2015	22.7500	21.7000	21.7000	29.4000	33.1000	29.9500	26.8500	30.0000	33.7500	32.4000	29.8000	26.6000
12/28/2015	22.9000	21.8500	21.8500	29.6000	33.3500	30.1500	27.0500	30.2000	34.0000	32.6000	30.0000	26.8000
12/29/2015	23.3000	22.2500	22.2500	30.1000	33.9500	30.6500	27.5000	30.7000	34.6000	33.4500	30.7500	27.5000
12/30/2015	23.4000	22.3500	22.3500	30.2000	34.1000	30.7500	27.6000	30.8000	34.7500	33.4500	30.7500	27.5000
12/31/2015	23.6000	22.5500	22.5500	30.5000	34.4000	31.0500	27.8500	31.1000	35.1000	33.8000	31.1000	27.8000
1/4/2016	23.5500	22.5000	22.5000	30.4000	34.3000	30.9500	27.8000	31.0000	35.0000	33.7000	31.0000	27.7500
1/5/2016	23.3500	22.3500	22.3500	30.1500	34.0500	30.7000	27.6000	30.7500	34.7500	33.4500	30.8000	27.5500
1/6/2016	23.3500	22.3500	22.3500	30.1500	34.0500	30.7000	27.6000	30.7500	34.7500	33.4500	30.8000	27.5500
1/7/2016	23.2500	22.3000	22.3000	30.0500	33.9500	30.6000	27.5000	30.6500	34.6500	33.4500	30.8000	27.5500
1/8/2016	23.4000	22.4500	22.4500	30.2500	34.1500	30.8000	27.7000	30.8500	34.8500	33.6500	31.0000	27.7000
1/11/2016	23.1500	22.2500	22.2500	29.9500	33.8000	30.5000	27.4000	30.5500	34.5000	33.3500	30.7000	27.4500
1/12/2016	22.8000	21.9000	21.9000	29.5000	33.3000	30.0500	27.0000	30.1000	34.0000	32.9000	30.3000	27.0500
1/13/2016	22.8000	21.9000	21.9000	29.5000	33.3000	30.0500	27.0000	30.1000	34.0000	32.9000	30.3000	27.0500
1/14/2016	22.6000	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7000	32.6500	30.0500	26.8000
1/15/2016	22.6000	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7000	32.6500	30.0500	26.8000
1/19/2016	22.6000	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7000	32.6500	30.0500	26.8000
1/20/2016	22.5000	21.6500	21.6500	29.1500	32.9000	29.7000	26.6500	29.7500	33.6000	32.5500	29.9500	26.7000
1/21/2016	22.4500	21.6000	21.6000	29.1000	32.8500	29.6500	26.6000	29.7000	33.5500	32.5000	29.9000	26.6500
1/22/2016	22.5500	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7500	32.6500	30.0500	26.8000
1/25/2016	22.5500	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7500	32.6500	30.0500	26.8000
1/26/2016	22.5500	21.7000	21.7000	29.2500	33.0000	29.8000	26.7500	29.8500	33.7500	32.6500	30.0500	26.8000
1/27/2016	22.4000	21.5500	21.5500	29.0500	32.7500	29.6000	26.5500	29.6500	33.5000	32.4500	29.8500	26.6500
1/28/2016	22.3500	21.5000	21.5000	29.0000	32.7000	29.5500	26.5000	29.6000	33.4500	32.4000	29.8000	26.6000
1/29/2016	22.3500	21.5000	21.5000	29.0000	32.7000	29.5500	26.5000	29.6000	33.4500	32.4000	29.8000	26.6000
2/1/2016	22.3500	21.5000	21.5000	29.0000	32.7000	29.5500	26.5000	29.6000	33.4500	32.4000	29.8000	26.6000
2/2/2016	22.1000	21.2500	21.2500	28.6500	32.3000	29.2000	26.2000	29.2500	33.0500	32.0500	29.4500	26.3000
2/3/2016	22.0500	21.2000	21.2000	28.6000	32.2500	29.1500	26.1500	29.2000	33.0000	32.0000	29.4000	26.2500
2/4/2016	22.0000	21.1500	21.1500	28.5000	32.1500	29.0500	26.1000	29.1000	32.9000	31.9000	29.3500	26.2000
2/5/2016	21.9500	21.1000	21.1000	28.4500	32.1000	29.0000	26.0500	29.0500	32.8500	31.8500	29.3000	26.1500
2/8/2016	22.0500	21.2000	21.2000	28.5500	32.2500	29.1500	26.1500	29.2000	33.0000	32.0000	29.4000	26.2500
2/9/2016	22.0000	21.1500	21.1500	28.5000	32.2000	29.1000	26.1000	29.1500	32.9500	31.9500	29.3500	26.2000
2/10/2016	22.0000	21.1500	21.1500	28.5000	32.2000	29.1000	26.1000	29.1500	32.9500	31.9500	29.3500	26.2000
2/11/2016	21.9000	21.0500	21.0500	28.3500	32.0500	28.9500	26.0000	29.0000	32.8000	31.8000	29.2000	26.1000
2/12/2016	21.9000	21.0500	21.0500	28.3500	32.0500	28.9500	26.0000	29.0000	32.8000	31.8000	29.2000	26.1000
2/16/2016	21.2500	20.4000	20.4000	27.5000	31.1000	28.1000	25.2500	28.1500	31.8000	30.9000	28.4000	25.4000
2/17/2016	21.1500	20.3000	20.3000	27.4000	30.9500	28.0000	25.1500	28.0500	31.6500	30.8000	28.3000	25.3000
2/18/2016	21.0000	20.1500	20.1500	26.3500	29.7500	26.9500	24.9500	27.8500	31.4000	30.2500	27.8000	24.8500
2/19/2016	21.1500	20.3000	20.3000	26.5500	29.9500	27.1500	25.1500	28.0500	31.6500	30.9000	28.4000	25.4000
2/22/2016	20.8500	20.0500	20.0500	26.2000	29.5500	26.8000	24.8000	27.7000	31.2500	30.5000	28.0500	25.1000
2/23/2016	20.8500	20.0500	20.0500	26.2000	29.5500	26.8000	24.8000	27.7000	31.2500	30.5000	28.0500	25.1000
2/24/2016	20.8500	20.0500	20.0500	26.2000	29.5500	26.8000	24.8000	27.7000	31.2500	30.5000	28.0500	25.1000
2/25/2016	20.7000	19.9000	19.9000	26.0000	29.3500	26.6000	24.6500	27.5000	31.0500	30.3000	27.8500	24.9500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/3

MidC HL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
2/26/2016	20.5500	19.7500	19.7500	25.8000	29.1500	26.4000	24.4500	27.3000	30.8000	30.1000	27.6500	24.8000
2/29/2016	20.5000	19.7500	19.7500	25.7500	29.1000	26.3500	24.4000	27.2500	30.7500	30.0500	27.6000	24.7500
3/1/2016	20.8500	20.0500	20.0500	26.1500	29.6000	26.8000	24.8000	27.7000	31.2500	30.5000	28.0000	25.1000
3/2/2016	20.8500	20.0500	20.0500	26.1500	29.5500	26.8000	24.8000	27.6500	31.2000	30.4500	28.0000	25.1000
3/3/2016	20.8000	20.0000	20.0000	26.1000	29.5000	26.7500	24.7500	27.6000	31.1500	30.4000	27.9500	25.0500
3/4/2016	20.8000	20.0000	20.0000	26.1000	29.5000	26.7500	24.7500	27.6000	31.1500	30.4000	27.9500	25.0500
3/7/2016	20.7500	19.9500	19.9500	26.0500	29.4500	26.7000	24.7000	27.5500	31.1000	30.3500	27.9000	25.0000
3/8/2016	20.2000	19.4000	19.4000	26.0000	29.4000	26.6500	24.6500	27.5000	31.0000	30.1500	27.7000	24.8500
3/9/2016	20.2500	19.4500	19.4500	25.8500	29.2000	26.5000	24.7000	27.5500	31.0500	30.1500	27.7000	24.8500
3/10/2016	20.3500	19.5500	19.5500	26.0000	29.3500	26.6500	24.8500	27.7000	31.2500	30.3000	27.8500	25.0000
3/11/2016	20.6000	19.8000	19.8000	26.3500	29.7500	27.0000	25.1500	28.0500	31.6500	30.6500	28.2000	25.3000
3/14/2016	20.7000	19.9000	19.9000	26.5000	29.9000	27.1500	25.3000	28.2000	31.8000	30.8000	28.3500	25.4000
3/15/2016	20.7500	19.9500	19.9500	26.5500	29.9500	27.2000	25.3500	28.2500	31.8500	30.8500	28.4000	25.4500
3/16/2016	20.8500	20.0500	20.0500	26.7000	30.1500	27.3500	25.5000	28.4000	32.0500	31.0000	28.5500	25.6000
3/17/2016	21.0500	20.2500	20.2500	26.9500	30.4500	27.6000	25.7500	28.6500	32.3500	31.2500	28.8000	25.8500
3/18/2016	20.8000	20.0000	20.0000	26.3500	29.7500	26.9500	25.7500	28.6500	32.3500	30.7500	28.3000	25.4000
3/21/2016	20.6500	19.8500	19.8500	26.1500	29.5500	26.7500	25.5500	28.4500	32.1000	30.5500	28.1000	25.2000
3/22/2016	20.3000	19.5000	19.5000	26.2500	29.6500	26.8500	25.6500	28.6000	32.2500	30.5500	28.1000	25.2000
3/23/2016	20.3000	19.5000	19.5000	26.3000	29.7000	26.9000	25.6500	28.6500	32.3000	30.6000	28.1500	25.2000
3/24/2016	20.3500	19.5500	19.5500	26.3500	29.7500	26.9500	25.7000	28.7000	32.3500	30.6500	28.2000	25.2500
3/25/2016	20.3500	19.5500	19.5500	26.3500	29.7500	26.9500	25.7000	28.7000	32.3500	30.6500	28.2000	25.2500
3/28/2016	20.3000	19.5000	19.5000	26.3000	29.7000	26.9000	25.6500	28.6500	32.3000	30.6000	28.1500	25.2000
3/29/2016	20.2500	19.4500	19.4500	26.2500	29.6500	26.8500	25.6000	28.6000	32.2500	30.5500	28.1000	25.1500
3/30/2016	20.3000	19.5000	19.5000	26.3000	29.7000	26.9000	25.6500	28.6500	32.3000	30.6000	28.1500	25.2000
3/31/2016	20.3500	19.5500	19.5500	26.4000	29.8000	27.0000	25.7500	28.7500	32.4000	30.7000	28.2500	25.3000
4/1/2016	20.4500	19.6500	19.6500	26.5000	29.9000	27.1000	25.8500	28.8500	32.5500	30.8000	28.3500	25.4000
4/4/2016	20.4500	19.6500	19.6500	26.5000	29.9000	27.1000	25.8500	28.8500	32.5500	30.8000	28.3500	25.4000
4/5/2016	20.3000	19.5000	19.5000	26.3500	29.7000	26.9500	25.7000	28.6500	32.3500	30.8000	28.3500	25.4000
4/6/2016	20.3500	19.5500	19.5500	26.4500	29.8000	27.0500	25.7500	28.7500	32.4500	30.9000	28.4500	25.4500
4/7/2016	19.3000	18.5500	18.5500	26.9000	30.3500	27.5500	26.2000	29.2500	33.0500	31.0500	28.5500	25.5500
4/8/2016	19.4500	18.6500	18.6500	26.8000	30.2000	27.4000	26.0000	29.0500	32.8000	30.9500	28.5000	25.5000
4/11/2016	19.5500	18.7500	18.7500	26.9500	30.3500	27.5500	26.1500	29.2000	33.0000	31.1000	28.6500	25.6500
4/12/2016	19.4500	18.6500	18.6500	27.1500	30.6000	27.7500	26.3500	29.4500	33.2500	31.2500	28.8000	25.8000
4/13/2016	19.5500	18.7500	18.7500	27.6000	31.1000	28.2000	26.7500	29.9000	33.7500	31.6500	29.1500	26.1500
4/14/2016	19.5500	18.7500	18.7500	27.6000	31.1000	28.2000	26.7500	29.9000	33.7500	31.6500	29.1500	26.1500
4/15/2016	19.5500	18.7500	18.7500	27.6000	31.1000	28.2000	26.7500	29.9000	33.7500	31.6500	29.1500	26.1500
4/18/2016	19.5500	18.7500	18.7500	27.6000	31.1000	28.2000	26.7500	29.9000	33.7500	31.6500	29.1500	26.1500
4/19/2016	19.7500	18.9000	18.9000	27.8500	31.4000	28.4500	27.0000	30.2000	34.0500	31.9000	29.4000	26.4000
4/20/2016	20.0000	19.1500	19.1500	28.2000	31.8000	28.8000	27.3000	30.5500	34.4500	32.2500	29.7500	26.7000
4/21/2016	20.0000	19.1500	19.1500	28.2000	31.8000	28.8000	27.3000	30.5500	34.4500	32.2500	29.7500	26.7000
4/22/2016	20.1000	19.2500	19.2500	28.3500	31.9500	28.9500	27.4500	30.7000	34.6500	32.4000	29.9000	26.8500
4/25/2016	20.2500	19.4000	19.4000	28.5500	32.1500	29.1500	27.6500	30.9000	34.9000	32.6000	30.1000	27.0500
4/26/2016	20.3000	19.4500	19.4500	28.6500	32.2500	29.2500	27.7500	31.0000	35.0000	32.7000	30.2000	27.1500
4/27/2016	21.2000	20.3000	20.3000	29.4000	33.1000	30.0000	28.4500	31.8000	35.9000	33.3500	30.8000	27.7000
4/29/2016	21.6000	20.6500	20.6500	29.9500	33.7000	30.5500	28.9500	32.3500	36.5500	33.8500	31.3000	28.1500
5/2/2016	21.7000	20.7500	20.7500	30.0500	33.8000	30.6500	29.0500	32.4500	36.7000	33.9500	31.4000	28.2500
5/3/2016	21.8500	20.9000	20.9000	30.3000	34.0500	30.9000	29.2500	32.7000	37.0000	34.2000	31.6000	28.4500
5/4/2016	21.9500	20.9500	20.9500	30.4000	34.1500	31.0000	29.3500	32.8000	37.1500	34.3000	31.7000	28.5500
5/5/2016	21.9500	20.9500	20.9500	30.9000	34.7000	31.5000	28.9500	32.3500	36.6500	34.4500	31.8500	28.7000
5/6/2016	22.1500	21.1500	21.1500	31.1500	35.0000	31.8000	29.2000	32.6500	36.9500	34.7500	32.1000	28.9500
5/9/2016	22.0500	21.0500	21.0500	31.0000	34.8500	31.6500	29.0500	32.5000	36.7500	34.6000	31.9500	28.8000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/4

