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October 31, 2018

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 2019 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 and Exhibits of Nicole A. Blackwell (Idaho Power/100-109). Please direct all communications in this matter to:

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An electronic copy of this filing has been served on all parties to the 2018 APCU (UE 333).

Very truly yours,

A handwritten signature in cursive script that reads "Wendy McIndoo".

Wendy McIndoo

Enclosures
cc: UE 333 Service List

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

UE ____

IN THE MATTER OF IDAHO POWER)
COMPANY'S 2019 ANNUAL POWER)
COST UPDATE)
OCTOBER UPDATE)
_____)

IDAHO POWER COMPANY
DIRECT TESTIMONY
OF
NICOLE A. BLACKWELL

October 31, 2018

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 in the Regulatory Affairs Department.
4 My business address is 1221 West Idaho Street, Boise, Idaho 83702.

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

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

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 duties
18 also include providing analytical support for other regulatory activities within the
19 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 2019
22 October Update, the first portion of the Company's Annual Power Cost Update
23 ("APCU"). If approved, the 2019 October Update will result in a revenue decrease of
24 \$9,979, or 0.02 percent, to become effective June 1, 2019.

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 resulting modeling outputs. I then present and discuss the total NPSE for the
4 2019 October Update, including the impacts of the Company's participation in the
5 western Energy Imbalance Market ("Western EIM"), and how it compares to last year's
6 2018 October Update. My testimony concludes with the quantification of the projected
7 revenue requirement and the proposed rate implementation to recover the revenue
8 requirement.

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

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

- 11 1. Exhibit 101, AURORA modeled determination of normalized power supply
12 expenses for April 1, 2019 – March 31, 2020
- 13 2. Exhibits 102 – 104, Mid-Columbia Forward Price Curves Discounted for Inflation,
14 Producer Price Index for Electric Power, and Forward Prices Used for Re-Pricing
15 Purchased Power and Surplus Sales
- 16 3. Exhibit 105, Total Normalized Base Power Supply Expenses for the 2019 October
17 Update
- 18 4. Exhibit 106, Energy Imbalance Market Costs
- 19 5. Exhibit 107, Year-Over-Year Differences in Modeled NPSE
- 20 6. Exhibit 108, Revenue Spread
- 21 7. Exhibit 109, Revenue Impact

22 **APCU Overview**

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

24 A. The APCU is a rate mechanism that is comprised of two components, an October
25 Update and a March Forecast. The October Update establishes the prospective
26 "base" or "normal" power supply expenses for an April through March test period. The

1 March Forecast is a forecast of expected power supply expenses over the same test
2 period as the October Update. “Base” or “normal” power supply expenses are
3 calculated by modeling the test period under multiple historical water conditions; in this
4 case, the Company modeled 90 historical water conditions (1928-2017). Expected
5 power supply expenses are calculated by modeling the same test period as the
6 October Update, except the power supply expenses are calculated by modeling a
7 single forecast water condition from the Northwest River Forecast Center. The results
8 of the October Update are reflected as an update to base rates and the results of the
9 March Forecast are reflected in the March Forecast Rate Adjustment listed in
10 Schedule 55, with both of the rate adjustments going into effect on June 1st of each
11 year.

12 **Q. What is the definition of the term “net power supply expense” as the Company**
13 **and the Public Utility Commission of Oregon (“Commission”) have used the**
14 **term historically?**

15 A. The Company and the Commission have used the term “net power supply expense”
16 to refer to the sum of the following Federal Energy Regulatory Commission (“FERC”)
17 accounts: fuel expense (FERC Accounts 501 and 547), and purchased power
18 expenses (FERC Account 555), minus surplus sales revenues (FERC Account 447).

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

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

1 Commission in Order No. 08-238, Docket No. UE 195, establishing the APCU and
2 implementation of the PCAM, or the annual power supply expense true-up.

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

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

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

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

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

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

21 **AURORA Model Inputs and Modeling Results**

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

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

25 a. Fuel prices and transportation costs

26 b. Wheeling expenses

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

8 The Company reviewed all the inputs and updated those that have changed since last
9 year's October Update, as described in more detail in the following section.

10 Coal Fuel Expense

11 **Q. Have any changes in coal fuel expense and coal-fired generation occurred since**
12 **last year's October Update filing?**

13 A. Yes. Total coal fuel expense included in the 2019 October Update is \$65.2 million,
14 compared to \$77.6 million in the 2018 October Update, a decrease of 16 percent.
15 Coal-fired generation also decreased from last year's October Update, from 2.1 million
16 megawatt-hours ("MWh") to 1.8 million MWh, or approximately 15 percent.

17 **Q. How did the changes in coal fuel expense and coal-fired generation impact the**
18 **cost of coal production on a per-unit basis?**

19 A. The average cost of coal production, on a per-unit basis, for the 2019 October Update
20 is \$36.74 per MWh, compared to \$37.29 per MWh for the 2018 October Update. At
21 the plant level, the per-unit cost of production decreased 8 percent at the Boardman
22 plant ("Boardman"), decreased 2 percent at the North Valmy plant ("Valmy"), and
23 increased 1 percent at the Jim Bridger plant ("Bridger").

24 **Q. What factors are driving the changes in the per-unit cost of production at the**
25 **Company's coal plants?**

26

1 A. The per-unit variable cost of production at Boardman decreased from \$29.84 per MWh
2 for the 2018 October Update to \$27.39 per MWh for the 2019 October Update. The
3 decrease in the per-unit cost of production is primarily related to a reduction in coal
4 costs, on a dollar per MMBtu basis. The dollar per MMBtu coal cost for Boardman
5 decreased 11 percent since last year's October Update due to lower coal transport
6 costs and coal costs. As a result of the decrease in coal costs, the AURORA-modeled
7 dispatch of Boardman increased approximately 6 percent between the 2018 October
8 Update and the 2019 October Update. Together the increase in production volumes
9 and decrease in coal costs result in a lower per-unit cost of production.

10 Compared to last year's October Update, the per-unit variable cost of
11 production at Valmy decreased from \$40.19 per MWh to \$39.53 per MWh. While the
12 dollar per MMBtu coal cost for Valmy decreased approximately 1 percent since last
13 year's October Update, the reduction in the per-unit cost of production is largely due
14 to a decrease in Idaho Power's proportional share of Oil, Handling, Administrative &
15 General ("OHAG") expenses at the plant. The Company's proportional share of OHAG
16 expenses at Valmy decreased 11 percent, from \$4.4 million included in the 2018
17 October Update to \$3.9 million for the 2019 October Update.

18 The per-unit variable cost of production at Bridger increased from \$37.54 per
19 MWh to \$37.92 per MWh. Compared to the 2018 October Update, the dollar per
20 MMBtu coal cost for Bridger decreased approximately 1 percent, and the Company's
21 proportional share of OHAG expenses decreased 10 percent; however, the decrease
22 in generation at Bridger was more significant than the decrease in expense resulting
23 in an increase in the per-unit cost of production. The decrease in generation at Bridger
24 is attributable to an increase in the per-MWh OHAG expense included in the AURORA
25 model, as well as the continued decrease in natural gas prices, which is shifting the
26

1 dispatch of coal units to gas units. As a result of operating costs being spread over
2 lower production volumes, the per-unit cost of production at Bridger increased.

3 **Q. Did Idaho Power model OHAG expenses as agreed upon in the settlement**
4 **stipulations approved in the 2016 and 2017 APCU dockets?**

5 A. Yes. Per the settlement stipulation approved by Order No. 16-206 in the Company's
6 2016 APCU, Docket No. UE 301, the per-MWh OHAG expense included in the
7 AURORA model has been updated to reflect the amount of OHAG expense driven by
8 Idaho Power's dispatch of each plant. The Company has separately accounted for its
9 proportional share of the total OHAG expense incurred at each of the plants. Per the
10 settlement stipulation approved by Order No. 17-165 in the Company's 2017 APCU,
11 Docket No. UE 314, ("2017 Stipulation"), Idaho Power's proportional share of total
12 OHAG expense incurred at each of the coal-fired plants is forecast using a three-year
13 historical average of actual OHAG costs, with a growth (reduction) rate equal to the
14 five-year historical average growth (reduction) rate.

15 **Q. Have you prepared an exhibit that illustrates the calculation of OHAG expenses**
16 **for the 2019 APCU?**

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

24 For example, on Exhibit 101, Line 4 illustrates the AURORA-modeled OHAG
25 expense resulting from Idaho Power's dispatch of Bridger. Line 5 is the difference
26 between the total AURORA-modeled expenses, Line 3, and the AURORA-modeled

1 OHAG expense, Line 4, at Bridger ($\$38,555.9 - \$301.1 = \$38,254.8$). Line 6
2 represents the Company's proportional share of total OHAG expenses at Bridger using
3 the stipulated methodology discussed above. Line 7 is the sum of the AURORA-
4 modeled expenses (less the AURORA-modeled OHAG at Bridger), Line 5, and the
5 Company's proportional share of total OHAG, Line 6, ($\$38,254.8 + \$2,518.9 =$
6 $\$40,773.8$). This line reflects the NPSE for Bridger for the 2019 October Update. This
7 method is replicated for Boardman, as shown on Lines 9-13, and for Valmy, as shown
8 on Lines 15-20.

9 **Q. Does Idaho Power's 2019 APCU account for revenues received from or**
10 **expenses paid to NV Energy (its ownership partner in Valmy) for usage of the**
11 **Company's unused capacity or the Company's usage of NV Energy's unused**
12 **capacity?**

13 A. Yes. Per the 2017 Stipulation, Idaho Power agreed to include the three-year historical
14 average of actual net balances associated with ownership partner use of unused
15 capacity at Valmy as an offset or addition to total NPSE. For the 2019 October Update,
16 the 2015-2017 historical average net revenue paid to Idaho Power associated with NV
17 Energy's dispatch of Idaho Power's unused capacity at Valmy is \$48,368 on a system
18 basis. As shown on Line 19 of Exhibit 101, this amount has been reflected as an offset
19 to NPSE for Valmy for the 2019 October Update. The Company will update the three-
20 year historical average as part of the 2019 March Forecast.

21 Natural Gas Fuel Expense

22 **Q. How does the natural gas price forecast for the 2019 October Update compare**
23 **to last year's October Update?**

24 A. The Company updated its natural gas price forecast for the 2019 October Update. The
25 Henry Hub price used for the 2018 October Update was \$3.18 per MMBtu, while the
26

1 Henry Hub price used in the 2019 October Update is \$3.13 per MMBtu, a decrease of
2 \$0.05 per MMBtu or 2 percent.

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

5 A. Yes. For the APCU, the natural gas price forecast methodology utilizes multiple
6 natural gas forecast data points and calculates an average price to determine a
7 normalized gas price. For the 2017 and 2018 APCU filings, Docket Nos. UE 314 and
8 UE 333, respectively, this approved methodology included forecast data from the New
9 York Mercantile Exchange ("NYMEX"), the Energy Information Administration ("EIA"),
10 and Moody's Analytics ("Moody's"). Utilizing these data points, an average price was
11 calculated to determine the normalized gas prices.