MidC HL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
5/10/2016	22.0000	21.0000	21.0000	30.9000	34.7500	31.5500	28.9500	32.4000	36.6500	34.5000	31.8500	28.7000
5/11/2016	21.6500	20.6500	20.6500	30.4000	34.1500	31.0000	28.4500	31.8500	36.0500	33.9500	31.3500	28.2500
5/12/2016	21.6500	20.6500	20.6500	30.4000	34.1500	31.0000	28.4500	31.8500	36.0500	33.9500	31.3500	28.2500
5/13/2016	21.5500	20.5500	20.5500	30.2500	33.9500	30.8500	28.3000	31.7000	35.8500	33.8000	31.2000	28.1000
5/16/2016	21.4500	20.4500	20.4500	30.1500	33.8000	30.7500	28.2000	31.6000	35.7000	33.7000	31.1000	28.0000
5/17/2016	21.4000	20.4000	20.4000	30.0500	33.7000	30.6500	28.1000	31.5000	35.6000	33.6000	31.0000	27.9500
5/18/2016	21.2500	20.2500	20.2500	29.8500	33.4500	30.4000	27.9000	31.2500	35.3500	33.3500	30.8000	27.7500
5/19/2016	21.2500	20.2500	20.2500	29.8500	33.4500	30.4000	27.9000	31.2500	35.3500	33.3500	30.8000	27.7500
5/20/2016	21.2000	20.2000	20.2000	29.8000	33.4000	30.3500	27.8500	31.2000	35.2500	33.3000	30.7500	27.7000
5/23/2016	21.2000	20.2000	20.2000	29.8000	33.4000	30.3500	27.8500	31.2000	35.2500	33.3000	30.7500	27.7000
5/24/2016	21.0000	20.0000	20.0000	29.5500	33.1000	30.1000	27.6000	30.9000	34.9500	33.0000	30.5000	27.4500
5/25/2016	21.2500	20.2500	20.2500	29.9000	33.5000	30.4500	27.9000	31.2500	35.3500	33.3500	30.8500	27.7500
5/26/2016	21.3500	20.3000	20.3000	30.0000	33.6000	30.5500	28.0000	31.3500	35.5000	33.4500	30.9500	27.8500
5/27/2016	21.3000	20.2500	20.2500	29.9500	33.5500	30.5000	27.9500	31.3000	35.4000	33.4000	30.9000	27.8000
5/31/2016	21.3500	20.3000	20.3000	30.0500	33.6500	30.6000	28.0500	31.4000	35.5000	33.5000	31.0000	27.9000
6/1/2016	21.2500	20.2000	20.2000	29.9000	33.4500	30.4500	27.9000	31.2500	35.3000	33.1500	30.7000	27.6000
6/2/2016	21.3000	20.2500	20.2500	29.9500	33.5500	30.5000	27.9500	31.3000	35.4000	33.2000	30.7500	27.6500
6/3/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2500	31.6500	35.8000	33.5500	31.0500	27.9500
6/6/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2500	31.6500	35.8000	33.5500	31.0500	27.9500
6/7/2016	21.6000	20.5000	20.5000	30.3500	34.0000	30.9500	28.3500	31.7500	35.9000	33.6500	31.1500	28.0500
6/8/2016	21.4500	20.3500	20.3500	30.1000	33.7500	30.7000	28.1000	31.5000	35.6000	33.4000	30.9000	27.8500
6/9/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2000	31.6500	35.7500	33.5500	31.0000	27.9500
6/10/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2000	31.6500	35.7500	33.5500	31.0000	27.9500
6/13/2016	21.5000	20.4000	20.4000	30.1500	33.8000	30.7500	28.1500	31.5500	35.6500	33.4500	30.9000	27.9000
6/14/2016	21.5000	20.4000	20.4000	30.2000	33.8500	30.8000	28.2000	31.6000	35.7000	33.5000	30.9500	27.9500
6/15/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2500	31.6500	35.7500	33.5500	31.0000	28.0000
6/16/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2500	31.6500	35.7500	33.5500	31.0000	28.0000
6/17/2016	21.5500	20.4500	20.4500	30.2500	33.9000	30.8500	28.2500	31.6500	35.7500	33.5500	31.0000	28.0000
6/20/2016	21.6000	20.5000	20.5000	30.3000	33.9500	30.9000	28.3000	31.7000	35.8000	33.6000	31.0500	28.0500
6/21/2016	21.7000	20.6000	20.6000	30.4000	34.1000	31.0500	28.4000	31.8500	35.9500	33.7500	31.1500	28.1500
6/22/2016	21.3500	20.2500	20.2500	29.9000	33.5500	30.5500	27.9500	31.3000	35.3500	33.2000	30.6500	27.7000
6/23/2016	21.3500	20.2500	20.2500	29.9000	33.5500	30.5500	27.9500	31.3000	35.3500	33.2000	30.6500	27.7000
6/24/2016	21.3500	20.2500	20.2500	29.9000	33.5500	30.5500	27.9500	31.3000	35.3500	33.2000	30.6500	27.7000
6/27/2016	21.3000	20.2000	20.2000	29.8500	33.5000	30.5000	27.9000	31.2500	35.3000	33.1500	30.6000	27.6500
6/28/2016	21.3500	20.2500	20.2500	29.9500	33.6000	30.6000	28.0000	31.3500	35.4000	32.3000	29.8000	26.9500
6/29/2016	21.5000	20.4000	20.4000	30.2000	33.8500	30.8500	28.2000	31.6000	35.6500	32.5500	30.0000	27.1500
6/30/2016	21.7500	20.6500	20.6500	30.5500	34.2500	31.2500	28.5500	32.0000	36.1000	32.9500	30.3500	27.4500
7/1/2016	21.8000	20.7000	20.7000	30.6000	34.3500	31.3000	28.6000	32.0500	36.2000	33.0000	30.4000	27.5000
7/5/2016	21.7000	20.6000	20.6000	30.4500	34.2000	31.1500	28.5000	31.9000	36.0500	32.8500	30.3000	27.4000
7/6/2016	21.4500	20.3500	20.3500	30.1000	33.8000	30.8000	28.2000	31.5500	35.6500	32.5000	30.0000	27.1000
7/7/2016	21.4000	20.3000	20.3000	30.0500	33.7500	30.7500	28.1500	31.5000	35.6000	32.4500	29.9500	27.0500
7/8/2016	21.5500	20.4500	20.4500	30.2500	33.9500	30.9500	28.3500	31.7000	35.8500	32.6500	30.1500	27.2000
7/11/2016	21.1500	20.0500	20.0500	28.8500	32.3500	29.5000	28.0500	31.4000	35.5000	32.2500	29.8000	26.9000
7/12/2016	21.1000	20.0000	20.0000	28.9500	32.4500	29.6000	27.9500	31.3000	35.4000	32.2500	29.8000	26.9000
7/13/2016	21.1000	20.0000	20.0000	28.9500	32.4500	29.6000	27.9500	31.3000	35.4000	32.2500	29.8000	26.9000
7/14/2016	21.1000	20.0000	20.0000	28.9500	32.4500	29.6000	27.9500	31.3000	35.4000	32.2500	29.8000	26.9000
7/15/2016	21.1500	20.0500	20.0500	29.0000	32.5000	29.6500	28.0000	31.3500	35.4500	32.3000	29.8500	26.9500
7/18/2016	21.1000	20.0000	20.0000	28.9500	32.4500	29.6000	27.9500	31.3000	35.3500	32.2500	29.8000	26.9000
7/19/2016	21.2500	20.1500	20.1500	28.9000	32.4000	29.5500	27.9000	31.2500	35.3000	32.2500	29.8000	26.9000
7/20/2016	21.1500	20.1000	20.1000	28.8000	32.3000	29.4500	27.8000	31.1500	35.1500	32.1500	29.7000	26.8000
7/21/2016	21.1500	20.1000	20.1000	28.8500	32.3500	29.5000	27.7500	31.1000	35.1000	32.1500	29.7000	26.8000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/5

MidC HL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
7/22/2016	21.3000	20.2500	20.2500	29.0500	32.6000	29.7000	27.7500	31.1500	35.1500	32.3000	29.8500	26.9500
7/25/2016	21.3000	20.2500	20.2500	29.0000	32.5500	29.6500	27.7000	31.1000	35.1000	32.2500	29.8000	26.9000
7/26/2016	21.3000	20.2500	20.2500	29.0500	32.6000	29.7000	27.7000	31.1000	35.1000	32.2500	29.8000	26.9000
7/27/2016	20.7500	19.7000	19.7000	28.8000	32.3000	29.4500	27.5000	30.9000	34.8500	32.0000	29.5500	26.7000
7/28/2016	20.7500	19.7000	19.7000	28.7500	32.2500	29.4000	27.4500	30.8500	34.8000	31.9500	29.5000	26.7000
7/29/2016	20.6000	19.5500	19.5500	28.6000	32.0500	29.2000	27.3000	30.7000	34.6000	31.7500	29.3500	26.5500
8/1/2016	20.5000	19.4500	19.4500	28.5000	31.9500	29.1000	27.2000	30.6000	34.5000	31.6500	29.2500	26.4500
8/2/2016	20.4500	19.4000	19.4000	28.4000	31.8500	29.0000	27.1000	30.5000	34.4000	31.5500	29.1500	26.4000
8/3/2016	20.5500	19.5000	19.5000	28.5500	32.0000	29.1500	27.2500	30.6500	34.5500	31.7000	29.3000	26.5000
8/4/2016	20.5500	19.5000	19.5000	28.5500	32.0000	29.1500	27.2500	30.6500	34.5500	31.7000	29.3000	26.5000
8/5/2016	20.5500	19.5000	19.5000	28.5500	32.0000	29.1500	27.2500	30.6500	34.5500	31.7000	29.3000	26.5000
8/8/2016	20.6500	19.6000	19.6000	28.7000	32.1500	29.3000	27.4000	30.8000	34.7500	31.8500	29.4500	26.6500
8/9/2016	20.6500	19.6000	19.6000	28.7000	32.1500	29.3000	27.3000	30.7000	34.6500	31.8500	29.4500	26.6500
8/10/2016	20.7000	19.6500	19.6500	28.7500	32.2000	29.3500	27.3500	30.7500	34.7000	31.9500	29.5500	26.7500
8/11/2016	20.7000	19.6500	19.6500	28.7500	32.2000	29.3500	27.2500	30.6000	34.5500	31.9000	29.5000	26.7000
8/12/2016	20.7000	19.6500	19.6500	28.7500	32.2000	29.3500	27.2500	30.6000	34.5500	31.9000	29.5000	26.7000
8/15/2016	20.6000	19.5500	19.5500	28.6000	32.0500	29.2000	27.1000	30.4500	34.4000	31.7500	29.3500	26.5500
8/16/2016	20.5000	19.4500	19.4500	28.5000	31.9500	29.1000	27.0000	30.3500	34.3000	31.6500	29.2500	26.4500
8/17/2016	20.6000	19.5500	19.5500	28.6500	32.1000	29.2500	27.1500	30.5000	34.5000	31.8000	29.4000	26.6000
8/18/2016	20.4500	19.6500	19.6500	29.3500	32.9000	29.9500	27.2000	30.5500	34.5000	32.1500	29.7500	26.9000
8/19/2016	20.4500	19.6500	19.6500	29.3500	32.9000	29.9500	27.2000	30.5500	34.5000	32.1500	29.7500	26.9000
8/22/2016	20.1000	19.3500	19.3000	28.9500	32.5000	29.5500	26.7500	30.1500	34.1000	31.7000	29.3500	26.5500
8/23/2016	20.4000	19.6000	19.5500	29.3500	32.9500	29.9500	27.1000	30.5500	34.5500	32.1500	29.7500	26.9000
8/24/2016	20.3500	19.5500	19.5000	29.3000	32.9000	29.9000	27.0500	30.5000	34.5000	32.2000	29.8000	26.9500
8/25/2016	20.4000	19.6000	19.5500	29.3500	32.9500	29.9500	27.1000	30.5500	34.5500	32.2500	29.8500	27.0000
8/26/2016	20.4000	19.6000	19.5500	29.3500	32.9500	29.9500	27.1000	30.5500	34.5500	32.2500	29.8500	27.0000
8/29/2016	20.3500	19.5500	19.5000	29.2500	32.8500	29.8500	27.0000	30.4500	34.4500	32.1000	29.7000	26.8500
8/30/2016	20.0500	19.2500	19.2000	28.8500	32.4500	29.4500	26.6000	30.0500	34.0500	31.6500	29.3000	26.5000
8/31/2016	20.1000	19.3000	19.2500	28.9000	32.5000	29.5000	26.6500	30.1000	34.1000	31.7000	29.3500	26.5500
9/1/2016	19.9500	19.1500	19.1000	28.7000	32.2500	29.2500	26.4500	29.9000	33.8500	31.4500	29.1500	26.3500
9/2/2016	19.9500	19.1500	19.1000	28.7000	32.2500	29.2500	26.4500	29.9000	33.8500	31.4500	29.1500	26.3500
9/6/2016	19.8500	19.0500	19.0000	28.5500	32.1000	29.1000	26.3000	29.7500	33.7000	31.2500	29.0000	26.2000
9/7/2016	19.8500	19.0500	19.0000	28.5500	32.1000	29.1000	26.3000	29.7500	33.7000	31.2000	28.9500	26.1500
9/8/2016	19.8500	19.0500	20.0000	28.5500	32.1000	29.1000	26.3000	29.7500	33.7000	31.2500	29.0000	26.2000
9/9/2016	19.6500	18.8500	19.8000	28.3000	31.8000	28.8000	26.0500	29.5000	33.4000	30.9500	28.7500	25.9500
9/12/2016	19.6500	18.8500	19.8000	28.3000	31.8000	28.8000	26.0500	29.5000	33.4000	30.9500	28.7500	25.9500
9/13/2016	19.6500	18.8500	19.8000	28.3000	31.8000	28.8000	26.0500	29.5000	33.4000	30.9500	28.7500	25.9500
9/14/2016	19.5000	18.7000	19.6500	28.1000	31.6000	28.6000	25.8500	29.3000	33.1500	30.7500	28.5500	25.8000
9/15/2016	19.7000	18.9000	19.8500	28.1000	31.6000	28.6000	25.8500	29.3000	33.1500	30.8000	28.6000	25.8500
9/16/2016	19.7000	18.9000	19.8500	28.1000	31.6000	28.6000	25.8500	29.3000	33.1500	30.8000	28.6000	25.8500
9/19/2016	19.5500	18.7500	19.7000	27.9000	31.4000	28.4000	25.6500	29.1000	32.9500	30.6000	28.4000	25.6500
9/20/2016	19.5500	18.7500	19.7000	27.9000	31.4000	28.4000	25.6500	29.1000	32.9500	30.6000	28.4000	25.6500
9/21/2016	19.7500	18.9500	19.9000	27.9000	31.4000	28.4000	25.6500	29.1000	32.9500	30.6500	28.4500	25.7000
9/22/2016	19.7500	18.9500	19.9000	27.9000	31.4000	28.4000	25.6500	29.1000	32.9500	30.6500	28.4500	25.7000
9/23/2016	19.7500	18.9500	19.9000	28.1500	31.6500	28.6500	25.6500	29.1000	32.9500	30.7000	28.5000	25.7500
9/26/2016	19.6000	18.8000	19.7000	27.9500	31.4000	28.4000	25.4500	28.9000	32.7500	30.4500	28.3000	25.5500
9/27/2016	19.8500	19.0500	19.9500	28.3500	31.9000	28.8000	25.8000	29.3500	33.3000	30.9000	28.7000	25.9000
9/28/2016	19.2000	18.4500	19.3000	28.2500	31.7500	28.7000	25.7000	29.2500	33.1500	30.6000	28.4500	25.6500
9/29/2016	19.0500	18.3500	19.3500	28.4000	31.9000	28.8500	25.8500	29.4000	33.3000	30.6500	28.5000	25.7000
9/30/2016	19.0000	18.3000	19.3000	28.3500	31.8000	28.8000	25.8000	29.3500	33.2000	30.6000	28.4500	25.6500
<b>Average HL</b>	21.61	20.66	20.72	29.01	32.65	29.61	26.90	30.12	34.01	32.32	29.80	26.74

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
April 2016 - March 2017

Idaho Power/102  
Blackwell/6

<b>MidC HL</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>	<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
<b>Max HL</b>	24.25	23.20	23.20	31.30	35.30	31.95	29.35	32.80	37.15	34.75	32.10	28.95
<b>Min HL</b>	19.00	18.30	18.55	25.75	29.10	26.35	24.40	27.25	30.75	30.05	27.60	24.75
<b>Spread</b>	5.25	4.90	4.65	5.55	6.20	5.60	4.95	5.55	6.40	4.70	4.50	4.20

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/7

MidC LL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
9/30/2015	18.2500	14.0500	12.2500	17.2500	23.1500	23.8500	23.7000	25.5000	28.1500	30.3500	28.6000	25.5000
10/1/2015	18.2500	14.0500	12.2500	17.2500	23.1500	23.8500	23.7000	25.5000	28.1500	30.3500	28.6000	25.5000
10/2/2015	17.9000	13.7000	11.9000	16.7500	22.6000	23.3500	23.2500	25.0000	27.6000	29.8500	28.1500	25.1000
10/5/2015	17.9000	13.7000	11.9000	16.2500	22.0500	22.8500	23.2500	25.0000	27.6000	29.6500	27.9500	24.9500
10/6/2015	17.9000	13.7000	11.9000	16.2500	22.0500	22.8500	23.2500	25.0000	27.6000	29.6500	27.9500	24.9500
10/7/2015	18.0500	13.8000	12.0000	16.4000	22.2500	23.0500	23.4500	25.2500	27.8500	29.6500	27.9500	24.9500
10/8/2015	18.0500	13.8000	12.0000	16.4000	22.2500	23.0500	23.4500	25.2500	27.8500	29.6500	27.9500	24.9500
10/9/2015	18.6500	14.3500	12.5500	17.1000	23.1000	23.8500	24.2000	26.1000	28.8000	30.2000	28.4500	25.4000
10/12/2015	18.6500	14.3500	12.5500	17.1000	23.1000	23.8500	24.2000	26.1000	28.8000	30.2000	28.4500	25.4000
10/13/2015	18.6500	14.3500	12.5500	17.1000	23.1000	23.8500	24.2000	26.1000	28.8000	30.2000	28.4500	25.4000
10/14/2015	18.6500	14.3500	12.5500	17.1000	23.1000	23.8500	24.2000	26.1000	28.8000	30.2000	28.4500	25.4000
10/15/2015	18.8000	14.5000	12.7000	17.3000	23.3000	24.0500	24.3500	26.3000	29.0000	30.4000	28.6500	25.5500
10/16/2015	18.9000	14.6000	12.8000	17.6500	23.7000	24.4000	23.9000	25.8000	28.4500	30.5000	28.7500	25.6000
10/19/2015	18.9000	14.6000	12.8000	17.7000	23.7500	24.4500	23.6000	25.4500	28.0500	30.4000	28.7000	25.5500
10/20/2015	18.9000	14.6000	12.8000	17.7000	23.7500	24.4500	23.6000	25.4500	28.0500	30.4000	28.7000	25.5500
10/21/2015	18.9000	14.6000	12.8000	17.7000	23.7500	24.4500	23.6000	25.4500	28.0500	30.4000	28.7000	25.5500
10/22/2015	18.9000	14.6000	12.8000	17.7000	23.7500	24.4500	23.6000	25.4500	28.0500	30.4000	28.7000	25.5500
10/23/2015	18.9000	14.6000	12.8000	17.7000	23.7500	24.4500	23.6000	25.4500	28.0500	30.4000	28.7000	25.5500
10/26/2015	18.8500	14.5500	12.7500	17.6500	23.7000	24.4000	23.5500	25.4000	28.0000	30.3500	28.6500	25.5000
10/27/2015	18.8500	14.5500	12.7500	17.6500	23.7000	24.4000	23.5500	25.4000	28.0000	30.3500	28.6500	25.5000
10/28/2015	18.8000	14.5000	12.7000	17.6000	23.6500	24.3500	23.5000	25.3500	27.9500	30.3000	28.6000	25.4500
10/29/2015	18.8000	14.5000	12.7000	17.6000	23.6500	24.3500	23.5000	25.3500	27.9500	30.3000	28.6000	25.4500
10/30/2015	18.8000	14.5000	12.7000	17.6000	23.6500	24.3500	23.5000	25.3500	27.9500	30.3000	28.6000	25.4500
11/2/2015	18.7500	14.4500	12.6500	17.5000	23.5500	24.2500	23.4000	25.2500	27.8500	30.2000	28.5000	25.3500
11/3/2015	18.7000	14.4000	12.6000	17.0500	23.0500	23.8000	23.2500	25.0500	27.6500	30.0000	28.3000	25.2000
11/4/2015	18.9000	14.5500	12.7500	17.2500	23.3000	24.0000	22.8500	24.6000	27.1500	29.9500	28.2500	25.2000
11/5/2015	18.9500	14.6000	12.8000	17.3000	23.3500	24.0500	22.9000	24.6500	27.2000	29.9500	28.2500	25.2000
11/6/2015	19.0000	14.6500	12.8500	17.3000	23.3500	24.0500	22.8500	24.6000	27.1500	29.9500	28.2500	25.2000
11/9/2015	19.0000	14.6500	12.8500	17.3000	23.3500	24.0500	22.8500	24.6000	27.1500	29.9500	28.2500	25.2000
11/10/2015	19.0000	14.6500	12.8500	17.3000	23.3500	24.0500	22.8500	24.6000	27.1500	29.9500	28.2500	25.2000
11/11/2015	19.0000	14.6500	12.8500	17.3000	23.3500	24.0500	22.8500	24.6000	27.1500	29.9500	28.2500	25.2000
11/12/2015	18.6500	14.3000	12.5000	16.8500	22.8500	23.6000	22.4500	24.1500	26.6500	29.5000	27.8000	24.8000
11/13/2015	18.6000	14.2500	12.4500	16.8000	22.7500	23.5500	22.4000	24.1000	26.5500	29.4500	27.7500	24.7500
11/16/2015	18.5500	14.2000	12.4000	16.7500	22.7000	23.5000	22.3500	24.0500	26.5000	29.4000	27.7000	24.7000
11/17/2015	18.5500	14.2000	12.4000	16.7500	22.7000	23.5000	22.3500	24.0500	26.5000	29.4000	27.7000	24.7000
11/18/2015	18.5500	14.2000	12.4000	16.7500	22.7000	23.5000	22.3500	24.0500	26.5000	29.4000	27.7000	24.7000
11/19/2015	19.7500	15.1000	13.2000	17.8500	24.1500	25.0000	23.8000	25.6000	28.2000	29.4000	27.7000	24.7000
11/20/2015	19.1500	14.5000	12.6000	17.4500	23.7000	24.5500	24.0500	25.9000	28.5000	29.2500	27.6000	24.6000
11/23/2015	19.0000	14.4000	12.5500	17.3500	23.5500	24.3500	23.8500	25.7000	28.2500	29.4000	27.7500	24.7000
11/24/2015	18.7000	14.0000	12.1000	16.8000	23.0000	23.9500	23.6000	25.3500	27.8500	29.7500	28.1000	25.0500
11/25/2015	18.7000	14.0000	12.1000	16.8000	23.0000	23.9500	23.6000	25.3500	27.8500	29.7500	28.1000	25.0500
11/27/2015	18.7000	14.0000	12.1000	16.8000	23.0000	23.9500	23.6000	25.3500	27.8500	29.7500	28.1000	25.0500
11/30/2015	19.0500	14.3500	12.4500	17.3000	23.5500	24.4000	24.0000	25.8000	28.3500	30.3000	28.6000	25.5000
12/1/2015	19.0500	14.3500	12.4500	17.3000	23.5500	24.4000	24.0000	25.8000	28.3500	30.3000	28.6000	25.5000
12/2/2015	18.7500	14.0500	12.1500	16.9000	23.1000	24.0000	23.6500	25.4000	27.9500	29.9000	28.2500	25.2000
12/3/2015	18.7500	14.0500	12.1500	16.9000	23.1000	24.0000	23.6500	25.4000	27.9500	29.9000	28.2500	25.2000
12/4/2015	18.7500	14.0500	12.1500	16.9000	23.1000	24.0000	23.6500	25.4000	27.9500	29.9000	28.2500	25.2000
12/7/2015	18.5500	13.8500	11.9500	16.6500	22.8000	23.7500	23.4500	25.1500	27.6500	29.6500	28.0000	25.0000
12/8/2015	18.4500	13.7500	11.8500	16.5000	22.6500	23.6000	23.3500	25.0000	27.5000	29.5000	27.8500	24.9000
12/9/2015	18.4500	13.7500	11.8500	16.5000	22.6500	23.6000	23.3500	25.0000	27.5000	29.5000	27.8500	24.9000
12/10/2015	18.4000	13.7000	11.8000	16.4500	22.5500	23.5500	23.3000	24.9500	27.4000	29.4000	27.8000	24.8500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/8