12 For the 2019 APCU, the Company is utilizing the same approved natural gas
13 price forecast methodology, but has included an additional forecast data point, S&P
14 Global Platts ("Platts"), which was recently made available through Idaho Power's
15 2019 IRP process. In response to feedback from the IRP Advisory Council – an IRP
16 stakeholder group that consists of several external parties, including Commission Staff
17 ("Staff") – the Company contracted with Platts to provide a more robust and
18 transparent natural gas forecast; therefore, the Company is including the Platts data
19 point in its gas price forecast methodology for the 2019 APCU in order to incorporate
20 all available data, resulting in a more robust forecast. To summarize, the 2019 APCU,
21 utilizing the same gas price forecast methodology approved in the 2017 and 2018
22 APCU filings, the Company calculated an average price based on Platts, NYMEX, EIA,
23 and Moody's forecast data to determine a normalized gas price.

24 PURPA Expense

25 **Q. Please explain any changes in PURPA generation since last year's October**
26 **Update.**

1 A. Last year's October Update included 332 average megawatts ("aMW") of PURPA
2 generation, whereas PURPA generation included in the 2019 October Update is 343
3 aMW, an increase of 11 aMW, or 3 percent, since last year's October Update. The
4 increase in PURPA generation is primarily due to the addition of six new PURPA
5 projects which account for an increase in expected generation of 8 aMW since last
6 year's October Update. The new projects include five solar projects and one hydro
7 project with a total combined nameplate capacity of 28.85 megawatts.

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

9 A. Annual PURPA expense increased from \$217.2 million to \$221.1 million, an increase
10 of \$3.9 million, or 2 percent. Approximately 50 percent of the increase in year-over-
11 year PURPA expense is due to the addition of the six new PURPA projects described
12 above. The remaining increase in forecast PURPA expense is due to increased
13 forecast generation for several projects, as well as updated PURPA contract values.

14 Normalized Load

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

17 A. The Company's normalized system load used in last year's October Update was 1,854
18 aMW. The Company's normalized system load used in this year's October Update is
19 1,833 aMW, representing a decrease in load of 21 aMW, or 1 percent, between the
20 two test periods.

21 Other

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

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

1 Modeling Results

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

4 A. Yes. Exhibit 101 shows the results of the AURORA modeling determination of
5 normalized NPSE for the April 2019 through March 2020 test year. Exhibit 101
6 presents the summary of results containing average variable power supply generation
7 output and expenses based on 90 historical water conditions.

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

9 A. As can be seen on Exhibit 101, hydro generation supplies 8.6 million MWh,
10 approximately 48 percent (8.6 million MWh / 17.7 million MWh = 48 percent) of the
11 generation mix. Thermal generation supplies 5.2 million MWh (Bridger 1.1, Boardman
12 0.3, Valmy 0.4, Langley Gulch 2.3, Danskin 0.7, Bennett Mountain 0.4), approximately
13 29 percent (5.2 million MWh / 17.7 million MWh = 29 percent) of the generation mix.
14 Purchases of power are made up of short-term and longer-term market purchases,
15 purchased power agreements ("PPA"), and PURPA. PURPA purchases reflect
16 normalized and annualized generation levels and account for 3.0 million MWh. The
17 generation amounts and costs associated with PURPA purchases are not shown on
18 Exhibit 101; however, when combined with market purchases of 0.4 million MWh and
19 PPAs of 0.6 million MWh, total purchases amount to 4.0 million MWh (3.0 million MWh
20 + 0.4 million MWh + 0.6 million MWh = 4.0 million MWh) or approximately 22 percent
21 of the generation mix. Of the 17.7 million MWh generated by the system, 16.1 million
22 MWh are utilized for system loads while 1.6 million MWh are sold as surplus sales.

23 **2019 Base Net Power Supply Expenses**

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

1 A. Per the settlement stipulation approved in Order No. 08-238, the output of the
2 AURORA model will be used to determine net power supply average dispatch cost for
3 normal loads and average stream flow conditions, and the wholesale electric prices
4 for purchased power and surplus sales determined by the AURORA model will be
5 replaced with an average forward electric price curve (Docket No. UE 195, Stipulation,
6 p. 3).

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

8 A. The Company is required to re-price the AURORA-generated volumes of purchased
9 power and surplus sales with a forward-based price curve using the Mid-Columbia
10 ("Mid-C") hub. This methodology prescribes the use of a one-year average of the daily
11 Mid-C forward price curves calculated from the previous 12 months of daily Mid-C
12 heavy load and Mid-C light load forward price curves for the period starting in the April
13 immediately following the current April through March test period. Forward prices are
14 then adjusted for inflation back one year using the most recent Producer Price Index
15 for Electric Power.

16 The re-pricing of market prices in the 2019 October Update is based upon the
17 daily forward price curves for April 2020 through March 2021 as shown in Exhibit 102,
18 which were then discounted for inflation back to April 2019 through March 2020
19 according to the quarterly inflation indices provided in Exhibit 103.

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

22 A. Exhibit 104 shows the monthly prices that are used for the re-pricing of purchased
23 power and surplus sales volumes for the 2019 October Update. The prices range from
24 a low of \$9.02 per MWh to a high of \$35.95 per MWh.

25
26

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

4 A. Lines 33 and 41 of Exhibit 101 show the purchased power expenses and surplus sales
5 revenues, respectively, as determined by the AURORA modeling process. Lines 20
6 and 28 of Exhibit 105 show the same normalized generation dispatch with purchased
7 power and surplus sales re-priced using the normalized forward price curve shown in
8 Exhibit 104. A comparison of Exhibit 101 and Exhibit 105 demonstrates the changes
9 due to re-pricing. Purchased power expenses decreased by \$2.4 million, moving from
10 \$13.4 million to \$11.0 million. Surplus sales revenues decreased by \$5.7 million,
11 moving from \$36.1 million to \$30.4 million. In this case, the NPSE resulting from the
12 re-pricing methodology shown on Exhibit 105 is an increase in NPSE of \$3.3 million
13 as compared to the AURORA-generated expectation shown on Exhibit 101. The
14 differences for the re-pricing of purchased power of \$2.4 million and surplus sales of
15 \$5.7 million are shown on Exhibit 107, Column J.

16 *EIM Benefits and Costs*

17 **Q. When did Idaho Power begin participating in the Western EIM?**

18 A. Idaho Power began participating in the Western EIM on April 4, 2018. The Western
19 EIM is a voluntary EIM service that was implemented by the California Independent
20 System Operator ("CAISO") and PacifiCorp on November 1, 2014. Since then, NV
21 Energy, Puget Sound Energy, Arizona Public Service Company, Portland General
22 Electric Company, and Powerex have entered the market.

23 **Q. Please describe an EIM.**

24 A. An EIM is a real-time market to dispatch economic bids voluntarily offered by
25 participating resources to efficiently balance supply, transfers between balancing
26 authority areas ("BAA"), and load. An EIM solves sub-hourly imbalances through an

1 automated five-minute energy dispatch service across a broader footprint with more
2 deployable resources available, providing a more efficient method for maintaining
3 balance.

4 In an EIM, all BAAs begin the hour with matched generation and forecasted
5 load. As imbalances occur within the hour, resources within the EIM can voluntarily
6 provide bids to dispatch their facilities to manage these imbalances. The market
7 operator of the EIM will automatically look across the expanded EIM region to
8 determine the least-cost dispatch order and issue an operating target for each
9 participating resource, resulting in the most economical bids available to meet these
10 imbalances. The real-time optimization process determines the least-cost mix of
11 resources and dispatches them to resolve these imbalances while also respecting
12 limits on the transmission system to alleviate overloads or congestion.

13 **Q. How does participation in the Western EIM benefit Idaho Power's customers?**

14 A. Participation in the Western EIM real-time market allows for efficiencies that translate
15 into NPSE savings for the Company's customers. Moving from an hourly market
16 structure to a sub-hourly, five-minute imbalance market creates increased
17 opportunities for surplus sales, as well as net cost savings from increased access to
18 others' lower-cost generation, translating into reduced NPSE.

19 **Q. Has the Company adjusted the NPSE amounts included in the 2019 October
20 Update to reflect Idaho Power's participation in the Western EIM?**

21 A. Yes. The NPSE requested for approval in the 2019 October Update include both the
22 incremental benefits and costs associated with Idaho Power's participation in the
23 Western EIM. Because the cost-savings benefits associated with EIM participation
24 will be reflected as decreased NPSE, the Company believes it is appropriate to include
25 an estimate of both the incremental benefits and the incremental costs required for
26 participation as part of this APCU.

1 **Q. What level of EIM benefits is Idaho Power proposing to include in the 2019**
2 **October Update?**

3 A. Idaho Power is proposing to include \$4.5 million in system EIM benefits as an offset
4 to NPSE in the 2019 October Update. On an Oregon allocated basis, the EIM benefits
5 to be included in the 2019 October Update total \$206,511.

6 **Q. How did the Company determine the level of EIM benefits to be included in the**
7 **2019 October Update?**

8 A. The level of EIM benefits to be included in the 2019 October Update is based on a
9 2016 EIM benefits study completed by Energy + Environmental Economics (“E3”).
10 The E3 study reported a base case scenario of \$4.5 million in estimated system EIM
11 benefits that may be achieved by Idaho Power.

12 **Q. Why is Idaho Power basing expected EIM benefits on a study that was**
13 **completed prior to EIM participation rather than on actual benefits that have**
14 **been achieved through participation?**

15 A. As mentioned previously, Idaho Power began participating in the Western EIM in April
16 2018. Consequently, at the time of filing, Idaho Power has only been actively
17 participating in the Western EIM for six months, resulting in limited actual data on
18 which to base an annual forecast of EIM benefits. Additionally, Idaho Power is actively
19 developing a methodology to quantify actual benefits achieved through EIM
20 participation, which will serve as the basis for forecasting EIM benefits in the future.
21 As the methodology for quantifying actual benefits is not yet finalized, the Company is
22 relying on the E3 study to estimate EIM benefits in the interim.

23 **Q. Please describe the Company’s progress towards developing a method to**
24 **quantifying EIM benefits.**

25 A. The Company is currently working with Power Settlements to validate CAISO’s EIM
26 benefits quantification and develop a methodology to quantify benefits resulting from

1 the Company's participation in the Western EIM. Power Settlements is a software
2 company that specializes in providing software solutions to energy companies that
3 participate in Independent System Operator ("ISO") and Regional Transmission
4 Organization ("RTO") physical power markets. Power Settlements offers a suite of
5 software services related to ISO and RTO participation, and will be able to provide a
6 more accurate methodology for quantifying Idaho Power's EIM benefits by shadowing
7 the current Western EIM benefits calculation or using other inputs as determined by
8 Idaho Power.

9 **Q. Please explain why the Company is not utilizing the CAISO Western EIM Benefits**
10 **Report to estimate EIM benefits.**

11 A. CAISO produces a quarterly report, the Western EIM Benefits Report, that presents
12 its quantification of each entity's benefits associated with participation in the Western
13 EIM. Idaho Power believes that the EIM has provided financial benefits to the
14 Company, and ultimately its customers; however, after further detailed review of
15 CAISO's benefits methodology, Idaho Power believes the methodology overstates
16 actual benefits, particularly as it relates to hydroelectric generation sources.

17 **Q. How does CAISO quantify EIM benefits?**

18 A. CAISO Quarterly EIM Benefits Report utilizes a counterfactual methodology in which
19 dispatch for an EIM BAA mimics market operations without importing or exporting
20 through EIM transfers. The counterfactual dispatch moves units inside the BAA to
21 meet real-time imbalance based on economic merit order. CAISO's quantification of
22 total estimated EIM benefits is the cost savings of the EIM dispatch compared to the
23 counterfactual without EIM dispatch. In order to determine counterfactual costs,
24 CAISO relies upon bid prices submitted by EIM entities.