MidC LL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
12/11/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/14/2015	18.4000	13.6500	11.7500	16.4500	22.5500	23.5500	23.3000	24.9500	27.4000	29.4000	27.8000	24.8500
12/15/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/16/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/17/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/18/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/21/2015	18.5000	13.7500	11.8500	16.5500	22.6500	23.6500	23.4000	25.0500	27.5000	29.5000	27.9000	24.9500
12/22/2015	18.5500	13.8000	11.9000	16.6000	22.7500	23.7000	23.4500	25.1000	27.6000	29.5500	27.9500	25.0000
12/23/2015	18.9000	14.1500	12.2500	17.0500	23.2500	24.1500	24.5000	26.3000	28.9500	29.9500	28.3000	25.3000
12/24/2015	18.9000	14.1500	12.2500	17.0500	23.2500	24.1500	24.5000	26.3000	28.9500	29.9500	28.3000	25.3000
12/28/2015	19.0500	14.3000	12.4000	17.2500	23.5000	24.3500	24.7000	26.5000	29.2000	30.1500	28.5000	25.5000
12/29/2015	19.0500	14.4000	12.5000	17.4000	23.6000	24.3500	24.6500	26.5000	29.2000	31.0000	29.2500	26.2000
12/30/2015	18.9500	14.3500	12.4500	17.3000	23.4500	24.2000	24.5000	26.3500	29.0000	31.0000	29.2500	26.2000
12/31/2015	19.0000	14.4500	12.5500	17.4500	23.6500	24.3000	24.5500	26.4000	29.1500	31.3500	29.6000	26.5000
1/4/2016	18.9500	14.4000	12.5000	17.3500	23.5500	24.2000	24.5000	26.3000	29.0500	31.2500	29.5000	26.4500
1/5/2016	18.7500	14.2500	12.3500	17.1000	23.3000	23.9500	24.3000	26.0500	28.8000	31.0000	29.3000	26.2500
1/6/2016	19.0500	14.5000	12.5500	17.3500	23.6500	24.3500	24.7000	26.4500	29.2500	31.0000	29.3000	26.2500
1/7/2016	18.9500	14.4500	12.5000	17.2500	23.5500	24.2500	24.6000	26.3500	29.1500	31.0000	29.3000	26.2500
1/8/2016	19.1000	14.6000	12.6500	17.4500	23.7500	24.4500	24.8000	26.5500	29.3500	31.2000	29.5000	26.4000
1/11/2016	18.8500	14.4000	12.4500	17.1500	23.4000	24.1500	24.5000	26.2500	29.0000	30.9000	29.2000	26.1500
1/12/2016	18.5000	14.0500	12.1000	16.7000	22.9000	23.7000	24.1000	25.8000	28.5000	30.4500	28.8000	25.7500
1/13/2016	18.5000	14.0500	12.1000	16.7000	22.9000	23.7000	24.1000	25.8000	28.5000	30.4500	28.8000	25.7500
1/14/2016	18.3000	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2000	30.2000	28.5500	25.5000
1/15/2016	18.3000	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2000	30.2000	28.5500	25.5000
1/19/2016	18.3000	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2000	30.2000	28.5500	25.5000
1/20/2016	18.2000	13.8000	11.8500	16.3500	22.5000	23.3500	23.7500	25.4500	28.1000	30.1000	28.4500	25.4000
1/21/2016	18.1500	13.7500	11.8000	16.3000	22.4500	23.3000	23.7000	25.4000	28.0500	30.0500	28.4000	25.3500
1/22/2016	18.2500	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2500	30.2000	28.5500	25.5000
1/25/2016	18.2500	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2500	30.2000	28.5500	25.5000
1/26/2016	18.2500	13.8500	11.9000	16.4500	22.6000	23.4500	23.8500	25.5500	28.2500	30.2000	28.5500	25.5000
1/27/2016	18.1000	13.7000	11.7500	16.2500	22.3500	23.2500	23.6500	25.3500	28.0000	30.0000	28.3500	25.3500
1/28/2016	18.0500	13.6500	11.7000	16.2000	22.3000	23.2000	23.6000	25.3000	27.9500	29.9500	28.3000	25.3000
1/29/2016	18.0500	13.6500	11.7000	16.2000	22.3000	23.2000	23.6000	25.3000	27.9500	29.9500	28.3000	25.3000
2/1/2016	18.0500	13.6500	11.7000	16.2000	22.3000	23.2000	23.6000	25.3000	27.9500	29.9500	28.3000	25.3000
2/2/2016	17.8000	13.4000	11.4500	15.8500	21.9000	22.8500	23.3000	24.9500	27.5500	29.6000	27.9500	25.0000
2/3/2016	17.7500	13.3500	11.4000	15.8000	21.8500	22.8000	23.2500	24.9000	27.5000	29.6000	27.9500	25.0000
2/4/2016	17.7000	13.3000	11.3500	15.7000	21.7500	22.7000	23.2000	24.8000	27.4000	29.5000	27.9000	24.9500
2/5/2016	17.6500	13.2500	11.3000	15.6500	21.7000	22.6500	23.1500	24.7500	27.3500	29.4500	27.8500	24.9000
2/8/2016	17.7500	13.3500	11.4000	15.7500	21.8500	22.8000	23.2500	24.9000	27.5000	29.6000	27.9500	25.0000
2/9/2016	18.1000	13.6000	11.6000	16.0500	22.2500	23.2000	23.7000	25.3500	28.0000	29.5500	27.9000	24.9500
2/10/2016	18.1000	13.6000	11.6000	16.0500	22.2500	23.2000	23.7000	25.3500	28.0000	29.5500	27.9000	24.9500
2/11/2016	18.0000	13.5000	11.5000	15.9000	22.1000	23.0500	23.6000	25.2000	27.8500	29.4000	27.7500	24.8500
2/12/2016	18.0000	13.5000	11.5000	15.9000	22.1000	23.0500	23.6000	25.2000	27.8500	29.4000	27.7500	24.8500
2/16/2016	17.3500	12.8500	10.8500	15.0500	21.1500	22.2000	22.8500	24.3500	26.8500	28.5000	26.9500	24.1500
2/17/2016	17.3500	12.8000	10.8000	15.0000	21.1000	22.1500	22.8500	24.3500	26.8000	28.4000	26.8500	24.0500
2/18/2016	17.5000	12.9000	10.8500	14.2000	20.3000	21.4500	23.1000	24.6000	27.0500	27.8500	26.3500	23.6000
2/19/2016	17.4500	12.9000	10.9000	14.2500	20.3000	21.4000	23.0500	24.5500	27.0000	28.5000	26.9500	24.1500
2/22/2016	17.1500	12.6500	10.6500	13.9000	19.9000	21.0500	22.7000	24.2000	26.6000	28.1000	26.6000	23.8500
2/23/2016	17.1500	12.6500	10.6500	13.9000	19.9000	21.0500	22.7000	24.2000	26.6000	28.1000	26.6000	23.8500
2/24/2016	17.1500	12.6500	10.6500	13.9000	19.9000	21.0500	22.7000	24.2000	26.6000	28.1000	26.6000	23.8500
2/25/2016	17.0000	12.5000	10.5000	13.7000	19.7000	20.8500	22.5500	24.0000	26.4000	27.9000	26.4000	23.7000



Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/9

MidC LL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
2/26/2016	16.8500	12.3500	10.3500	13.5000	19.5000	20.6500	22.3500	23.8000	26.1500	27.7000	26.2000	23.5500
2/29/2016	16.8000	12.3500	10.3500	13.4500	19.4500	20.6000	22.3000	23.7500	26.1000	27.6500	26.1500	23.5000
3/1/2016	17.1500	12.6500	10.6500	13.8500	19.9500	21.0500	22.7000	24.2000	26.6000	28.1000	26.5500	23.8500
3/2/2016	17.1500	12.6500	10.6500	13.8500	19.9000	21.0500	22.7000	24.1500	26.5500	28.0500	26.5500	23.8500
3/3/2016	17.1000	12.6000	10.6000	13.8000	19.8500	21.0000	22.6500	24.1000	26.5000	28.0000	26.5000	23.8000
3/4/2016	17.1000	12.6000	10.6000	13.8000	19.8500	21.0000	22.6500	24.1000	26.5000	28.0000	26.5000	23.8000
3/7/2016	17.1500	12.6500	10.6500	13.8500	19.9000	21.0500	22.7500	24.2000	26.6000	27.9500	26.4500	23.7500
3/8/2016	16.6000	12.1000	10.1000	13.8000	19.8500	21.0000	22.7000	24.1500	26.5000	27.7500	26.2500	23.6000
3/9/2016	16.6500	12.1500	10.1500	13.6500	19.6500	20.8500	22.7500	24.2000	26.5500	27.7500	26.2500	23.6000
3/10/2016	16.7500	12.2500	10.2500	13.8000	19.8000	21.0000	22.9000	24.3500	26.7500	27.9000	26.4000	23.7500
3/11/2016	17.0000	12.5000	10.5000	14.1500	20.2000	21.3500	23.2000	24.7000	27.1500	28.2500	26.7500	24.0500
3/14/2016	17.1000	12.6000	10.6000	14.3000	20.3500	21.5000	23.3500	24.8500	27.3000	28.4000	26.9000	24.1500
3/15/2016	17.1500	12.6500	10.6500	14.3500	20.4000	21.5500	23.4000	24.9000	27.3500	28.4500	26.9500	24.2000
3/16/2016	17.2500	12.7500	10.7500	14.5000	20.5500	21.7000	23.5500	25.0500	27.5000	28.6000	27.1000	24.3500
3/17/2016	17.4500	12.9500	10.9500	14.7500	20.8500	21.9500	23.8000	25.3000	27.8000	28.8500	27.3500	24.6000
3/18/2016	17.2000	12.7000	10.7000	14.1500	20.1500	21.3000	23.8000	25.3000	27.8000	28.3500	26.8500	24.1500
3/21/2016	17.0500	12.5500	10.5500	13.9500	19.9500	21.1000	23.6000	25.1000	27.5500	28.1500	26.6500	23.9500
3/22/2016	16.7000	12.2000	10.2000	14.0500	20.0500	21.2000	23.6000	25.1000	27.5500	28.1500	26.6500	23.9500
3/23/2016	16.7000	12.2000	10.2000	14.1000	20.1000	21.2500	23.6000	25.1500	27.6000	28.2000	26.7000	23.9500
3/24/2016	17.2500	12.6000	10.5500	14.5500	20.7500	21.9500	24.3500	25.9500	28.5000	28.2500	26.7500	24.0000
3/25/2016	17.2500	12.6000	10.5500	14.5500	20.7500	21.9500	24.3500	25.9500	28.5000	28.2500	26.7500	24.0000
3/28/2016	17.2000	12.5500	10.5000	14.5000	20.7000	21.9000	24.3000	25.9000	28.4500	28.2000	26.7000	23.9500
3/29/2016	17.1500	12.5000	10.4500	14.4500	20.6500	21.8500	24.2500	25.8500	28.4000	28.1500	26.6500	23.9000
3/30/2016	17.2000	12.5500	10.5000	14.5000	20.7000	21.9000	24.3000	25.9000	28.4500	28.2000	26.7000	23.9500
3/31/2016	17.2500	12.6000	10.5500	14.6000	20.8000	22.0000	24.4000	26.0000	28.5500	28.6500	27.1000	24.3000
4/1/2016	17.3500	12.7000	10.6500	14.7000	20.9000	22.1000	24.5000	26.1000	28.7000	28.8500	27.3000	24.4500
4/4/2016	17.3500	12.7000	10.6500	14.7000	20.9000	22.1000	24.5000	26.1000	28.7000	28.8500	27.3000	24.4500
4/5/2016	17.2000	12.5500	10.5000	14.5500	20.7000	21.9500	24.3500	25.9000	28.5000	28.8500	27.3000	24.4500
4/6/2016	17.2500	12.6000	10.5500	14.6500	20.8000	22.0500	24.4000	26.0000	28.6000	28.9500	27.4000	24.5000
4/7/2016	16.2000	11.6000	9.5500	15.1000	21.3500	22.5500	24.8500	26.5000	29.2000	29.1000	27.5500	24.6000
4/8/2016	16.3500	11.7000	9.6500	15.0000	21.2000	22.4000	24.6500	26.3000	28.9500	29.0000	27.5000	24.5500
4/11/2016	16.4500	11.8000	9.7500	15.1500	21.3500	22.5500	24.8000	26.4500	29.1500	29.1500	27.6500	24.7000
4/12/2016	16.3500	11.7000	9.6500	15.3500	21.6000	22.7500	25.0000	26.7000	29.4000	29.3000	27.8000	24.8500
4/13/2016	16.4500	11.8000	9.7500	15.8000	22.1000	23.2000	25.4000	27.1500	29.9000	29.7000	28.1500	25.2000
4/14/2016	16.3500	11.7500	9.7000	15.7000	22.0000	23.1000	25.2500	27.0000	29.7500	29.7000	28.1500	25.2000
4/15/2016	16.3500	11.7500	9.7000	15.7000	22.0000	23.1000	25.2500	27.0000	29.7500	29.7000	28.1500	25.2000
4/18/2016	16.3500	11.7500	9.7000	15.7000	22.0000	23.1000	25.2500	27.0000	29.7500	29.7000	28.1500	25.2000
4/19/2016	16.5500	11.9000	9.8500	15.9500	22.3000	23.3500	25.5000	27.3000	30.0500	29.9500	28.4000	25.4500
4/20/2016	16.4500	11.9000	9.8500	15.9500	22.2000	23.2000	25.3000	27.1000	29.8500	30.3000	28.7500	25.7500
4/21/2016	16.4500	11.9000	9.8500	15.9500	22.2000	23.2000	25.3000	27.1000	29.8500	30.3000	28.7500	25.7500
4/22/2016	16.5500	12.0000	9.9500	16.1000	22.3500	23.3500	25.4500	27.2500	30.0500	30.4500	28.9000	25.9000
4/25/2016	16.7000	12.1500	10.1000	16.3000	22.5500	23.5500	25.6500	27.4500	30.3000	30.6500	29.1000	26.1000
4/26/2016	16.7500	12.2000	10.1500	16.4000	22.6500	23.6500	23.6000	25.2500	27.9000	30.7500	29.2000	26.2000
4/27/2016	17.6500	13.0500	11.0000	17.1500	23.5000	24.4000	24.3000	26.0500	28.8000	31.4000	29.8000	26.7500
4/29/2016	17.8000	13.2000	11.2000	17.4500	23.7500	24.6000	24.4000	26.2000	29.0000	29.8500	28.3500	25.4000
5/2/2016	17.9000	13.3000	11.3000	17.5500	23.8500	24.7000	24.5000	26.3000	29.1500	29.9500	28.4500	25.5000
5/3/2016	18.0500	13.4500	11.4500	17.8000	24.1000	24.9500	24.7000	26.5500	29.4500	30.2000	28.6500	25.7000
5/4/2016	18.1500	13.5000	11.5000	17.9000	24.2000	25.0500	24.8000	26.6500	29.6000	30.3000	28.7500	25.8000
5/5/2016	18.1500	13.5000	11.5000	18.4000	24.7500	25.5500	24.4000	26.2000	29.1000	30.4500	28.9000	25.9500
5/6/2016	18.3500	13.7000	11.7000	18.6500	25.0500	25.8500	24.6500	26.5000	29.4000	30.7500	29.1500	26.2000
5/9/2016	18.2500	13.6000	11.6000	18.5000	24.9000	25.7000	24.5000	26.3500	29.2000	30.6000	29.0000	26.0500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/10

MidC LL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
5/10/2016	18.2000	13.5500	11.5500	18.4000	24.8000	25.6000	24.4000	26.2500	29.1000	30.5000	28.9000	25.9500
5/11/2016	17.8500	13.2000	11.2000	17.9000	24.2000	25.0500	23.9000	25.7000	28.5000	29.9500	28.4000	25.5000
5/12/2016	17.8500	13.2000	11.2000	17.9000	24.2000	25.0500	23.9000	25.7000	28.5000	29.9500	28.4000	25.5000
5/13/2016	17.7500	13.1000	11.1000	17.7500	24.0000	24.9000	23.7500	25.5500	28.3000	29.8000	28.2500	25.3500
5/16/2016	17.6500	13.0000	11.0000	17.6500	23.8500	24.8000	23.6500	25.4500	28.1500	29.7000	28.1500	25.2500
5/17/2016	17.6000	12.9500	10.9500	17.5500	23.7500	24.7000	23.5500	25.3500	28.0500	29.6000	28.0500	25.2000
5/18/2016	17.4500	12.8000	10.8000	17.3500	23.5000	24.4500	23.3500	25.1000	27.8000	29.3500	27.8500	25.0000
5/19/2016	17.4500	12.8000	10.8000	17.3500	23.5000	24.4500	23.3500	25.1000	27.8000	29.3500	27.8500	25.0000
5/20/2016	17.4000	12.7500	10.7500	17.3000	23.4500	24.4000	23.3000	25.0500	27.7000	29.3000	27.8000	24.9500
5/23/2016	17.4000	12.7500	10.7500	17.3000	23.4500	24.4000	23.3000	25.0500	27.7000	29.3000	27.8000	24.9500
5/24/2016	17.2000	12.5500	10.5500	17.0500	23.1500	24.1500	23.0500	24.7500	27.4000	29.0000	27.5500	24.7000
5/25/2016	17.4500	12.8000	10.8000	17.4000	23.5500	24.5000	23.3500	25.1000	27.8000	29.3500	27.9000	25.0000
5/26/2016	17.5500	12.8500	10.8500	17.5000	23.6500	24.6000	23.4500	25.2000	27.9500	29.4500	28.0000	25.1000
5/27/2016	17.5000	12.8000	10.8000	17.4500	23.6000	24.5500	23.4000	25.1500	27.8500	29.4000	27.9500	25.0500
5/31/2016	17.9500	13.1500	11.1000	17.9000	24.2000	25.1500	23.9500	25.7500	28.5500	29.5000	28.0500	25.1500
6/1/2016	17.8500	13.0500	11.0000	17.7500	24.0000	25.0000	23.8000	25.6000	28.3500	29.1500	27.7500	24.8500
6/2/2016	17.9000	13.1000	11.0500	17.8000	24.1000	25.0500	23.8500	25.6500	28.4500	29.2000	27.8000	24.9000
6/3/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1500	26.0000	28.8500	29.5500	28.1000	25.2000
6/6/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1500	26.0000	28.8500	29.5500	28.1000	25.2000
6/7/2016	18.2000	13.3500	11.3000	18.2000	24.5500	25.5000	24.2500	26.1000	28.9500	29.6500	28.2000	25.3000
6/8/2016	18.0500	13.2000	11.1500	17.9500	24.3000	25.2500	24.0000	25.8500	28.6500	29.4000	27.9500	25.1000
6/9/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1000	26.0000	28.8000	29.5500	28.0500	25.2000
6/10/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1000	26.0000	28.8000	29.5500	28.0500	25.2000
6/13/2016	18.1000	13.2500	11.2000	18.0000	24.3500	25.3000	24.0500	25.9000	28.7000	29.4500	27.9500	25.1500
6/14/2016	18.1000	13.2500	11.2000	18.0500	24.4000	25.3500	24.1000	25.9500	28.7500	29.5000	28.0000	25.2000
6/15/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1500	26.0000	28.8000	29.5500	28.0500	25.2500
6/16/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1500	26.0000	28.8000	29.5500	28.0500	25.2500
6/17/2016	18.1500	13.3000	11.2500	18.1000	24.4500	25.4000	24.1500	26.0000	28.8000	29.5500	28.0500	25.2500
6/20/2016	18.2000	13.3500	11.3000	18.1500	24.5000	25.4500	24.2000	26.0500	28.8500	29.6000	28.1000	25.3000
6/21/2016	18.3000	13.4500	11.4000	18.2500	24.6500	25.6000	24.3000	26.2000	29.0000	29.7500	28.2000	25.4000
6/22/2016	17.9500	13.1000	11.0500	17.7500	24.1000	25.1000	23.8500	25.6500	28.4000	29.2000	27.7000	24.9500
6/23/2016	17.9500	13.1000	11.0500	17.7500	24.1000	25.1000	23.8500	25.6500	28.4000	29.2000	27.7000	24.9500
6/24/2016	17.9500	13.1000	11.0500	17.7500	24.1000	25.1000	23.8500	25.6500	28.4000	29.2000	27.7000	24.9500
6/27/2016	17.9000	13.0500	11.0000	17.7000	24.0500	25.0500	23.8000	25.6000	28.3500	29.1500	27.6500	24.9000
6/28/2016	17.9500	13.1000	11.0500	17.8000	24.1500	25.1500	23.9000	25.7000	28.4500	29.1000	27.6000	24.8500
6/29/2016	18.1000	13.2500	11.2000	18.0500	24.4000	25.4000	24.1000	25.9500	28.7000	29.3500	27.8000	25.0500
6/30/2016	18.3500	13.5000	11.4500	18.4000	24.8000	25.8000	24.4500	26.3500	29.1500	29.7500	28.1500	25.3500
7/1/2016	18.4000	13.5500	11.5000	18.4500	24.9000	25.8500	24.5000	26.4000	29.2500	29.8000	28.2000	25.4000
7/5/2016	18.3000	13.4500	11.4000	18.3000	24.7500	25.7000	24.4000	26.2500	29.1000	29.6500	28.1000	25.3000
7/6/2016	18.1500	13.3000	11.2500	18.0500	24.5000	25.5000	24.2000	26.0500	28.8500	29.3000	27.8000	25.0000
7/7/2016	18.1000	13.2500	11.2000	18.1500	24.6500	25.7000	24.1500	26.0000	28.8000	29.2500	27.7500	24.9500
7/8/2016	18.2500	13.4000	11.3500	18.3500	24.8500	25.9000	24.3500	26.2000	29.0500	29.4500	27.9500	25.1000
7/11/2016	17.8500	13.0000	10.9500	16.9500	23.2500	24.4500	24.0500	25.9000	28.7000	29.0500	27.6000	24.8000
7/12/2016	17.9000	13.0000	10.9500	18.5500	25.4500	26.7500	24.1000	25.9500	28.7500	29.0500	27.6000	24.8000
7/13/2016	17.9000	13.0000	10.9500	18.5500	25.4500	26.7500	24.1000	25.9500	28.7500	29.0500	27.6000	24.8000
7/14/2016	17.9000	13.0000	10.9500	18.5500	25.4500	26.7500	24.1000	25.9500	28.7500	29.0500	27.6000	24.8000
7/15/2016	17.9500	13.0500	11.0000	18.6000	25.5000	26.8000	24.1500	26.0000	28.8000	29.1000	27.6500	24.8500
7/18/2016	17.9000	13.0000	10.9500	18.5500	25.4500	26.7500	24.1000	25.9500	28.7000	29.0500	27.6000	24.8000
7/19/2016	17.8500	13.0000	11.0000	18.5000	25.4000	26.7000	24.0500	25.9000	28.6500	29.0500	27.6000	24.8000
7/20/2016	17.8000	12.9500	10.9500	18.4000	25.3000	26.6000	23.9500	25.8000	28.5500	28.9500	27.5000	24.7000
7/21/2016	17.8000	12.9500	10.9500	18.4500	25.3500	26.6500	23.9000	25.7500	28.5000	28.9500	27.5000	24.7000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
 April 2016 - March 2017