25 **Q. Does the Company have concerns regarding CAISO's EIM benefits methodology**
26 **as it relates specifically to Idaho Power?**

1 A. Yes. One of the major assumptions CAISO makes in its benefits methodology, due to
2 lack of other data, is that the bids submitted for each participating resource reflect the
3 true dispatch costs of those resources. For most resource types, this assumption may
4 be reasonable; however, this assumption is not necessarily accurate for hydro
5 resources. Because hydro is essentially a zero-variable cost resource, Idaho Power
6 bids hydro resources based on an opportunity cost rather than actual dispatch cost.
7 Additionally, Idaho Power utilizes various pricing tiers for its hydro resources to protect
8 the water from overuse in the market and to adhere to regulated water management
9 policies. The pricing tiers that Idaho Power uses are based upon certain operational
10 parameters and can result in high bid prices when it is necessary to cease or limit
11 water flows for a particular hydro resource's market participation.

12 Idaho Power understands that CAISO must make some key assumptions in
13 order to utilize a benefits methodology that works for all EIM participants; however,
14 because Idaho Power's system is predominantly hydro-based, the assumption that the
15 bid price reflects the actual dispatch cost results in overstatement of benefits for Idaho
16 Power.

17 **Q. Please explain in further detail how this assumption results in overstatement of**
18 **benefits.**

19 A. In CAISO's counterfactual dispatch calculation, it assumes that Idaho Power would
20 dispatch resources with lower bid prices before dispatching hydro resources in a
21 higher priced tier when meeting its own imbalance. In actuality, this may not be the
22 case. As an example, Idaho Power may dispatch a hydro resource in a higher priced
23 tier to meet its own imbalance rather than a thermal resource with a lower bid price.
24 Although the bid price for hydro may be higher, the actual dispatch cost is lower.

25 In CAISO's counterfactual calculation, dispatching the thermal resource with
26 the lower bid price overstates the actual costs to correct the imbalance. As mentioned

1 previously, CAISO's quantification of total estimated EIM benefits is the difference
2 between the counterfactual dispatch costs and the EIM dispatch costs. Because the
3 counterfactual dispatch costs to correct imbalances are based on bid price, Idaho
4 Power believes they are overstated for hydro resources, resulting in EIM benefits that
5 are overstated as well.

6 **Q. Please summarize the Company's proposal for quantifying EIM benefits to be**
7 **included in the 2019 APCU.**

8 A. The Company proposes to initially utilize the E3 study of estimated EIM benefits, which
9 includes a base case scenario of \$4.5 million, for inclusion in the 2019 APCU. The
10 Company will continue to work with Power Settlements to develop a methodology to
11 quantify actual benefits Idaho Power expects to achieve through EIM participation,
12 which will serve as the basis for forecasting EIM benefits in the future.

13 **Q. Does Idaho Power intend to update the forecast of EIM benefits to be included**
14 **in the 2019 APCU at a later point in time?**

15 A. Idaho Power intends to keep Staff and parties apprised of the Company's progress
16 towards validating CAISO's benefits methodology and the development of an
17 alternative methodology. The Company is optimistic that it will be able to provide an
18 updated forecast of EIM benefits to be included in the 2019 APCU during the
19 proceeding, ensuring that rates in effect June 1, 2019, will reflect an appropriate level
20 of savings associated with EIM participation.

21 **Q. Please describe the incremental costs of Western EIM participation.**

22 A. As stated previously, by participating in the Western EIM, the Company anticipates
23 achieving NPSE savings, which will benefit customers; however, to achieve such
24 benefits, Idaho Power has incurred, and will continue to incur, incremental costs to
25 participate in the Western EIM, including software and metering investments and
26 annual, ongoing operations and maintenance ("O&M") expenses. Consistent with the

1 2018 APCU, the Company has included EIM-related costs in the 2019 APCU. The
2 EIM-related costs included in the 2019 October Update consist of the annual return on
3 net rate base from the capital investment required to participate in the Western EIM,
4 depreciation expense, and ongoing O&M expenses. On an Oregon allocated basis,
5 the revenue requirement associated with EIM costs to be included in the 2019 October
6 Update is \$134,175, as shown in Exhibit No. 106.

7 **Q. Why does the Company believe the APCU is the appropriate mechanism to**
8 **recover EIM-related costs?**

9 A. Over the long term, the Company envisions that both the benefits and costs associated
10 with EIM participation would be part of net power supply costs reflected in base rates
11 as addressed in a general rate case, however, because the timing of the Company's
12 next general rate case is unknown, it is necessary to utilize an interim rate mechanism
13 for cost recovery to provide for proper matching of costs and benefits in customer
14 rates.

15 Since participation in the Western EIM began in April 2018, the Company, and
16 ultimately its customers, have achieved cost-saving benefits. As these benefits are in
17 the form of reduced NPSE, it is appropriate to recover the costs of EIM participation
18 under the mechanism in which NPSE is recovered. Including the EIM-related costs in
19 the 2019 APCU is necessary to ensure that customer rates reflect a proper matching
20 of EIM benefits and costs and to prevent intergenerational inequities. This treatment
21 was approved by the Commission in Idaho Power's 2018 APCU, Docket No. UE 333,
22 in Order No. 18-170.

23 Per-Unit Cost Calculation and NPSE Discussion

24 **Q. What is the NPSE per-unit cost when you combine all of the quantifications**
25 **described earlier?**
26

1 A. Exhibit 105 shows total system NPSE of \$387.4 million and normalized annual sales
2 at the customer level for the April 2019 through March 2020 test year of 14,836,820
3 MWh, resulting in a per-unit cost for the 2019 October Update of \$26.11 per MWh
4 (\$387.4 million / 14.837 million MWh = \$26.11 per MWh) to become effective on June
5 1, 2019.

6 **Q. How does the 2019 October Update per-unit cost of \$26.11 per MWh compare to**
7 **the 2018 October Update per-unit cost?**

8 A. The 2018 October Update per-unit cost, which became effective June 1, 2018, was
9 \$26.18 per MWh based upon a determination of total NPSE of \$391.7 million
10 compared to this year's October Update per-unit cost of \$26.11 per MWh and total
11 NPSE of \$387.4 million.

12 **Q. What can be concluded from the information presented in Exhibit 107?**

13 A. Exhibit 107 compares the AURORA-developed results, the re-pricing of purchased
14 power and surplus sales, and the differences between the 2018 October Update and
15 the 2019 October Update. A high-level analysis based on the information shown in
16 Exhibit 107 suggests that lower priced natural gas generation combined with increased
17 PURPA and PPA generation have displaced coal generation and market power
18 purchases as compared to last year's October Update. Additionally, the increases in
19 natural gas, PURPA, and PPA generation have increased the Company's expectation
20 of off-system sales.

21 **Q. What are some of the differences in the way resources are dispatched as shown**
22 **on Exhibit 107?**

23 A. Column H of Exhibit 107 shows the following: (1) A decrease in coal expenses of
24 \$12.4 million associated with a decrease of 0.31 million MWh in generation, (2) an
25 increase in natural gas expenses of \$5.7 million associated with an increase of 0.42
26 million MWh in generation, (3) a decrease in market purchased power expenses of

1 \$1.2 million associated with a decrease of 0.07 million MWh, (4) an increase in PPA
2 expenses of \$2.7 million associated with an increase of 0.01 million MWh, (5) an
3 increase in PURPA expenses of \$3.9 million associated with an increase of 0.11
4 million MWh, and finally, (6) an increase in surplus sales revenue of \$4.0 million
5 associated with an increase of 0.23 million MWh.

6 **Q. Can you elaborate more on the changes in generation from the 2018 October**
7 **Update to the 2019 October Update?**

8 A. To illustrate the changes in generation, Columns D (2018) and F (2019) of Exhibit 107
9 calculate the percentage of generation compared to total system load. For example,
10 Column F, line 1, shows that hydro provided 53 percent of the generation to meet the
11 total system load of 16,100,957 MWh ($8,553,211 / 16,100,957 = 53$ percent). A
12 comparison of the 2019 October Update results to the 2018 October Update results
13 demonstrates that hydro generation was unchanged at 53 percent, coal generation
14 decreased from 13 percent to 11 percent, natural gas generation increased from 18
15 percent to 21 percent, market purchased power was unchanged at 3 percent, PPA
16 generation was unchanged at 3 percent, PURPA generation increased from 18
17 percent to 19 percent, and lastly, surplus sales increased from negative 9 percent to
18 negative 10 percent. This comparison between resource type and total system load
19 shows that increased natural gas generation, as well as PURPA and PPA generation,
20 have displaced coal generation and resulted in increased surplus sales.

21 **Q. Are the changes in expenses among resource types consistent with the changes**
22 **in output?**

23 A. Yes. The changes in expenses among resource types are relatively consistent with
24 the changes in output. The changes in expenses for each resource type are also
25 shown in Columns D (2018) and F (2019) of Exhibit 107 as follows: Coal expense
26 decreased from 20 percent to 17 percent of total NPSE, natural gas expense increased

1 from 19 percent to 20 percent, market purchased power expense was unchanged at
2 3 percent, PPA expense increased from 11 percent to 12 percent, PURPA expense
3 increased from 55 percent to 57 percent, and surplus sales revenue increased from
4 negative 7 percent to negative 8 percent. Exhibit 107 demonstrates that the majority
5 of movement in expenses is related to coal, natural gas, PURPA, PPAs, and surplus
6 sales, which is consistent with the changes in generation.

7 **Q. What factors are driving the decrease in NPSE as compared to last year's**
8 **October Update?**

9 A. The decrease in NPSE is primarily due to lower coal-fired generation, which is being
10 driven by increased low-cost natural gas generation. For the 2019 October Update,
11 the average cost of generation at the Company's Langley Gulch natural gas plant is
12 \$17.70 per MWh, whereas the per-unit cost of coal varies from \$27.39 per MWh to
13 \$39.53 per MWh.

14 The decrease in NPSE is partially offset by increased PURPA generation,
15 which is a must-take resource regardless of need and its per-unit cost, as well as
16 increased PPA generation. For the 2019 October Update, PURPA and PPA
17 generation, which have average costs of \$73.31 per MWh and \$81.65 per MWh,
18 respectively, are displacing lower cost resources, including market power purchases
19 at an average AURORA-generated cost of \$33.24 per MWh. The increases in natural
20 gas, PURPA, and PPA generation more than offset the reductions in coal generation
21 and market power purchases, resulting in increased surplus sales volumes at an
22 average AURORA-generated price of \$22.23 per MWh.

23 Lastly, the re-pricing of market purchases and sales is also partially offsetting
24 the decrease in NPSE. Prior to re-pricing, the decrease in NPSE as compared to last
25 year's October Update was \$6.3 million. After re-pricing, the decrease in NPSE as
26 compared to last year's October Update is \$4.2 million.