Idaho Power/102  
 Blackwell/11

MidC LL	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
7/22/2016	17.9500	13.1000	11.1000	18.6500	25.6000	26.8500	23.9000	25.8000	28.5500	29.1000	27.6500	24.8500
7/25/2016	17.9500	13.1000	11.1000	18.6000	25.5500	26.8000	23.8500	25.7500	28.5000	29.0500	27.6000	24.8000
7/26/2016	17.9500	13.1000	11.1000	18.6500	25.6000	26.8500	23.8500	25.7500	28.5000	29.0500	27.6000	24.8000
7/27/2016	17.4000	12.5500	10.5500	18.4000	25.3000	26.6000	23.6500	25.5500	28.2500	28.8000	27.3500	24.6000
7/28/2016	17.4000	12.5500	10.5500	18.3500	25.2500	26.5500	23.6000	25.5000	28.2000	28.7500	27.3000	24.6000
7/29/2016	17.2500	12.4000	10.4000	18.2000	25.0500	26.3500	23.4500	25.3500	28.0000	28.5500	27.1500	24.4500
8/1/2016	17.1500	12.3000	10.3000	18.1000	24.9500	26.2500	23.3500	25.2500	27.9000	28.4500	27.0500	24.3500
8/2/2016	17.1000	12.2500	10.2500	18.0000	24.8500	26.1500	23.2500	25.1500	27.8000	28.3500	26.9500	24.3000
8/3/2016	17.2000	12.3500	10.3500	18.1000	25.0000	26.2500	23.3500	25.2500	27.9500	28.5000	27.1000	24.4000
8/4/2016	17.2000	12.3500	10.3500	18.1000	25.0000	26.2500	23.3500	25.2500	27.9500	28.5000	27.1000	24.4000
8/5/2016	17.1500	12.3000	10.3000	18.0500	24.9000	26.1500	23.2500	25.1500	27.8500	28.5000	27.1000	24.4000
8/8/2016	17.2500	12.4000	10.4000	18.2000	25.0500	26.3000	23.4000	25.3000	28.0500	28.6500	27.2500	24.5500
8/9/2016	17.2500	12.4000	10.4000	18.2000	25.0500	26.3000	23.3000	25.2000	27.9500	28.6500	27.2500	24.5500
8/10/2016	17.0500	12.2500	10.3000	18.0000	24.7500	25.9500	23.0000	24.8500	27.6000	28.5000	27.1000	24.4500
8/11/2016	17.0500	12.2500	10.3000	18.0000	24.7500	25.9500	22.9000	24.7000	27.4500	28.4500	27.0500	24.4000
8/12/2016	17.0500	12.2500	10.3000	18.0000	24.7500	25.9500	22.9000	24.7000	27.4500	28.4500	27.0500	24.4000
8/15/2016	16.9500	12.1500	10.2000	17.8500	24.6000	25.8000	22.7500	24.5500	27.3000	28.3000	26.9000	24.2500
8/16/2016	16.8500	12.0500	10.1000	17.7500	24.5000	25.7000	22.6500	24.4500	27.2000	28.2000	26.8000	24.1500
8/17/2016	16.9500	12.1500	10.2000	17.9000	24.6500	25.8500	22.8000	24.6000	27.4000	28.3500	26.9500	24.3000
8/18/2016	16.6000	12.1000	10.1500	18.6000	25.4500	26.5500	22.8500	24.6500	27.4000	28.7000	27.3000	24.6000
8/19/2016	16.6000	12.1000	10.1500	18.6000	25.4500	26.5500	22.8500	24.6500	27.4000	28.7000	27.3000	24.6000
8/22/2016	16.3000	11.8000	9.8500	18.2500	25.1000	26.2000	22.5000	24.3000	27.1000	28.2500	26.9000	24.2500
8/23/2016	16.4500	12.0000	10.0500	18.5000	25.4000	26.4500	22.7000	24.5500	27.4000	28.7000	27.3000	24.6000
8/24/2016	16.4000	11.9500	10.0000	18.4500	25.3500	26.4000	22.6500	24.5000	27.3500	28.7500	27.3500	24.6500
8/25/2016	16.4500	12.0000	10.0500	18.5000	25.4000	26.4500	22.7000	24.5500	27.4000	28.8000	27.4000	24.7000
8/26/2016	16.4500	12.0000	10.0500	18.5000	25.4000	26.4500	22.7000	24.5500	27.4000	28.8000	27.4000	24.7000
8/29/2016	16.4000	11.9500	10.0000	18.4000	25.3000	26.3500	22.6000	24.4500	27.3000	28.6500	27.2500	24.5500
8/30/2016	16.1000	11.6500	9.7000	18.0000	24.9000	25.9500	22.2000	24.0500	26.9000	28.2000	26.8500	24.2000
8/31/2016	16.4000	11.9000	9.9000	18.0500	24.9500	26.0000	22.5000	24.4000	27.2500	28.2500	26.9000	24.2500
9/1/2016	16.2500	11.7500	9.7500	17.8500	24.7000	25.7500	22.3000	24.2000	27.0000	28.0000	26.7000	24.0500
9/2/2016	16.2500	11.7500	9.7500	17.8500	24.7000	25.7500	22.3000	24.2000	27.0000	28.0000	26.7000	24.0500
9/6/2016	16.1500	11.6500	9.6500	17.7000	24.5500	25.6000	22.1500	24.0500	26.8500	27.8000	26.5500	23.9000
9/7/2016	16.1500	11.6500	9.6500	17.7000	24.5500	25.6000	22.1500	24.0500	26.8500	27.7500	26.5000	23.8500
9/8/2016	16.1500	11.6500	10.6500	17.7000	24.5500	25.6000	22.1500	24.0500	26.8500	27.8000	26.5500	23.9000
9/9/2016	15.9500	11.4500	10.4500	17.4500	24.2500	25.3000	21.9000	23.8000	26.5500	27.5000	26.3000	23.6500
9/12/2016	16.0000	11.5000	10.5000	17.5000	24.3500	25.4000	22.0000	23.9000	26.6500	27.5000	26.3000	23.6500
9/13/2016	16.0000	11.5000	10.5000	17.5000	24.3500	25.4000	22.0000	23.9000	26.6500	27.5000	26.3000	23.6500
9/14/2016	15.8500	11.3500	10.3500	17.3000	24.1500	25.2000	21.8000	23.7000	26.4000	28.6500	27.4000	24.6500
9/15/2016	16.1500	11.6000	10.6500	17.4000	24.3000	25.3500	21.9500	23.8500	26.5500	28.7000	27.4500	24.7000
9/16/2016	16.1500	11.6000	10.6500	17.4000	24.3000	25.3500	21.9500	23.8500	26.5500	28.7000	27.4500	24.7000
9/19/2016	16.0000	11.4500	10.5000	17.2000	24.1000	25.1500	21.7500	23.6500	26.3500	28.5000	27.2500	24.5000
9/20/2016	16.0000	11.4500	10.5000	17.2000	24.1000	25.1500	21.7500	23.6500	26.3500	28.5000	27.2500	24.5000
9/21/2016	16.2000	11.6500	10.7000	17.2000	24.1000	25.1500	21.7500	23.6500	26.3500	28.5500	27.3000	24.5500
9/22/2016	16.2000	11.6500	10.7000	17.2000	24.1000	25.1500	21.7500	23.6500	26.3500	28.5500	27.3000	24.5500
9/23/2016	16.2000	11.6500	10.7000	17.4500	24.3500	25.4000	21.7500	23.6500	26.3500	28.6000	27.3500	24.6000
9/26/2016	16.0500	11.5000	10.5000	17.2500	24.1000	25.1500	21.5500	23.4500	26.1500	28.3500	27.1500	24.4000
9/27/2016	16.2500	11.7000	10.7000	17.6000	24.5000	25.4500	21.8000	23.8000	26.5500	28.8000	27.5500	24.7500
9/28/2016	15.6000	11.1000	10.0000	17.5000	24.3500	25.3500	21.7000	23.7000	26.4000	28.5000	27.3000	24.5000
9/29/2016	15.4500	11.0000	10.0500	17.6500	24.5000	25.5000	21.8500	23.8500	26.5500	28.4500	27.2500	24.4500
9/30/2016	15.4000	10.9500	10.0000	17.6000	24.4000	25.4500	21.8000	23.8000	26.4500	28.4000	27.2000	24.4000
<b>Average LL</b>	17.70	13.11	11.22	16.87	23.20	24.18	23.56	25.31	27.97	29.33	27.79	24.91

Mid-Columbia Heavy Load and Light Load Daily Forward Curves  
April 2016 - March 2017

Idaho Power/102  
Blackwell/12

<b>MidC LL</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>	<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
<b>Max LL</b>	19.75	15.10	13.20	18.65	25.60	26.85	25.65	27.45	30.30	31.40	29.80	26.75
<b>Min LL</b>	15.40	10.95	9.55	13.45	19.45	20.60	21.55	23.45	26.10	27.50	26.15	23.50
<b>Spread</b>	4.35	4.15	3.65	5.20	6.15	6.25	4.10	4.00	4.20	3.90	3.65	3.25

Idaho Power/103  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Producer Price Index for Electric Power

October 28, 2016

**Mnemonic:** FXPPIFU4.US  
**Description:** PPI: Electric Power - Total, (Index 1982=100, NSA) for United States  
**Source:** U.S. Bureau of Labor Statistics (BLS); Moody's Analytics (ECCA) Forecast  
**Native Frequency:** QUARTERLY  
**Geography:** United States

2011Q1	184.0333
2011Q2	188.1667
2011Q3	195.4000
2011Q4	187.9333
2012Q1	185.8333
2012Q2	188.8333
2012Q3	196.8667
2012Q4	190.4000
2013Q1	189.1667
2013Q2	193.1667
2013Q3	199.3000
2013Q4	191.7667
2014Q1	195.7333
2014Q2	200.8333
2014Q3	208.3000
2014Q4	199.0000
2015Q1	200.8333
2015Q2	203.5667
2015Q3	212.0333
2015Q4	199.3000
2016Q1	195.6667
2016Q2	200.4000
2016Q3	206.1869
2016Q4	196.5633
2017Q1	196.7107
2017Q2	201.8003
2017Q3	210.0352
2017Q4	202.0562
2018Q1	203.8009
2018Q2	209.9506
2018Q3	219.0251
2018Q4	211.0261
2019Q1	212.8749
2019Q2	219.1706
2019Q3	228.3550
2019Q4	219.7239
2020Q1	221.1884
2020Q2	227.1769
2020Q3	236.1024
2020Q4	226.7200
2021Q1	227.8402
2021Q2	233.7189
2021Q3	242.7391
2021Q4	233.0684

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Idaho Power Company's Forward Price Curves Discounted for Inflation  
Used to Re-Price Purchased Power  
and Surplus Sales for the October Update

October 28, 2016

**IDAHO POWER COMPANY**  
**MidC Forward Price Curves Discounted for Inflation**  
**Used to Re-Price Purchased Power and Surplus Sales for the October Update**

<u>Line No.</u>		<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>	<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
1	<b>Forward Curve Prices</b>												
2	Relevant Quarter	2018 Q2	2018 Q2	2018 Q2	2018 Q3	2018 Q3	2018 Q3	2018 Q4	2018 Q4	2018 Q4	2019 Q1	2019 Q1	2019 Q1
3	Deflator	2.0995	2.0995	2.0995	2.1903	2.1903	2.1903	2.1103	2.1103	2.1103	2.1287	2.1287	2.1287
4	<b>Water Year</b>	<b>Apr-17</b>	<b>May-17</b>	<b>Jun-17</b>	<b>Jul-17</b>	<b>Aug-17</b>	<b>Sep-17</b>	<b>Oct-17</b>	<b>Nov-17</b>	<b>Dec-17</b>	<b>Jan-18</b>	<b>Feb-18</b>	<b>Mar-18</b>
5	Relevant Quarter	2017 Q2	2017 Q2	2017 Q2	2017 Q3	2017 Q3	2017 Q3	2017 Q4	2017 Q4	2017 Q4	2018 Q1	2018 Q1	2018 Q1
6	Inflator	2.0180	2.0180	2.0180	2.1004	2.1004	2.1004	2.0206	2.0206	2.0206	2.0380	2.0380	2.0380
7	<b>Average Prices</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>	<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
8	MidC HL	21.61	20.66	20.72	29.01	32.65	29.61	26.90	30.12	34.01	32.32	29.80	26.74
9	MidC LL	17.70	13.11	11.22	16.87	23.20	24.18	23.56	25.31	27.97	29.33	27.79	24.91
10	<b>Inflation Adjusted</b>	<b>Apr-17</b>	<b>May-17</b>	<b>Jun-17</b>	<b>Jul-17</b>	<b>Aug-17</b>	<b>Sep-17</b>	<b>Oct-17</b>	<b>Nov-17</b>	<b>Dec-17</b>	<b>Jan-18</b>	<b>Feb-18</b>	<b>Mar-18</b>
11	MidC HL	20.77	19.86	19.92	27.82	31.31	28.39	25.76	28.84	32.56	30.94	28.53	25.60
12	MidC LL	17.01	12.60	10.78	16.18	22.25	23.19	22.55	24.24	26.79	28.07	26.60	23.85
13	<b>Difference</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>	<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
14	MidC HL	0.84	0.80	0.80	1.19	1.34	1.22	1.14	1.28	1.45	1.38	1.27	1.14
15	MidC LL	0.69	0.51	0.44	0.69	0.95	0.99	1.00	1.08	1.19	1.25	1.18	1.06
16	<b>Reallocated Prices</b>	<b>Apr-17</b>	<b>May-17</b>	<b>Jun-17</b>	<b>Jul-17</b>	<b>Aug-17</b>	<b>Sep-17</b>	<b>Oct-17</b>	<b>Nov-17</b>	<b>Dec-17</b>	<b>Jan-18</b>	<b>Feb-18</b>	<b>Mar-18</b>
17	<b>HL Purchased Power</b>												
18	103.9%	21.58	20.63	20.69	28.90	32.53	29.50	26.76	29.97	33.83	32.15	29.64	26.60
19	<b>LL Purchased Power</b>												
20	107.1%	18.22	13.50	11.55	17.33	23.83	24.84	24.16	25.96	28.69	30.07	28.49	25.54
21	<b>HL Surplus Sales</b>												
22	96.4%	20.02	19.14	19.20	26.82	30.18	27.37	24.83	27.80	31.39	29.83	27.50	24.68
23	<b>LL Surplus Sales</b>												
24	93.4%	15.89	11.77	10.07	15.11	20.78	21.66	21.07	22.64	25.02	26.22	24.85	22.27



Idaho Power/105  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Idaho Power Company's Power Supply Expenses for April 1, 2017 – March 31, 2018  
(Multiple Gas Prices – 88 Years of Hydro)

October 28, 2016

IPCO POWER SUPPLY EXPENSES FOR APRIL 1, 2017 -- MARCH 31, 2018 (Multiple Gas Prices/88 Years of Hydro Conditions)  
Repriced Using UE 195 Settlement Methodology - October Update  
AVERAGE

Line No.		April	May	June	July	August	September	October	November	December	January	February	March	Annual
1	Hydroelectric Generation (MWh)	886,708.0	953,501.2	920,434.9	701,404.3	480,709.0	562,295.9	544,650.6	459,087.5	679,246.4	761,208.9	841,860.9	859,799.5	8,650,907.1
	<b>Bridger</b>													
2	Energy (MWh)	45,512.5	23,629.1	93,755.6	262,612.0	299,451.3	178,326.3	166,635.7	185,609.1	240,430.2	208,079.5	154,326.5	145,595.4	2,003,963.0
3	Expense (\$ x 1000)	\$ 1,772.5	\$ 1,061.0	\$ 3,269.5	\$ 8,413.2	\$ 9,485.2	\$ 5,835.7	\$ 5,495.0	\$ 6,093.5	\$ 7,713.8	\$ 6,464.3	\$ 4,905.5	\$ 4,679.7	65,188.9
	<b>Boardman</b>													
4	Energy (MWh)	12,377.5	12,069.2	16,953.6	32,902.4	37,475.4	27,395.7	26,134.3	30,556.7	33,307.9	20,271.5	15,935.3	14,759.3	280,138.6
5	Expense (\$ x 1000)	\$ 363.2	\$ 354.1	\$ 484.2	\$ 886.9	\$ 1,002.5	\$ 748.6	\$ 716.0	\$ 826.2	\$ 895.1	\$ 619.7	\$ 496.9	\$ 467.0	7,860.3
	<b>Valmy</b>													
6	Energy (MWh)	4,719.8	1,689.8	10,901.5	36,029.1	45,340.0	23,087.3	22,473.5	22,001.0	31,494.5	18,349.3	16,988.6	14,114.9	247,189.3
7	Expense (\$ x 1000)	\$ 506.9	\$ 401.0	\$ 718.1	\$ 1,532.3	\$ 1,829.6	\$ 1,111.3	\$ 1,094.3	\$ 1,086.6	\$ 1,386.4	\$ 950.8	\$ 905.6	\$ 815.6	12,338.4
	<b>Langley Gulch</b>													
8	Energy (MWh)	175,532.6	171,918.2	182,201.9	197,830.4	198,877.6	193,314.8	191,330.0	185,215.8	190,938.7	168,458.6	148,331.3	156,060.9	2,160,010.8
9	Expense (\$ x 1000)	\$ 3,061.4	\$ 2,963.3	\$ 3,105.5	\$ 3,616.2	\$ 3,710.3	\$ 3,620.6	\$ 3,758.4	\$ 4,211.6	\$ 4,748.5	\$ 4,107.5	\$ 3,514.1	\$ 3,622.5	44,040.1
	<b>Danskin</b>													
10	Energy (MWh)	899.8	1,690.1	18,673.9	64,991.3	74,697.7	36,467.3	19,251.1	6,134.4	4,806.7	1,495.4	1,957.2	294.3	231,359.1
11	Expense (\$ x 1000)	\$ 22.5	\$ 43.8	\$ 485.7	\$ 1,910.8	\$ 2,197.6	\$ 1,028.7	\$ 543.8	\$ 178.5	\$ 170.8	\$ 59.3	\$ 80.5	\$ 11.2	6,733.0
	<b>Bennett Mountain</b>													
12	Energy (MWh)	250.1	481.1	8,578.2	44,478.7	48,934.2	23,659.8	11,547.3	2,729.8	2,914.1	674.4	1,046.6	96.9	145,391.3
13	Expense (\$ x 1000)	\$ 6.5	\$ 12.2	\$ 220.2	\$ 1,305.0	\$ 1,429.4	\$ 656.3	\$ 324.6	\$ 78.6	\$ 104.3	\$ 28.5	\$ 44.7	\$ 3.6	4,214.0
14	Fixed Capacity Charge - Gas Transportation (\$ x 1000)	\$ 725.0	\$ 748.7	\$ 746.0	\$ 770.4	\$ 770.4	\$ 746.0	\$ 748.7	\$ 725.0	\$ 748.7	\$ 747.3	\$ 676.1	\$ 747.3	8,899.3
	<b>Purchased Power (Excluding CSPP)</b>													
15	Market Energy (MWh)	6,303.0	14,004.9	66,206.8	103,660.5	123,060.0	43,268.4	14,742.5	58,927.8	37,059.3	75,429.7	5,089.7	7,450.5	555,202.9
16	Elkhorn Wind Energy (MWh)	25,222.8	24,240.8	23,934.6	26,559.8	24,064.4	19,958.8	20,960.4	30,426.8	29,073.2	26,367.6	23,457.6	29,036.4	303,302.9
17	Neal Hot Springs Energy (MWh)	14,081.9	11,353.2	10,318.6	8,357.0	9,713.8	11,676.6	13,859.1	17,054.5	17,838.6	18,323.1	16,285.0	16,438.1	165,299.4
18	Raft River Geothermal Energy (MWh)	6,088.1	5,065.7	5,127.2	5,756.7	5,203.9	5,842.0	7,652.8	6,785.9	7,035.5	7,084.5	6,387.4	6,429.4	74,459.1
19	Total Energy Excl. CSPP (MWh)	51,695.8	54,664.4	105,587.2	144,334.0	162,042.1	80,745.8	57,214.8	113,195.0	91,006.6	127,204.8	51,219.7	59,354.3	1,098,264.4
20	Market Expense (\$ x 1000)	\$ 128.5	\$ 253.2	\$ 1,153.6	\$ 2,567.4	\$ 3,620.5	\$ 1,204.3	\$ 380.8	\$ 1,681.5	\$ 1,185.6	\$ 2,368.9	\$ 148.8	\$ 195.4	14,888.3
21	Elkhorn Wind Expense (\$ x 1000)	\$ 1,123.7	\$ 1,079.9	\$ 1,450.7	\$ 1,931.7	\$ 1,750.2	\$ 1,209.7	\$ 1,270.4	\$ 2,212.9	\$ 2,114.5	\$ 1,646.1	\$ 1,464.5	\$ 1,332.5	18,586.8
22	Neal Hot Springs Expense (\$ x 1000)	\$ 1,154.3	\$ 930.6	\$ 1,153.9	\$ 1,121.5	\$ 1,303.6	\$ 1,305.8	\$ 1,549.9	\$ 2,288.7	\$ 2,393.9	\$ 2,097.8	\$ 1,864.5	\$ 1,379.5	18,544.0
23	Raft River Geothermal Expense (\$ x 1000)	\$ 289.2	\$ 240.6	\$ 331.4	\$ 446.5	\$ 403.6	\$ 377.6	\$ 494.6	\$ 526.3	\$ 545.7	\$ 467.5	\$ 421.5	\$ 311.8	4,856.3
24	Total Expense Excl. CSPP (\$ x 1000)	\$ 2,695.6	\$ 2,504.4	\$ 4,089.6	\$ 6,067.0	\$ 7,077.9	\$ 4,097.3	\$ 3,695.7	\$ 6,709.4	\$ 6,239.7	\$ 6,580.4	\$ 3,899.2	\$ 3,219.2	56,875.4
	<b>Surplus Sales</b>													
25	Energy (MWh)	361,911.0	253,454.2	144,485.0	42,389.0	21,694.1	86,704.8	173,890.9	37,294.4	106,567.5	91,316.5	314,596.8	345,656.6	1,979,960.8
26	Revenue Including Transmission Costs (\$ x 1000)	\$ 6,688.7	\$ 4,155.1	\$ 2,282.1	\$ 951.7	\$ 578.7	\$ 2,188.5	\$ 4,073.6	\$ 965.1	\$ 3,091.7	\$ 2,601.0	\$ 8,340.9	\$ 8,220.5	44,137.7
27	Transmission Costs (\$ x 1000)	\$ 361.9	\$ 253.5	\$ 144.5	\$ 42.4	\$ 21.7	\$ 86.7	\$ 173.9	\$ 37.3	\$ 106.6	\$ 91.3	\$ 314.6	\$ 345.7	1,980.0
28	Revenue Excluding Transmission Costs (\$ x 1000)	\$ 6,326.8	\$ 3,901.7	\$ 2,137.6	\$ 909.3	\$ 557.0	\$ 2,101.7	\$ 3,899.7	\$ 927.8	\$ 2,985.1	\$ 2,509.7	\$ 8,026.3	\$ 7,874.9	42,157.7
29	Net Power Supply Expenses (\$ x 1000)	\$ 2,826.8	\$ 4,186.8	\$ 10,981.2	\$ 23,592.4	\$ 26,945.9	\$ 15,742.8	\$ 12,476.8	\$ 18,981.6	\$ 19,022.1	\$ 17,047.9	\$ 6,496.4	\$ 5,691.0	<b>\$ 163,991.6</b>
30	PURPA (\$ x 1000)	\$17,305.11	\$19,723.33	\$22,640.51	\$24,975.50	\$23,099.71	\$18,827.46	\$16,555.52	\$16,654.28	\$16,054.07	\$13,198.74	\$15,013.90	\$14,027.98	\$ 218,076.1
31	Total Net Power Supply Expenses (\$ x 1000)	\$ 20,131.9	\$ 23,910.1	\$ 33,621.7	\$ 48,567.9	\$ 50,045.6	\$ 34,570.2	\$ 29,032.3	\$ 35,635.9	\$ 35,076.1	\$ 30,246.6	\$ 21,510.3	\$ 19,719.0	<b>\$ 382,067.7</b>
32	Sales at Customer Level (In 000s MWh)	1,028.649	1,073.076	1,239.869	1,483.492	1,550.545	1,407.258	1,112.181	1,036.226	1,151.526	1,268.249	1,212.377	1,097.992	14,661.439
33	Hours in Month	720	744	720	744	744	720	744	721	744	744	672	743	8760
34	Unit Cost / MWh (for PCAM)	\$19.57	\$22.28	\$27.12	\$32.74	\$32.28	\$24.57	\$26.10	\$34.39	\$30.46	\$23.85	\$17.74	\$17.96	<b>\$26.06</b>
	<b>Prices Used in Purchased Power &amp; Surplus Sales Above:</b>													
	<b>Heavy Load</b>													
35	Portion of Purchased Power considered HL Purchases	<b>64.25%</b>	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%
36	Purchased Power HL Price	21.58	20.63	20.69	28.90	32.53	29.50	26.76	29.97	33.83	32.15	29.64	26.60	
37	Portion of Surplus Sales considered HL Surplus Sales	<b>62.70%</b>	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%
38	Surplus Sales HL Price	20.02	19.14	19.20	26.82	30.18	27.37	24.83	27.80	31.39	29.83	27.50	24.68	
	<b>Light Load</b>													
39	Portion of Purchased Power considered LL Purchases	<b>35.75%</b>	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%
40	Purchased Power LL Price	18.22	13.50	11.55	17.33	23.83	24.84	24.16	25.96	28.69	30.07	28.49	25.54	
41	Portion of Surplus Sales considered LL Surplus Sales	<b>37.30%</b>	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%
42	Surplus Sales LL Price	15.89	11.77	10.07	15.11	20.78	21.66	21.07	22.64	25.02	26.22	24.85	22.27	

Idaho Power/106  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell  
Year-Over-Year Differences in Modeled Power Supply Expenses

October 28, 2016

YEAR OVER YEAR DIFFERENCES IN AURORA DEVELOPED NPSE

AURORA DEVELOPED NPSE RESULTS BEFORE MARKET ENERGY RE-PRICING			REPRICED USING FORWARD MARKET PRICES				DIFFERENCES			
GENERATION			GENERATION				GENERATION			
	A	B		D	E	F	G	H	I	J
Line No.	2016 October Update	2017 October Update	Resource Type	2016 October Update	2017 October Update		(B-A)	(E-C)	(C-A)	(E-B)
1	8,662,089	8,650,907	Hydro (MWh)	8,662,089	8,650,907	54%	(11,182)	(11,182)	-	-
2	3,166,512	2,531,291	Coal (MWh)	3,166,512	2,531,291	16%	(635,222)	(635,222)	-	-
3	2,431,877	2,536,761	Natural Gas (MWh)	2,431,877	2,536,761	16%	104,885	104,885	-	-
			Purchased Power & Purchased							
4	855,324	1,098,264	Power Agreements (MWh)	855,324	1,098,264	7%	242,941	242,941	-	-
5	3,158,176	3,079,464	PURPA (MWh)	3,158,176	3,079,464	19%	(78,713)	(78,713)	-	-
6	2,375,252	1,979,961	Surplus Sales (MWh)	2,375,252	1,979,961	12%	(395,291)	(395,291)	-	-
7	15,898,726	15,916,727	System Load (MWh)	15,898,726	15,916,727	100%	18,001	18,001	-	-
8	1,810	1,817	System Load (aMW)	1,810	1,817		2	2	-	-
NET POWER SUPPLY EXPENSES			NET POWER SUPPLY EXPENSES				NET POWER SUPPLY EXPENSES			
	A	B		D	E	F	G	H	I	J
Line No.	2016 October Update	2017 October Update	Resource Type	2016 October Update	2017 October Update		(B-A)	(E-C)	(C-A)	(E-B)
9	\$ -	\$ -	Hydro (\$ x 1000)	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
10	\$ 95,307.4	\$ 85,387.6	Coal (\$ x 1000)	\$ 95,307.4	\$ 85,387.6	22%	\$ (9,919.8)	\$ (9,919.8)	\$ -	\$ -
11	\$ 57,814.6	\$ 63,886.4	Natural Gas (\$ x 1000)	\$ 57,814.6	\$ 63,886.4	17%	\$ 6,071.8	\$ 6,071.8	\$ -	\$ -
			Purchased Power & Purchased							
12	\$ 49,243.9	\$ 57,975.9	Power Agreements (\$ x 1000)	\$ 49,243.9	\$ 57,975.9	15%	\$ 8,732.0	\$ 8,732.0	\$ 1,761.9	\$ (1,100.5)
13	\$ 208,893.4	\$ 218,076.1	PURPA (\$ x 1000)	\$ 208,893.4	\$ 218,076.1	57%	\$ 9,182.8	\$ 9,182.8	\$ -	\$ -
14	\$ (54,786.4)	\$ (49,088.6)	Surplus Sales (\$ x 1000)	\$ (54,786.4)	\$ (49,088.6)	-11%	\$ 5,697.8	\$ 5,697.8	\$ (6,206.7)	\$ 6,930.9
15	\$ 356,472.8	\$ 376,237.3	Total System (\$ x 1000)	\$ 356,472.8	\$ 376,237.3	0%	\$ 19,764.5	\$ 19,764.5	\$ (4,444.7)	\$ 5,830.4
			Total System (\$ x 1000)	\$ 352,028.1	\$ 382,067.7	100%	\$ 19,764.5	\$ 30,039.6	\$ (4,444.7)	\$ 5,830.4