1 **Q. Did the Company comply with the methodology in Order No. 08-238 when it**
2 **performed its analysis to determine the NPSE for the 2019 October Update?**

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

5 Jurisdictional Allocation of NPSE

6 **Q. How did the Company calculate the Oregon jurisdictional share of NPSE?**

7 A. Per the 2017 Stipulation, the Oregon jurisdictional share of NPSE is calculated by
8 multiplying the system NPSE total per-unit cost of \$26.11 per MWh by the forecasted
9 Oregon jurisdictional loss-adjusted normalized sales for the April 2019 through March
10 2020 test period of 680,879.846 MWh, resulting in an Oregon jurisdictional share of
11 NPSE of \$17.78 million ($\$26.11 \times 680,879.846 \text{ MWh} = \17.78 million), as shown on
12 Line 1 of Exhibit 108.

13 Quantification and Discussion of the APCU Revenue Requirement

14 **Q. Based on the determination of the Oregon jurisdictional share of NPSE, what is**
15 **the APCU revenue requirement for the 2019 October Update?**

16 A. As shown on Line 3 of Exhibit 108, the APCU revenue requirement is \$17.91 million.
17 The APCU revenue requirement is calculated by adding the 2019 October Update
18 Oregon jurisdictional share of NPSE of \$17.78 million, Line 1, to the Oregon allocated
19 EIM costs of \$134,175, Line 2.

20 **Q. What is the overall revenue impact of this year's October Update compared to**
21 **current revenue?**

22 A. Exhibit 108 also reveals the revenue impact resulting from this year's October Update.
23 As shown on Line 12, base NPSE recovery under current approved APCU rates is
24 \$17.92 million, whereas the proposed 2019 APCU October Update revenue
25 requirement is \$17.91 million, as shown on Line 3. The comparison of this year's
26

1 October Update to current approved revenue indicates a credit to Oregon customers
2 of \$0.01 million.

3 **Rate Implementation**

4 **Q. What method of allocation did the Company use to spread the APCU revenue**
5 **requirement associated with the 2019 October Update to the various customer**
6 **classes?**

7 A. The Company allocated the \$17.91 million APCU revenue requirement associated
8 with the 2019 October Update using the revenue spread methodology agreed upon in
9 the settlement stipulation approved by Order No. 18-170 in the Company's 2018
10 APCU, Docket No. UE 333 ("2018 Stipulation"). The 2018 Stipulation established a
11 revenue spread methodology whereby the total APCU revenue requirement is
12 allocated to individual customer classes on the basis of normalized jurisdictional
13 forecasted sales at the generation level for the test period. Additionally, any rate
14 increases resulting from application of this revenue spread methodology as applied to
15 a customer class will be capped at 3 percent above the overall average rate increase
16 on a percentage of total revenue basis. In this case, the overall average rate change
17 as a percentage of total revenue is a decrease of 0.02 percent; therefore, any rate
18 increases applied to individual customer classes will be capped at 2.98 percent.

19 **Q. Were any customer classes subject to the rate cap described above?**

20 A. Yes. Application of the stipulated revenue spread methodology initially results in rate
21 increases for Large Power Transmission Service customers (Tariff Schedule 19T), and
22 Traffic Control Lighting Service customers (Tariff Schedule 42) of 5.58 percent and
23 4.79 percent, respectively. The Company applied the stipulated rate increase cap of
24 2.98 percent to these customer classes, and reallocated the resulting revenue
25 requirement shortfall among all other customer classes. The final proposed revenue
26

1 spread resulting from the application of the stipulated methodology is provided in
2 Exhibit 108.

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

5 A. Yes. Exhibit 109 provides a summary of the revenue change resulting from this year's
6 October Update as compared to current revenue.

7 **Q. Does the Company intend to provide supporting workpapers for the 2019**
8 **October Update to Staff and the Oregon Citizens' Utility Board ("CUB")?**

9 A. Yes. Idaho Power will provide its supporting workpapers to Staff and CUB as part of
10 the 2019 APCU filing, including workpapers to support the depreciable lives of Bridger
11 Coal Company assets, per the 2018 Stipulation. The Company intends to provide
12 these workpapers within five business days of filing the 2019 APCU.

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

14 A. Yes, it does.
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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, 2019 – March 31, 2020
Normalized Loads Over 90 Water Year Conditions

October 31, 2018

IPCO NORMALIZED POWER SUPPLY EXPENSES FOR APRIL 1, 2019 -- MARCH 31, 2020 (Multiple Gas Prices/90 Hydro Year Conditions)
AURORA Developed Results - 2019 October Update
Variable Coal Handling Costs Modeled Using UE 301 & UE 314 Settlement Methodologies
AVERAGE

Line No.		April	May	June	July	August	September	October	November	December	January	February	March	Annual
1	Hydroelectric Generation (MWh)	892,033.4	962,605.9	933,757.4	695,002.9	535,120.7	519,164.9	510,836.3	442,334.6	647,871.1	797,103.9	794,873.9	822,506.2	8,553,211.1
	Bridger													
2	Energy (MWh)	4,506.1	246.8	21,636.3	175,405.9	208,563.8	86,788.0	60,026.4	110,545.7	157,745.8	134,789.9	78,784.2	36,191.8	1,075,230.6
3	AURORA Modeled Expense (\$ x 1000)	\$ 167.1	\$ 9.3	\$ 783.9	\$ 6,223.5	\$ 7,392.1	\$ 3,124.8	\$ 2,203.9	\$ 4,014.1	\$ 5,602.3	\$ 4,829.4	\$ 2,866.6	\$ 1,338.9	\$ 38,555.9
4	AURORA Modeled Handling Expense (\$ x 1000)	\$ 1.3	\$ 0.1	\$ 6.1	\$ 49.1	\$ 58.4	\$ 24.3	\$ 16.8	\$ 31.0	\$ 44.2	\$ 37.7	\$ 22.1	\$ 10.1	\$ 301.1
5	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 165.8	\$ 9.2	\$ 777.8	\$ 6,174.4	\$ 7,333.7	\$ 3,100.5	\$ 2,187.1	\$ 3,983.2	\$ 5,558.1	\$ 4,791.7	\$ 2,844.5	\$ 1,328.8	\$ 38,254.8
6	IPC Share of OHAG Expense (\$ x 1000)	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 209.9	\$ 2,518.9
7	Total Expense (\$ x 1000)	\$ 375.7	\$ 219.1	\$ 987.7	\$ 6,384.3	\$ 7,543.7	\$ 3,310.4	\$ 2,397.0	\$ 4,193.1	\$ 5,768.0	\$ 5,001.6	\$ 3,054.4	\$ 1,538.7	\$ 40,773.8
	Boardman													
8	Energy (MWh)	7,013.3	3,951.2	10,926.9	33,299.2	37,712.5	27,206.7	22,262.4	26,374.4	31,328.6	28,045.6	20,704.9	17,005.8	265,831.5
9	AURORA Modeled Expense (\$ x 1000)	\$ 203.7	\$ 116.7	\$ 305.7	\$ 906.5	\$ 1,024.0	\$ 743.0	\$ 612.1	\$ 721.1	\$ 853.0	\$ 718.2	\$ 534.7	\$ 439.1	\$ 7,177.7
10	AURORA Modeled Handling Expense (\$ x 1000)	\$ 2.9	\$ 1.6	\$ 4.5	\$ 13.7	\$ 15.5	\$ 11.2	\$ 9.1	\$ 10.8	\$ 12.8	\$ 11.5	\$ 8.5	\$ 7.0	\$ 109.0
11	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 200.8	\$ 115.1	\$ 301.2	\$ 892.8	\$ 1,008.5	\$ 731.8	\$ 603.0	\$ 710.2	\$ 840.1	\$ 706.7	\$ 526.3	\$ 432.1	\$ 7,068.7
12	IPC Share of OHAG Expense (\$ x 1000)	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 17.7	\$ 212.8
13	Total Expense (\$ x 1000)	\$ 218.5	\$ 132.8	\$ 319.0	\$ 910.6	\$ 1,026.3	\$ 749.6	\$ 620.7	\$ 728.0	\$ 857.9	\$ 724.4	\$ 544.0	\$ 449.8	\$ 7,281.5
	Valmy													
14	Energy (MWh)	6,025.1	2,953.3	16,650.0	74,794.5	87,140.6	43,206.2	36,808.4	46,444.1	72,367.6	25,271.0	13,412.3	9,219.1	434,292.3
15	AURORA Modeled Expense (\$ x 1000)	\$ 216.3	\$ 106.2	\$ 556.6	\$ 2,411.1	\$ 2,797.8	\$ 1,422.7	\$ 1,221.1	\$ 1,529.1	\$ 2,339.4	\$ 863.5	\$ 473.3	\$ 330.7	\$ 14,267.9
16	AURORA Modeled Handling Expense (\$ x 1000)	\$ 13.6	\$ 6.6	\$ 37.5	\$ 168.3	\$ 196.1	\$ 97.2	\$ 82.8	\$ 104.5	\$ 162.8	\$ 56.9	\$ 30.2	\$ 20.7	\$ 977.2
17	AURORA Expense less Modeled Handling Expense (\$ x 1000)	\$ 202.8	\$ 99.6	\$ 519.1	\$ 2,242.8	\$ 2,601.8	\$ 1,325.5	\$ 1,138.3	\$ 1,424.6	\$ 2,176.5	\$ 806.7	\$ 443.1	\$ 309.9	\$ 13,290.7
18	IPC Share of OHAG Expense (\$ x 1000)	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 326.9	\$ 3,923.3
19	Usage Charges Paid to IPC (\$ x 1000)													\$ 48.4
20	Total Expense (\$ x 1000)	\$ 529.7	\$ 426.5	\$ 846.0	\$ 2,569.8	\$ 2,928.7	\$ 1,652.4	\$ 1,465.2	\$ 1,751.6	\$ 2,503.5	\$ 1,133.6	\$ 770.0	\$ 636.9	\$ 17,165.7
	Langley Gulch													
21	Energy (MWh)	191,222.9	197,467.8	190,292.1	198,952.9	199,049.3	193,611.1	195,441.4	192,756.0	202,952.8	193,661.6	171,281.6	193,755.0	2,320,444.3
22	Expense (\$ x 1000)	\$ 2,611.7	\$ 2,607.2	\$ 2,528.4	\$ 3,276.2	\$ 3,249.4	\$ 3,130.2	\$ 3,307.6	\$ 3,747.5	\$ 5,006.9	\$ 4,461.5	\$ 3,653.6	\$ 3,480.9	\$ 41,061.2
	Danskin													
23	Energy (MWh)	37,565.7	41,924.0	88,012.6	123,234.4	146,973.0	99,690.6	66,039.8	29,429.4	6,766.0	4,125.8	5,810.9	14,472.3	664,044.6
24	Expense (\$ x 1000)	\$ 879.8	\$ 948.1	\$ 2,073.8	\$ 3,495.5	\$ 4,104.5	\$ 2,725.1	\$ 1,863.7	\$ 889.3	\$ 264.4	\$ 162.5	\$ 209.0	\$ 444.9	\$ 18,060.6
	Bennett Mountain													
25	Energy (MWh)	19,492.8	22,535.2	57,620.9	86,450.0	107,378.1	67,607.4	40,115.4	12,106.4	4,157.8	1,662.9	3,346.3	5,698.5	428,171.7
26	Expense (\$ x 1000)	\$ 461.8	\$ 513.6	\$ 1,343.9	\$ 2,424.3	\$ 2,956.1	\$ 1,850.8	\$ 1,140.6	\$ 364.5	\$ 161.8	\$ 68.2	\$ 125.1	\$ 177.2	\$ 11,587.9
27	Fixed Capacity Charge - Gas Transportation (\$ x 1000)	\$ 689.9	\$ 712.5	\$ 689.9	\$ 712.5	\$ 712.5	\$ 689.9	\$ 712.5	\$ 689.9	\$ 712.5	\$ 711.2	\$ 666.0	\$ 711.2	\$ 8,410.6
	Purchased Power (Excluding PURPA)													
28	Market Energy (MWh)	1,038.5	2,569.9	44,444.9	51,202.2	48,968.7	24,463.2	13,278.2	64,417.4	57,235.6	67,162.7	15,359.0	15,294.9	405,435.2
29	Elkhorn Wind Energy (MWh)	26,404.6	26,527.2	25,227.4	25,865.4	22,886.0	21,015.4	23,409.4	30,182.4	27,577.6	24,218.8	25,076.5	27,293.8	305,682.2
30	Neal Hot Springs Energy (MWh)	15,215.9	11,429.3	11,317.3	9,167.6	9,844.5	12,018.1	16,332.7	18,385.9	20,015.0	18,557.6	17,695.7	17,587.8	177,567.7
31	Raft River Geothermal Energy (MWh)	6,974.0	4,854.7	5,861.8	6,288.1	5,741.9	6,278.0	6,505.3	6,996.5	7,608.9	7,732.9	6,927.9	6,932.1	78,702.0
32	Total Energy Excl. PURPA (MWh)	49,633.0	45,381.1	86,851.5	92,523.3	87,441.1	63,774.7	59,525.6	119,982.2	112,437.1	117,669.9	65,059.2	67,108.6	967,387.0
33	Market Expense (\$ x 1000)	\$ 24.2	\$ 67.9	\$ 1,405.5	\$ 1,770.5	\$ 1,640.2	\$ 803.2	\$ 414.7	\$ 2,070.8	\$ 1,915.8	\$ 2,242.4	\$ 503.0	\$ 490.3	\$ 13,348.6
34	Elkhorn Wind Expense (\$ x 1000)	\$ 1,247.9	\$ 1,253.7	\$ 1,622.1	\$ 1,995.8	\$ 1,765.9	\$ 1,351.3	\$ 1,505.2	\$ 2,328.9	\$ 2,127.9	\$ 1,603.9	\$ 1,608.8	\$ 1,328.7	\$ 19,792.0
35	Neal Hot Springs Expense (\$ x 1000)	\$ 1,298.8	\$ 975.6	\$ 1,317.9	\$ 1,281.1	\$ 1,375.7	\$ 1,399.5	\$ 1,901.9	\$ 2,569.2	\$ 2,796.9	\$ 2,198.3	\$ 2,096.2	\$ 1,527.2	\$ 20,738.4
36	Raft River Geothermal Expense (\$ x 1000)	\$ 345.4	\$ 240.4	\$ 395.0	\$ 508.5	\$ 464.3	\$ 423.0	\$ 438.3	\$ 565.7	\$ 615.3	\$ 531.9	\$ 476.6	\$ 350.5	\$ 5,354.8
37	Total Expense Excl. PURPA (\$ x 1000)	\$ 2,916.3	\$ 2,537.6	\$ 4,740.5	\$ 5,555.8	\$ 5,246.1	\$ 3,977.0	\$ 4,260.2	\$ 7,534.6	\$ 7,455.8	\$ 6,576.6	\$ 4,736.7	\$ 3,696.6	\$ 59,233.8
	Surplus Sales													
38	Energy (MWh)	403,826.5	308,197.9	137,043.4	28,888.5	17,184.8	58,461.5	91,758.2	14,860.0	45,275.5	65,128.3	197,116.5	256,319.6	1,624,060.6
39	Revenue Including Transmission Expenses (\$ x 1000)	\$ 8,441.6	\$ 6,084.4	\$ 2,829.4	\$ 901.2	\$ 670.7	\$ 1,675.8	\$ 2,475.9	\$ 345.7	\$ 1,504.5	\$ 1,690.4	\$ 5,236.7	\$ 5,873.9	\$ 37,730.3
40	Transmission Expenses (\$ x 1000)	\$ 403.8	\$ 308.2	\$ 137.0	\$ 28.9	\$ 17.2	\$ 58.5	\$ 91.8	\$ 14.9	\$ 45.3	\$ 65.1	\$ 197.1	\$ 256.3	\$ 1,624.1
41	Revenue Excluding Transmission Expenses (\$ x 1000)	\$ 8,037.8	\$ 5,776.2	\$ 2,692.4	\$ 872.4	\$ 653.5	\$ 1,617.4	\$ 2,384.1	\$ 330.9	\$ 1,459.3	\$ 1,625.2	\$ 5,039.6	\$ 5,617.6	\$ 36,106.3
42	Net Power Supply Expenses (\$ x 1000)	\$ 645.7	\$ 2,321.3	\$ 10,836.9	\$ 24,456.5	\$ 27,113.7	\$ 16,468.0	\$ 13,383.5	\$ 19,567.7	\$ 21,271.6	\$ 17,214.4	\$ 8,719.3	\$ 5,518.6	\$ 167,468.8

Idaho Power/102
Witness: Nicole A. Blackwell

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 31, 2018

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/1

Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
10/4/2017	20.5000	19.7500	19.9000	27.9000	31.8000	28.3500	24.9000	27.1500	32.9000	34.0000	28.9500	23.7500
10/5/2017	20.6500	19.9000	20.0500	28.1000	32.0500	28.5500	25.1000	27.3500	33.1500	34.2500	29.1500	23.9000
10/6/2017	20.5000	19.7500	19.9000	27.9000	31.8000	28.3500	24.9000	27.1500	32.9000	34.0000	28.9500	23.7500
10/9/2017	20.5000	19.7500	19.9000	27.9000	31.8500	28.3500	24.9000	27.1500	32.9500	34.0500	28.9500	23.7500
10/10/2017	20.6500	19.9000	20.0500	28.1000	32.0500	28.5500	25.0500	27.3500	33.1500	34.2500	29.1500	23.9000
10/11/2017	20.8500	20.0500	20.2000	28.3500	32.3500	28.8000	25.2500	27.6000	33.4500	34.5500	29.4000	24.1000
10/12/2017	20.8500	20.0500	20.2000	28.3500	32.3000	28.8000	25.2500	27.6000	33.4000	34.5000	29.4000	24.1000
10/13/2017	20.7000	19.9000	20.0500	28.1500	32.1000	28.6000	25.1000	27.4000	33.1500	34.3000	29.2000	23.9500
10/16/2017	20.7500	19.9500	20.1000	28.2500	32.2000	28.7000	25.1500	27.4500	33.2500	34.4000	29.2500	24.0000
10/17/2017	20.8000	20.0000	20.1500	28.3000	32.3000	28.7500	25.2000	27.5000	33.3500	34.5000	29.3000	24.0500
10/18/2017	20.5500	19.7500	19.9000	28.0000	31.9500	28.4500	24.9000	27.2000	32.9500	34.1500	29.0000	23.8000
10/19/2017	20.6500	19.8500	20.0000	28.1500	32.1000	28.6000	25.0000	27.3500	33.1000	34.3000	29.1500	23.9000
10/20/2017	20.7000	19.9000	20.0500	28.2500	32.2000	28.7000	25.0500	27.4000	33.2000	34.4000	29.2000	23.9500
10/23/2017	20.8000	19.9500	20.1000	28.3500	32.3000	28.8000	25.1500	27.5000	33.3000	34.5000	29.3000	24.0500
10/24/2017	20.7500	19.9000	20.0500	28.2500	32.2000	28.7000	25.0500	27.4000	33.2000	34.4000	29.2000	23.9500
10/25/2017	20.7500	19.9000	20.0500	28.2500	32.2000	28.7000	25.0500	27.4000	33.2000	34.4000	29.2000	23.9500
10/26/2017	20.7500	19.9000	20.0500	28.3000	32.2500	28.7500	25.1000	27.4500	33.2500	34.4500	29.2500	23.9500
10/27/2017	20.5500	19.7000	19.8500	28.0500	31.9500	28.5000	24.8500	27.2000	32.9500	34.1500	29.0000	23.7500
10/30/2017	20.5500	19.7000	19.8500	28.0500	31.9500	28.5000	24.8500	27.2000	32.9500	34.1500	29.0000	23.7500
10/31/2017	20.4500	19.6000	19.7500	27.9000	31.8000	28.3500	24.7500	27.0500	32.8000	34.0000	28.8500	23.6500
11/1/2017	20.3000	19.5000	19.6500	27.7000	31.6000	28.1500	24.6000	26.9000	32.6000	33.8000	28.7000	23.5000
11/2/2017	20.2500	19.4500	19.6000	27.6500	31.5500	28.1000	24.5500	26.8500	32.5500	33.7500	28.6500	23.4500
11/3/2017	20.5500	19.7500	19.9000	28.1000	32.0500	28.5500	25.4500	27.8000	33.7000	34.2500	29.0500	23.8000
11/6/2017	20.9000	20.1000	20.2500	28.6000	32.6000	29.0500	25.9000	28.2500	34.2500	34.8000	29.5000	24.2000
11/7/2017	20.9500	20.1500	20.3000	28.6500	32.6500	29.1000	25.9500	28.3000	34.3000	34.8500	29.5500	24.2500
11/8/2017	20.7000	19.9000	20.0500	28.3000	32.2500	28.7500	25.6500	27.9500	33.9000	34.4500	29.2000	23.9500
11/9/2017	20.5500	19.7500	19.9000	28.1000	32.0500	28.5500	25.5000	27.7500	33.7000	34.2500	29.0000	23.8000
11/10/2017	20.5000	19.7000	19.8500	28.0000	31.9500	28.4500	25.4500	27.6500	33.6000	34.1500	28.9000	23.7500
11/13/2017	20.5000	19.7000	19.8500	28.0000	31.9500	28.4500	25.4500	27.6500	33.6000	34.1500	28.9000	23.7500
11/14/2017	20.5500	19.7500	19.9000	28.0500	32.0500	28.5000	25.5000	27.7000	33.7000	34.2500	28.9500	23.8000
11/15/2017	20.4500	19.6500	19.8000	27.9000	31.9000	28.3500	25.3500	27.5500	33.5000	34.1000	28.8000	23.7000
11/16/2017	20.5000	19.6500	19.8500	27.9500	31.9500	28.4000	25.4000	27.6000	33.5500	34.1500	28.8500	23.7500
11/17/2017	20.6500	19.8000	20.0000	28.1500	32.2000	28.6000	25.6000	27.8000	33.8000	34.4000	29.0500	23.9000
11/20/2017	20.5500	19.7000	19.9000	28.0500	32.1000	28.5000	25.5000	27.7000	33.6500	34.3000	28.9500	23.8000
11/21/2017	20.5500	19.7000	19.9000	28.0500	32.1000	28.5000	25.5000	27.7000	33.6500	34.5000	29.1000	23.9500
11/22/2017	20.5000	19.6500	19.8500	27.9500	32.0000	28.4000	25.4500	27.6000	33.5500	34.4000	29.0000	23.9000
11/24/2017	20.3000	19.4500	19.6500	27.6500	31.6500	28.1000	25.2000	27.3000	33.2000	34.0500	28.7000	23.6500
11/27/2017	20.7000	19.8500	20.0500	28.2500	32.3000	28.7000	25.7500	27.8500	33.9000	34.7000	29.2500	24.1000
11/29/2017	21.0500	20.2000	20.4000	28.7500	32.9000	29.2500	26.2500	28.3500	34.5500	35.3000	29.7500	24.5000
11/30/2017	20.9500	20.1000	20.3000	28.6000	32.7000	29.1000	26.1000	28.2000	34.3500	35.1000	29.6000	24.3500
12/1/2017	20.8500	20.0000	20.2000	28.4500	32.5500	28.9500	26.0000	28.0500	34.2000	34.9500	29.4500	24.2500
12/4/2017	20.5500	19.7500	19.9500	28.0500	32.1000	28.5500	25.6500	27.7000	33.7500	34.6500	29.2000	24.0500
12/5/2017	20.3500	19.5500	19.7500	27.8000	31.8000	28.3000	25.4000	27.4500	33.4500	34.3500	28.9500	23.8500
12/6/2017	20.3000	19.5000	19.7000	27.7500	31.7000	28.2000	25.3500	27.4000	33.3500	34.2500	28.9000	23.8000
12/7/2017	20.0000	19.2000	19.4000	27.3000	31.2000	27.7500	24.9500	26.9500	32.8000	33.7500	28.4500	23.4500
12/8/2017	20.0000	19.2000	19.4000	27.3000	31.2000	27.7500	24.9500	26.9500	32.8000	34.2500	28.8500	23.8000
12/11/2017	20.2000	19.4000	19.6000	27.6000	31.5500	28.0500	25.2000	27.2500	33.1500	34.6000	29.1500	24.0500
12/12/2017	20.2000	19.4000	19.6000	27.6000	31.5500	28.0500	25.2000	27.2500	33.1000	34.5500	29.1500	24.0500
12/13/2017	19.9000	19.1000	19.3000	27.1500	31.0500	27.6000	24.8000	26.8000	32.5500	34.3000	28.9000	23.8500
12/14/2017	20.2500	19.4500	19.6500	27.6500	31.6500	28.1000	25.2500	27.3000	33.1500	34.9000	29.4000	24.2500
12/15/2017	20.0000	19.2000	19.4000	27.3500	31.3000	27.7500	24.9500	27.0000	32.7500	34.6500	29.2000	24.1000
12/18/2017	20.3500	19.5500	19.7500	27.8500	31.8500	28.2500	25.4000	27.5000	33.3500	35.3500	29.8000	24.6000
12/19/2017	20.2500	19.4500	19.6500	27.7000	31.7000	28.1000	25.2500	27.3500	33.1500	35.2500	29.7000	24.5000
12/20/2017	19.9500	19.1500	19.3500	27.3000	31.2000	27.7000	24.8500	26.9500	32.6500	34.8000	29.3500	24.2000
12/21/2017	19.9000	19.1000	19.3000	27.2000	31.1000	27.6000	24.8000	26.8500	32.5500	34.7000	29.2500	24.1500