Idaho Power/107  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell  
Idaho Power Company's Rate Spread for October APCU Update

October 28, 2016

Idaho Power Company  
Rate Spread Exhibit for October Update APCU -- Variable Coal Handling Modeled Using UE 301 Settlement Methodology

General Rate Case (UE 233): Marginal Cost-of-Service Study and Stipulated Revenue Spread														
2011 Test Period														
Line No.	Description	(A) TOTAL SYSTEM	(B) RESIDENTIAL (1)	(C) GEN SRV (2)	(D) GEN SRV SECONDARY (9-S)	(E) GEN SRV PRIMARY (9-P)	(F) GEN SRV TRANS (9-T)	(G) AREA LIGHTING (15)	(H) LG POWER PRIMARY (19-P)	(I) LG POWER TRANS (19-T)	(J) IRRIGATION SECONDARY (24-S)	(K) UNMETERED GEN SERVICE (40)	(L) MUNICIPAL ST LIGHT (41)	(M) TRAFFIC CONTROL (42)
1	Normalized Sales (kWh)	650,158,581	198,842,419	17,842,896	114,256,218	15,099,088	2,832,509	483,936	179,189,047	74,155,867	46,649,265	12,900	778,108	16,328
2	Current Revenue	\$39,873,591	\$15,355,932	\$1,559,400	\$6,975,915	\$798,102	\$154,997	\$112,462	\$8,213,065	\$3,123,393	\$3,454,271	\$972	\$123,851	\$1,231
3														
4	<b>Demand Related Marginal Cost</b>													
5	Generation - Staff Adj.	\$11,049,450	\$4,082,443	\$268,043	\$1,671,178	\$207,813	\$35,425	\$625	\$1,790,415	\$1,483,718	\$1,508,400	\$158	\$1,035	\$200
6	Transmission - Staff Adj.	\$12,432,118	\$4,593,297	\$301,584	\$1,880,300	\$233,817	\$39,858	\$703	\$2,014,458	\$1,669,382	\$1,697,153	\$177	\$1,165	\$225
7	Distribution	\$6,945,625	\$3,215,110	\$181,233	\$1,319,947	\$100,783	\$0	\$5,738	\$798,946	\$0	\$1,314,267	\$161	\$9,350	\$89
8														
9	<b>Energy Related Marginal Cost</b>													
10	Generation	\$28,547,004	\$8,940,577	\$802,452	\$5,140,232	\$649,911	\$117,743	\$21,383	\$7,662,010	\$3,097,424	\$2,079,568	\$570	\$34,414	\$722
11	Transmission - Staff Adj.	\$4,144,040	\$1,297,863	\$116,488	\$746,184	\$94,345	\$17,092	\$3,104	\$1,112,259	\$449,639	\$301,881	\$83	\$4,996	\$105
12														
13	<b>Simple-Summed Energy-Related and Demand-Related Marginal Costs</b>													
14	Generation Marginal Costs - Staff Adj.	\$39,596,454	\$13,023,020	\$1,070,495	\$6,811,410	\$857,724	\$153,168	\$22,008	\$9,452,425	\$4,581,142	\$3,587,968	\$728	\$35,449	\$922
15	Transmission Marginal Costs - Staff Adj.	\$16,576,157	\$5,891,160	\$418,072	\$2,626,484	\$328,162	\$56,950	\$3,807	\$3,126,717	\$2,119,021	\$1,999,034	\$260	\$6,160	\$330
16														
17	<b>Customer Related Marginal Cost</b>	\$2,805,903	\$1,967,110	\$385,570	\$177,410	\$6,719	\$1,390	\$0	\$15,208	\$2,535	\$246,967	\$228	\$1,892	\$873
18														
19	<b>Total Functionalized Revenue Requirement</b>													
20	Generation - Staff Adj.	\$25,202,690	\$8,289,003	\$681,357	\$4,335,384	\$545,931	\$97,490	\$14,008	\$6,016,360	\$2,915,844	\$2,283,701	\$463	\$22,563	\$587
21														
22	Transmission	\$4,272,366	\$1,518,397	\$107,755	\$676,954	\$84,581	\$14,678	\$981	\$805,885	\$546,160	\$515,234	\$67	\$1,588	\$85
23														
24	Distribution													
25	Demand-Related	\$8,930,530	\$4,133,917	\$233,025	\$1,697,158	\$129,585	\$0	\$7,378	\$1,027,267	\$0	\$1,689,855	\$207	\$12,022	\$114
26	Customer-Related													
27	Allocated	\$2,859,472	\$2,004,665	\$392,931	\$180,797	\$6,847	\$1,417	\$0	\$15,498	\$2,583	\$251,682	\$232	\$1,928	\$890
28	Direct Assignment	\$419,424	\$188,447	\$34,356	\$12,375	\$69	\$14	\$78,778	\$83	\$14	\$21,953	\$42	\$83,209	\$83
29														
30	<b>Total: Staff-Adjusted Allocation</b>	\$41,684,482	\$16,134,429	\$1,449,425	\$6,902,669	\$767,013	\$113,599	\$101,145	\$7,865,094	\$3,464,601	\$4,762,425	\$1,011	\$121,310	\$1,759
31	<b>Revenue Deficiency - Staff Adj. Allocation</b>	\$1,810,890	\$778,497	(\$109,975)	(\$73,246)	(\$31,089)	(\$41,398)	(\$11,317)	(\$347,971)	\$341,208	\$1,308,154	\$39	(\$2,541)	\$528
32	<b>% Increase Required by Staff Adj. Alloc. Approach</b>	4.54%	5.07%	-7.05%	-1.05%	-3.90%	-26.71%	-10.06%	-4.24%	10.92%	37.87%	4.02%	-2.05%	42.91%
33	<b>\$ Increase Recommended per Stipulation</b>	\$1,810,890	\$862,348	\$44,153	\$197,517	\$22,598	\$0	\$0	\$232,545	\$212,777	\$235,318	\$44	\$3,507	\$84
34	<b>% Increase Recommended per Stipulation</b>	4.54%	5.62%	2.83%	2.83%	2.83%	0.00%	0.00%	2.83%	6.81%	6.81%	4.56%	2.83%	6.81%
35	<b>Average Rate Given Stipulation (\$/kWh)</b>	0.0641	0.0816	0.0899	0.0628	0.0544	0.0547	0.2324	0.0471	0.0450	0.0791	0.0788	0.1637	0.0805
36	<b>Final Revenue Allocation</b>	\$41,684,481	\$16,218,280	\$1,603,553	\$7,173,432	\$820,700	\$154,997	\$112,462	\$8,445,610	\$3,336,170	\$3,689,589	\$1,016	\$127,358	\$1,315
37														
38	<b>Spread Floors and Ceilings:</b>													
39	No increase for those warranting a decrease greater than 8%													
40	2.83% increase for those warranting a decrease less than 8%													
41	No increase greater than one-and-one-half times the average increase													
<b>2017 October Update APCU: Baseline Revenue Requirement Spread and Rates Development Employing the UE 233 Test Period Figures</b>														
42	2017 October Update APCU Cost of Service (Allocator -- Line 14)	\$1,462,318	\$480,947	\$39,534	\$251,549	\$31,676	\$5,657	\$813	\$349,083	\$169,184	\$132,506	\$27	\$1,309	\$34
43	<b>% Increase Required Due to APCU (Proposed) (Line 42/Line 36)</b>	3.51%	2.97%	2.47%	3.51%	3.86%	3.65%	0.72%	4.13%	5.07%	3.59%	2.64%	1.03%	2.59%
44	Loss-Adjusted 2011 Normalized Sales (kWh)	650,158,581	198,842,419	17,842,896	114,256,218	15,099,088	2,832,509	483,936	179,189,047	74,155,867	46,649,265	12,900	778,108	16,328
45	2017 October Update APCU Incremental Rate given 2011 Test Period Sales (Mills per kWh) (1000*(Line 42/Line 44))	2.249	2.419	2.216	2.202	2.098	1.997	1.679	1.948	2.281	2.840	2.083	1.682	2.085
46	<b>APCU Incremental Rate for 2017 October Update (Mills per kWh) (Line 45*(Column A:(Line 44/Line 47))</b>	<b>2.130</b>	<b>2.514</b>	<b>2.150</b>	<b>2.122</b>	<b>1.679</b>	<b>2.239</b>	<b>1.835</b>	<b>2.147</b>	<b>1.592</b>	<b>1.990</b>	<b>4.825</b>	<b>1.419</b>	<b>1.620</b>
47	Loss-Adjusted 2017-2018 Normalized Sales (kWh)	686,534,333	191,341,343	18,383,815	118,516,535	18,863,341	2,526,070	443,024	162,621,851	106,300,146	66,589,147	5,568	922,474	21,019
48	Projected October Update APCU 2017-2018 Revenues (Line 46 * Line 47)	\$1,462,318	\$480,947	\$39,534	\$251,549	\$31,676	\$5,657	\$813	\$349,083	\$169,184	\$132,506	\$27	\$1,309	\$34

Notes:  
 1 2017 October Update APCU Revenues = \$2.13/MWh x 686,534,333 MWhs = \$ 1,462,318 (Line 48, Column A)  
 2 \$2.13 = \$26.06 (2017 October Update) - \$23.93 (2016 October Update - Settled)

Idaho Power/108  
Witness: Nicole A. Blackwell

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

IDAHO POWER COMPANY

Exhibit Accompanying Testimony of Nicole A. Blackwell

Idaho Power Company's Current Billed Revenue to  
Proposed Billed Revenue

October 28, 2016

**Idaho Power Company**  
**Calculation of Revenue Impact**  
**State of Oregon**  
**2017 APCU October Update Filing**  
**Effective June 1, 2017**

**Summary of Revenue Impact**  
**Current Billed Revenue to Proposed Billed Revenue <sup>(1)</sup>**

Line No	Tariff Description	Rate Sch. No.	Average Number of Customers <sup>(2)</sup>	Normalized Energy (kWh) <sup>(2)</sup>	Current Billed Revenue	Mills Per kWh	Total Adjustments to Billed Revenue	Proposed Total Billed Revenue	Mills Per kWh	Percent Change Billed to Billed Revenue
<u>Uniform Tariff Rates:</u>										
1	Residential Service	1	13,772	191,341,343	\$19,125,298	99.95	\$480,947	\$19,606,245	102.47	2.51%
2	Small General Service	7	2,556	18,383,815	\$1,959,675	106.60	\$39,534	\$1,999,209	108.75	2.02%
3	Large General Service	9	921	139,905,946	\$10,855,438	77.59	\$288,882	\$11,144,320	79.66	2.66%
4	Dusk to Dawn Lighting	15	0	443,024	\$110,587	249.62	\$813	\$111,399	251.45	0.73%
5	Large Power Service	19	7	268,921,997	\$16,593,666	61.70	\$518,267	\$17,111,933	63.63	3.12%
6	Agricultural Irrigation Service	24	1,910	66,589,147	\$6,516,794	97.87	\$132,506	\$6,649,299	99.86	2.03%
7	Unmetered General Service	40	2	5,568	\$547	98.22	\$27	\$574	103.05	4.91%
8	Street Lighting	41	25	922,474	\$145,571	157.80	\$1,312	\$146,883	159.23	0.90%
9	Traffic Control Lighting	42	8	21,019	\$2,004	95.32	\$34	\$2,038	96.94	1.70%
10	Total Uniform Tariffs		19,201	686,534,333	\$55,309,579	80.56	\$1,462,321	\$56,771,900	82.69	2.64%
11	Total Oregon Retail Sales		19,201	686,534,333	\$55,309,579	80.56	\$1,462,321	\$56,771,900	82.69	2.64%

(1) Current Billed to Proposed Bill Revenues Reflect the October Update and the current March Forecast (unchanged)

(2) Updated April 2017-March 2018 Test Year