12/22/2017	19.9500	19.1500	19.3500	27.2500	31.1500	27.6500	24.8500	26.9000	32.6000	34.7500	29.3000	24.2000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
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Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
12/26/2017	19.9500	19.1500	19.3500	27.2500	31.1500	27.6500	24.8500	26.9000	32.6000	34.7500	29.3000	24.2000
12/27/2017	20.1500	19.3500	19.5500	27.5500	31.4500	27.9500	25.1000	27.1500	32.9500	35.0500	29.5500	24.4500
12/28/2017	20.7500	19.9000	20.1500	28.3500	32.4000	28.7500	25.8500	27.9500	33.9000	36.0000	30.3500	25.1000
12/29/2017	20.5500	19.7500	20.0000	28.1000	32.1000	28.5000	25.6500	27.7000	33.6000	35.7000	30.1000	24.9000
1/2/2018	20.5000	19.7000	19.9500	28.0500	32.0500	28.4500	25.6000	27.6500	33.5500	35.6500	30.0500	24.8500
1/3/2018	20.4000	19.6000	19.8500	27.9000	31.8500	28.3000	25.4500	27.5000	33.3500	35.4500	29.9000	24.7000
1/4/2018	20.1000	19.3000	19.5500	27.5000	31.4000	27.9000	25.0500	27.1000	32.8500	35.0000	29.5500	24.4000
1/5/2018	20.1000	19.3000	19.5500	27.5000	31.4000	27.9000	25.0500	27.1000	32.8500	35.1000	29.6500	24.5000
1/8/2018	19.9500	19.1500	19.4000	27.3000	31.1500	27.7000	24.8500	26.9000	32.6000	34.8500	29.4500	24.3500
1/9/2018	20.0000	19.2000	19.4500	27.3500	31.2000	27.7500	24.9000	26.9500	32.6500	34.8000	29.4000	24.3000
1/10/2018	19.8500	19.0500	19.3000	27.1500	30.9500	27.5500	24.7000	26.7500	32.4000	34.5500	29.2000	24.1500
1/11/2018	19.7500	19.0000	19.2000	27.0500	30.8500	27.4500	24.6000	26.6500	32.2500	34.3500	29.0500	24.0000
1/12/2018	19.8000	19.0500	19.2500	27.1000	30.9000	27.5000	24.6500	26.7000	32.3500	34.4000	29.1000	24.0500
1/16/2018	19.5500	18.8000	19.0000	26.8000	30.5500	27.1500	24.3500	26.4000	31.9500	34.0000	28.8000	23.8000
1/17/2018	19.5500	18.8000	19.0000	26.8000	30.5500	27.1500	24.3500	26.4000	31.9500	34.0000	28.8000	23.8000
1/18/2018	19.6500	18.9000	19.1000	26.9500	30.7000	27.3000	24.4500	26.5500	32.1000	34.2000	28.9500	23.9500
1/19/2018	19.6500	18.9000	19.1000	26.9500	30.7000	27.3000	24.4500	26.5500	32.1000	34.2000	28.9500	23.9500
1/22/2018	19.7000	18.9500	19.1500	27.0000	30.7500	27.3500	24.5000	26.6000	32.1500	34.3000	29.0500	24.0500
1/23/2018	19.8000	19.0500	19.2500	27.1500	30.9000	27.5000	24.6500	26.7500	32.3500	34.4500	29.2000	24.1500
1/24/2018	19.9000	19.1500	19.3500	27.3000	31.1000	27.6500	24.8000	26.9000	32.5500	34.6500	29.3500	24.3000
1/25/2018	19.8500	19.1000	19.3000	27.2000	31.0000	27.5500	24.7500	26.8000	32.4500	34.5500	29.2500	24.2500
1/26/2018	19.8500	19.1000	19.3000	27.2500	31.0500	27.6000	24.8000	26.8500	32.5000	34.6000	29.3000	24.3000
1/29/2018	19.8500	19.1000	19.3000	27.2500	31.0500	27.6000	24.8000	26.8500	32.5000	34.6000	29.3000	24.3000
1/30/2018	19.7000	18.9500	19.1500	27.0500	30.8000	27.4000	24.6000	26.6500	32.2500	34.3500	29.1000	24.1000
1/31/2018	19.7000	18.9500	19.1500	27.0000	30.7500	27.3500	24.5500	26.6000	32.2000	34.3000	29.0500	24.0500
2/1/2018	19.6500	18.9000	19.1000	26.9000	30.6500	27.2500	24.4500	26.5000	32.1000	34.2000	28.9500	23.9500
2/2/2018	19.5500	18.8000	19.0000	26.8000	30.5000	27.1500	24.3500	26.4000	31.9500	34.0500	28.8500	23.8500
2/5/2018	19.4500	18.7000	18.9000	26.6500	30.3500	27.0000	24.2000	26.2500	31.7500	33.8500	28.7000	23.7000
2/6/2018	19.2500	18.5000	18.7000	26.4000	30.0500	26.7500	23.9500	26.0000	31.4500	33.5500	28.4500	23.5000
2/7/2018	19.3000	18.5500	18.7500	26.5000	30.1500	26.8500	24.0500	26.1000	31.5500	33.6500	28.5500	23.6000
2/8/2018	19.1500	18.4000	18.6000	26.3000	29.9000	26.6500	23.8500	25.9000	31.3000	33.5500	28.4500	23.5000
2/9/2018	19.0000	18.2500	18.4500	26.1000	29.6500	26.4500	23.6500	25.7000	31.0500	33.4000	28.3500	23.4000
2/12/2018	19.0000	18.2500	18.4500	26.1000	29.6500	26.4500	23.6500	25.7000	31.0500	33.5000	28.4000	23.4500
2/13/2018	19.0000	18.2500	18.4500	26.0500	29.6000	26.4000	23.6000	25.6500	31.0000	33.6000	28.4500	23.5000
2/14/2018	19.0500	18.3000	18.5000	26.1500	29.7000	26.5000	23.7000	25.7500	31.1000	33.7000	28.5500	23.5500
2/15/2018	19.0000	18.2500	18.4500	26.1000	29.6500	26.4500	23.6500	25.7000	31.0500	34.0000	28.8000	23.7500
2/16/2018	19.0500	18.3000	18.5000	26.2000	29.7500	26.5500	23.7500	25.8000	31.1500	34.1500	28.9000	23.8500
2/20/2018	18.9500	18.2000	18.4000	26.0500	29.6000	26.4000	23.6000	25.6500	30.9500	33.9000	28.7000	23.6500
2/21/2018	19.2000	18.4500	18.6500	26.4000	30.0000	26.8000	23.9500	26.0000	31.4000	34.3500	29.0500	23.9500
2/22/2018	19.2500	18.5000	18.7000	26.4500	30.0500	26.8500	24.0000	26.0500	31.4500	34.4000	29.1000	24.0000
2/23/2018	19.1500	18.4500	18.6000	26.3500	29.9500	26.7500	23.9000	25.9500	31.3000	34.3000	29.0000	23.9000
2/26/2018	19.2500	18.5500	18.7000	26.4500	30.0500	26.8500	24.0000	26.0500	31.4500	34.4500	29.1000	24.0000
2/27/2018	19.2500	18.5500	18.7000	26.4500	30.1000	26.8500	24.0000	26.0500	31.5000	34.5000	29.1000	24.0000
2/28/2018	19.2000	18.5000	18.6500	26.4000	30.0500	26.8000	23.9500	26.0000	31.4500	34.4500	29.0500	23.9500
3/1/2018	19.3000	18.6000	18.7500	26.5500	30.2000	26.9500	24.1000	26.1500	31.6500	34.6000	29.2000	24.0500
3/2/2018	19.3500	18.6500	18.8000	26.6000	30.3000	27.0000	24.1500	26.2000	31.7500	34.7000	29.2500	24.1000
3/5/2018	19.3500	18.6500	18.8000	26.5500	30.2500	26.9500	24.1000	26.1500	31.7000	34.6000	29.2000	24.0500
3/6/2018	19.4000	18.7000	18.8500	26.6500	30.3500	27.0500	24.1500	26.2500	31.8000	34.7000	29.3000	24.1000
3/7/2018	19.5000	18.8000	18.9500	26.7500	30.5000	27.1500	24.2500	26.3500	31.9500	34.8500	29.4000	24.2000
3/8/2018	19.3500	18.6500	18.8000	26.5500	30.3000	26.9500	24.1000	26.1500	31.7500	34.6500	29.2000	24.0500
3/9/2018	19.5000	18.8000	18.9500	26.7500	30.5500	27.1500	24.3000	26.3500	32.0000	35.0000	29.5000	24.3000
3/12/2018	19.4500	18.7500	18.9000	26.6500	30.4500	27.0500	24.2000	26.2500	31.9000	34.9500	29.4500	24.2500
3/13/2018	19.4500	18.7500	18.9000	26.6500	30.4500	27.0500	24.2000	26.2500	31.9000	35.0000	29.5000	24.3000
3/14/2018	19.5000	18.8000	18.9500	26.7500	30.5500	27.1500	24.3000	26.3500	32.0000	35.1000	29.6000	24.4000
3/15/2018	19.5000	18.8000	18.9500	26.7500	30.5500	27.1500	24.3000	26.3500	32.0000	35.1000	29.6000	24.4000
3/16/2018	19.6000	18.9000	19.0500	26.9000	30.7000	27.3000	24.4000	26.5000	32.1500	35.2500	29.7500	24.5000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/3

Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
3/19/2018	19.5000	18.8500	19.0000	26.8000	30.6000	27.2000	24.3000	26.4000	32.0000	35.1500	29.6500	24.4000
3/20/2018	19.2500	18.6500	18.7500	26.5000	30.2500	26.9000	24.0000	26.1000	31.6000	34.9000	29.4500	24.2000
3/21/2018	19.3500	18.7000	18.8500	26.6000	30.3500	27.0000	24.1000	26.2000	31.7500	35.2500	29.7500	24.4500
3/22/2018	19.3000	18.6500	18.8000	26.5500	30.3000	26.9500	24.0500	26.1500	31.7000	35.2000	29.7000	24.4000
3/23/2018	19.4500	18.8000	18.9500	26.7500	30.5000	27.1500	24.2000	26.3500	31.9000	35.4000	29.9000	24.5500
3/26/2018	19.4500	18.8000	18.9500	26.7500	30.5000	27.1500	24.2000	26.3500	31.9000	35.4000	29.9000	24.5500
3/27/2018	19.5000	18.8500	19.0000	26.8000	30.5500	27.2000	24.2500	26.4000	32.0000	35.4500	29.9500	24.6000
3/28/2018	19.5000	18.8500	19.0000	26.7500	30.5000	27.1500	24.2000	26.3500	31.9500	35.4000	29.9000	24.5500
3/29/2018	19.5000	18.8500	19.0000	26.8000	30.5500	27.2000	24.2000	26.4000	32.0000	35.4500	29.9500	24.5500
4/2/2018	19.5000	18.8500	19.0000	26.8000	30.5500	27.2000	24.2000	26.4000	32.0000	35.4500	29.9500	24.5500
4/3/2018	19.6500	19.0000	19.1500	27.0500	30.8000	27.4500	24.4000	26.6500	32.3000	35.7500	30.2000	24.7500
4/4/2018	19.8000	19.1500	19.3000	27.2500	31.0000	27.6500	24.5500	26.8500	32.5000	36.0000	30.4000	24.9000
4/5/2018	19.7500	19.1000	19.2500	27.2000	30.9500	27.6000	24.5000	26.8000	32.4500	35.9500	30.3500	24.8500
4/6/2018	19.7000	19.0500	19.2000	27.1500	30.9000	27.5500	24.4500	26.7500	32.4000	35.9000	30.3000	24.8000
4/9/2018	19.7500	19.1000	19.2500	27.2000	30.9500	27.6000	24.5000	26.8000	32.4500	35.9500	30.3500	24.8500
4/10/2018	19.6000	18.9500	19.1000	27.0000	30.7000	27.3500	24.3000	26.6000	32.2000	35.7000	30.1500	24.6500
4/11/2018	19.6500	19.0000	19.1500	27.0500	30.7500	27.4000	24.3500	26.6500	32.2500	35.7500	30.2000	24.7000
4/12/2018	19.5500	18.9000	19.0500	26.9000	30.5500	27.2500	24.2000	26.5000	32.0500	35.5500	30.0500	24.5500
4/13/2018	19.5000	18.8500	19.0000	26.8500	30.5000	27.2000	24.1500	26.4500	32.0000	35.5000	30.0000	24.5000
4/16/2018	19.5000	18.8500	19.0000	26.8500	30.5000	27.2000	24.1500	26.4500	32.0000	35.5000	30.0000	24.5000
4/17/2018	19.5500	18.9000	19.0500	26.9000	30.5500	27.2500	24.2000	26.5000	32.0500	35.5500	30.0500	24.5500
4/18/2018	19.6500	19.0000	19.1500	27.0500	30.7500	27.4000	24.3500	26.6500	32.2500	35.7500	30.2000	24.7000
4/19/2018	19.2500	18.6500	18.7500	26.5000	30.1500	26.8500	23.8500	26.1500	31.6000	35.1500	29.6500	24.2500
4/20/2018	19.2500	18.6500	18.7500	26.5000	30.1500	26.8500	23.8500	26.1500	31.6000	35.1500	29.6500	24.2500
4/23/2018	19.3000	18.7000	18.8000	26.5500	30.2000	26.9000	23.9000	26.2000	31.6500	35.3500	29.8000	24.4000
4/24/2018	19.2500	18.6500	18.7500	26.4500	30.1000	26.8000	23.8000	26.1000	31.5500	35.4000	29.8000	24.4000
4/25/2018	19.3000	18.7000	18.8000	26.5000	30.1500	26.8500	23.8500	26.1500	31.6000	35.4500	29.8500	24.4500
4/26/2018	19.3000	18.7000	18.8000	26.5000	30.2000	26.8500	23.8500	26.1500	31.6500	35.5000	29.8500	24.4500
4/27/2018	19.2000	18.6000	18.7000	26.4000	30.0500	26.7000	23.7500	26.0500	31.5000	35.3500	29.7500	24.3500
4/30/2018	19.3000	18.7000	18.8000	26.5500	30.2500	26.8500	23.9000	26.2000	31.7000	35.5500	29.9000	24.5000
5/1/2018	19.5000	18.8500	18.9500	26.8000	30.5500	27.1000	24.1000	26.4500	32.0000	35.8500	30.1500	24.7000
5/2/2018	19.6000	18.9500	19.0500	26.9000	30.7000	27.2000	24.2000	26.5500	32.1500	36.0000	30.2500	24.8000
5/3/2018	19.3500	18.7000	18.8000	26.5500	30.3000	26.8500	23.9000	26.2000	31.7500	35.6000	29.9000	24.5000
5/4/2018	19.3000	18.6500	18.7500	26.5000	30.2000	26.8000	23.8500	26.1500	31.6500	35.5000	29.8500	24.4500
5/7/2018	19.3000	18.6500	18.7500	26.5000	30.2000	26.8000	23.8500	26.1500	31.6500	35.5000	29.8500	24.4500
5/8/2018	19.1000	18.4500	18.5500	26.2500	29.9000	26.5000	23.6000	25.9000	31.3000	35.2000	29.6000	24.2500
5/9/2018	19.4000	18.7500	18.8500	26.6500	30.4000	26.9000	24.0000	26.3000	31.8000	35.7000	30.0000	24.6000
5/10/2018	19.5000	18.8500	18.9500	26.8000	30.5500	27.0500	24.1500	26.4500	31.9500	35.8500	30.1500	24.7000
5/11/2018	19.6500	19.0000	19.1000	27.0000	30.7500	27.2500	24.3000	26.6500	32.2000	36.0500	30.3500	24.8500
5/14/2018	19.7500	19.1000	19.2000	27.1500	30.9000	27.4000	24.4500	26.8000	32.3500	36.2000	30.5000	24.9500
5/15/2018	19.7500	19.1000	19.2000	27.1000	30.8500	27.3500	24.4000	26.7500	32.3000	36.1500	30.4500	24.9500
5/16/2018	19.8000	19.1500	19.2500	27.2000	30.9500	27.4500	24.5000	26.8500	32.4000	36.2500	30.5500	25.0500
5/17/2018	19.9000	19.2500	19.3500	27.3500	31.1500	27.6000	24.6500	27.0000	32.6000	36.4500	30.7000	25.2000
5/18/2018	20.0500	19.4000	19.5000	27.5500	31.4000	27.8000	24.8500	27.2000	32.8500	36.5500	30.8000	25.3000
5/21/2018	20.0500	19.4000	19.5000	27.5500	31.4000	27.8000	24.8500	27.2000	32.8500	36.5500	30.8000	25.3000
5/22/2018	20.2500	19.6000	19.7000	27.8500	31.7500	28.1000	25.1000	27.5000	33.2000	36.9000	31.1000	25.5500
5/23/2018	20.2500	19.6000	19.7000	27.8500	31.7500	28.1000	25.1000	27.5000	33.2000	36.9000	31.1000	25.5500
5/24/2018	20.3000	19.6500	19.7500	27.9000	31.8000	28.1500	25.1500	27.5500	33.2500	36.8500	31.0500	25.5000
5/25/2018	20.4000	19.7500	19.8500	28.0500	31.9500	28.3000	25.3000	27.7000	33.4000	37.0000	31.2000	25.6000
5/29/2018	20.2000	19.5500	19.6500	27.8000	31.6500	28.0500	25.0500	27.4500	33.1000	36.7000	30.9500	25.4000
5/30/2018	20.2000	19.5500	19.6500	27.8000	31.6500	28.0500	25.0500	27.4500	33.1000	36.6500	30.9000	25.3500
5/31/2018	20.2500	19.6000	19.7000	27.8500	31.7000	28.1000	25.1000	27.5000	33.1500	36.7000	30.9500	25.4000
6/1/2018	20.3000	19.6500	19.7500	27.9000	31.7500	28.1500	25.1500	27.5500	33.2000	36.7500	31.0000	25.4500
6/4/2018	20.2500	19.6000	19.7000	27.8500	31.7000	28.1000	25.1000	27.5000	33.1500	36.7000	30.9500	25.4500
6/5/2018	20.2500	19.6000	19.7000	27.8500	31.6500	28.1000	25.1000	27.5000	33.1000	36.6500	30.9500	25.4500
6/6/2018	20.6000	19.9500	20.0500	28.3500	32.2000	28.6000	25.5500	28.0000	33.7000	37.2000	31.4000	25.8500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/4

Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
6/7/2018	20.3500	19.7500	19.8500	28.0500	31.8500	28.3000	25.2500	27.7000	33.3000	36.8500	31.1000	25.6000
6/8/2018	20.2500	19.6500	19.7500	27.9500	31.7000	28.1500	25.1500	27.6000	33.1500	36.7000	30.9500	25.5000
6/11/2018	20.2000	19.6500	19.7500	27.9000	31.6500	28.1000	25.1000	27.5500	33.1000	36.6500	30.9000	25.5000
6/12/2018	20.2500	19.7000	19.8000	27.9500	31.7000	28.1500	25.1500	27.6000	33.1500	36.7000	30.9500	25.5500
6/13/2018	20.0000	19.4500	19.5500	27.6000	31.3000	27.8000	24.8500	27.2500	32.7500	36.4000	30.7000	25.3500
6/14/2018	19.9000	19.3500	19.4500	27.4500	31.1000	27.6500	24.7000	27.1000	32.5500	36.2000	30.5500	25.2000
6/15/2018	19.9000	19.3500	19.4500	27.4500	31.1000	27.6500	24.7000	27.1000	32.5500	36.2000	30.5500	25.2000
6/18/2018	19.9000	19.3500	19.4500	27.4500	31.1000	27.6500	24.7000	27.1000	32.5500	36.2000	30.5500	25.2000
6/19/2018	19.9500	19.4000	19.5000	27.5000	31.1500	27.7000	24.7500	27.1500	32.6000	36.2500	30.6000	25.2500
6/20/2018	20.0000	19.4500	19.5500	27.5500	31.2000	27.7500	24.8000	27.2000	32.6500	36.3000	30.6500	25.3000
6/21/2018	20.0000	19.4500	19.5500	27.5500	31.2000	27.7500	24.8000	27.2000	32.6500	36.3000	30.6500	25.3000
6/22/2018	19.7500	19.2000	19.3000	27.2500	30.8500	27.4500	24.5000	26.9000	32.2500	35.9000	30.3500	25.0500
6/25/2018	19.6000	19.0500	19.1500	27.0500	30.6000	27.2500	24.3000	26.7000	32.0000	35.7000	30.2000	24.9500
6/26/2018	19.6500	19.1000	19.2000	27.1500	30.7000	27.3500	24.4000	26.8000	32.1000	35.8000	30.3000	25.0500
6/27/2018	19.7500	19.2000	19.3000	27.3000	30.8500	27.5000	24.5500	26.9500	32.2500	35.9500	30.4500	25.1500
6/28/2018	19.7500	19.2000	19.3000	27.3000	30.8500	27.5000	24.5500	26.9500	32.2500	36.0500	30.5500	25.2500
6/29/2018	19.6500	19.1000	19.2000	27.1500	30.7000	27.3500	24.4500	26.8000	32.1000	35.9500	30.4500	25.1500
7/2/2018	19.6500	19.1000	19.2000	27.1000	30.6500	27.3000	24.4000	26.7500	32.0500	35.9000	30.4000	25.1500
7/3/2018	19.8000	19.2000	19.3000	27.3000	30.8500	27.5000	24.5500	26.9000	32.2500	36.1500	30.6000	25.3000
7/5/2018	19.7500	19.1500	19.2500	27.2000	30.7500	27.4000	24.4500	26.8000	32.1500	36.0500	30.5000	25.2000
7/6/2018	19.8000	19.2000	19.3000	27.2500	30.8000	27.4500	24.5000	26.8500	32.2000	36.1000	30.5500	25.2500
7/9/2018	19.7000	19.1000	19.2000	27.1500	30.6500	27.3500	24.4000	26.7500	32.0500	35.9500	30.4500	25.1500
7/10/2018	19.8000	19.2000	19.3000	27.3000	30.8000	27.5000	24.5500	26.9000	32.2500	36.0000	30.5000	25.2000
7/11/2018	19.8500	19.2500	19.3500	27.3500	30.8500	27.5500	24.6000	26.9500	32.3000	36.1000	30.5500	25.2500
7/12/2018	20.0000	19.4000	19.5000	27.5500	31.1000	27.7500	24.8000	27.1500	32.5500	36.2000	30.6500	25.3000
7/13/2018	20.2500	19.6500	19.7500	27.9000	31.5000	28.1000	25.1500	27.5000	33.0000	36.3500	30.8000	25.4000
7/16/2018	20.2500	19.6500	19.7500	27.9000	31.5000	28.1000	25.1500	27.5000	33.0000	36.3500	30.8000	25.4000
7/17/2018	20.3000	19.7000	19.8000	27.9500	31.6000	28.1500	25.2000	27.5500	33.1000	36.5000	30.9000	25.5000
7/18/2018	20.3500	19.7500	19.8500	28.0000	31.7000	28.2000	25.2500	27.6000	33.2000	36.4500	30.8500	25.4500
7/19/2018	20.3500	19.7500	19.8500	28.0000	31.7000	28.2000	25.2500	27.6000	33.2000	36.4000	30.8000	25.4500
7/20/2018	20.5000	19.9000	20.0000	28.2000	31.9500	28.4500	25.4500	27.8000	33.4500	36.5000	30.8500	25.5000
7/23/2018	20.5500	19.9500	20.0500	28.3000	32.0500	28.5500	25.5000	27.9000	33.5500	36.4500	30.8000	25.4500
7/24/2018	20.4500	19.8500	19.9500	28.1500	31.8500	28.4000	25.3500	27.7500	33.3500	36.2500	30.6500	25.3000
7/25/2018	20.6500	20.0500	20.1500	28.4500	32.2000	28.7000	25.6000	28.0500	33.7000	36.5500	30.9000	25.5000
7/26/2018	20.7000	20.1000	20.2000	28.5500	32.3000	28.8000	25.7000	28.1500	33.8000	36.7000	31.0500	25.6000
7/27/2018	20.5500	19.9500	20.0500	28.9000	32.7000	29.1500	25.5000	27.9500	33.5500	36.6500	31.0000	25.5500
7/30/2018	20.5000	19.9000	20.0000	29.0000	32.8500	29.2500	25.4500	27.8500	33.4500	36.6000	31.0000	25.5500
7/31/2018	20.2500	19.7000	19.8000	29.3500	33.2500	29.6000	25.1500	27.5500	33.1000	36.5500	31.0000	25.5500
8/1/2018	20.5000	19.9500	20.0500	29.7000	33.6500	29.9500	25.4500	27.8500	33.5000	36.9500	31.3500	25.8500
8/2/2018	20.6500	20.1000	20.2000	29.9500	33.9000	30.2000	25.6500	28.0500	33.7500	37.2000	31.6000	26.0500
8/3/2018	20.8000	20.2500	20.3500	30.1500	34.1000	30.4000	25.8000	28.2500	33.9500	37.2000	31.6000	26.0500
8/6/2018	20.5500	20.0000	20.1000	29.8000	33.7000	30.0500	25.5000	27.9500	33.5500	36.8500	31.3000	25.8000
8/7/2018	20.4000	19.8500	19.9500	30.1000	34.0500	30.3500	25.3500	27.7500	33.3500	36.7500	31.2500	25.7500
8/8/2018	19.5500	19.0500	19.1500	33.6500	38.1000	33.9500	24.3000	26.6000	31.9500	37.2500	31.6500	26.1000
8/9/2018	18.3000	17.8500	17.9000	36.5000	41.3500	36.8500	22.7500	24.9000	29.9000	37.2000	31.6000	26.0500
8/10/2018	18.4000	17.9500	18.0000	36.7000	41.5500	37.0500	22.8500	25.0500	30.0500	37.1500	31.5500	26.0000
8/13/2018	18.4000	17.9500	18.0000	36.7500	41.6000	37.1000	22.8500	25.1000	30.1000	37.2000	31.6000	26.0000
8/14/2018	18.2000	17.8000	17.8500	36.4000	41.2000	36.7500	22.6500	24.8500	29.8000	36.8500	31.3000	25.7500
8/15/2018	18.0000	17.6000	17.6500	35.9500	40.7000	36.3000	22.3500	24.5500	29.4500	36.4500	30.9500	25.5000
8/16/2018	17.9000	17.5000	17.5500	36.2500	41.0500	36.6000	22.2000	24.4000	29.3000	36.4500	30.9500	25.5000
8/17/2018	17.6500	17.2500	17.3000	35.7000	40.4500	36.0500	21.8500	24.0500	28.8500	36.1000	30.6500	25.2500
8/20/2018	17.7500	17.3500	17.4000	35.8500	40.6500	36.2000	21.9500	24.1500	29.0000	35.8000	30.3500	25.0000
8/21/2018	17.7000	17.3000	17.3500	35.7500	40.5500	36.1000	21.9000	24.1000	28.9500	35.4500	30.0500	24.7500
8/22/2018	17.8500	17.4500	17.5000	36.1000	40.9500	36.4500	22.1000	24.3500	29.2500	35.3000	29.9000	24.6500
8/23/2018	17.7000	17.3000	17.3500	35.8000	40.6000	36.1500	21.9000	24.1500	29.0000	35.1000	29.7500	24.5000
8/24/2018	17.6500	17.2500	17.3000	36.0500	40.8500	36.4000	21.8500	24.1000	28.9500	35.1500	29.8000	24.5500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/5

Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
8/27/2018	17.4500	17.0500	17.1000	35.6500	40.4000	36.0000	21.6000	23.8500	28.6500	34.8500	29.5500	24.3500
8/28/2018	17.5500	17.1500	17.2000	35.9000	40.6500	36.2500	21.7500	24.0000	28.8500	35.0000	29.7000	24.4500
8/29/2018	17.5000	17.1000	17.1500	35.7500	40.5000	36.1000	21.6500	23.9000	28.7500	34.7000	29.4500	24.2500
8/30/2018	17.6000	17.2000	17.2500	35.9000	40.7000	36.2500	21.7500	24.0000	28.9000	34.6500	29.4000	24.2000
8/31/2018	17.6000	17.2000	17.2500	35.8500	40.6500	36.2000	21.7500	24.0000	28.9000	34.6500	29.4000	24.2000
9/4/2018	17.6500	17.2500	17.3000	35.9000	40.7500	36.2500	21.8000	24.0500	28.9500	34.7000	29.4500	24.2500
9/5/2018	17.7500	17.3500	17.4000	36.2500	41.1500	36.6000	21.3500	23.6000	28.4000	34.3000	29.1000	23.9500
9/6/2018	18.0000	17.6000	17.6500	36.0000	40.9000	36.3500	21.2000	23.4500	28.2000	33.9500	28.8000	23.7000
9/7/2018	18.0000	17.6000	17.6500	35.9500	40.8500	36.3000	21.1500	23.4000	28.1500	33.7000	28.5500	23.5000
9/10/2018	17.9000	17.5000	17.5500	35.7500	40.6000	36.1000	21.0500	23.2500	28.0000	33.3000	28.2000	23.2000
9/11/2018	18.0000	17.6000	17.6500	35.9500	40.8000	36.3000	21.1500	23.3500	28.1500	33.4500	28.3500	23.3000
9/12/2018	18.1000	17.7000	17.7500	36.1500	41.0000	36.5000	21.2500	23.4500	28.3000	33.4500	28.3500	23.3000
9/13/2018	17.9500	17.5500	17.6000	36.1500	41.0000	36.5000	21.1000	23.2500	28.1000	33.2500	28.2000	23.1500
9/14/2018	17.9500	17.5500	17.6000	36.2500	41.1000	36.6000	21.1000	23.2500	28.1000	33.1500	28.1000	23.0500
9/17/2018	17.9500	17.5500	17.6000	36.7500	41.6500	37.1000	21.1000	23.2500	28.1500	32.9500	27.9500	22.9000
9/18/2018	17.9500	17.5500	17.6000	37.2000	42.1500	37.5500	21.1000	23.2500	28.2000	32.8000	27.8000	22.8000
9/19/2018	18.1000	17.7000	17.7500	37.4500	42.4500	37.8000	21.2500	23.4000	28.4000	32.9000	27.9000	22.8500
9/20/2018	18.6000	18.2000	18.2500	37.0500	42.0000	37.4000	21.8500	24.0500	29.2000	33.5000	28.4500	23.3000
9/21/2018	18.6500	18.2500	18.3000	37.2000	42.1500	37.5500	21.9000	24.1500	29.3000	33.4000	28.3500	23.2500
9/24/2018	18.7000	18.3000	18.3500	37.3000	42.2500	37.6500	21.9500	24.2000	29.3500	33.4500	28.4000	23.3000
9/25/2018	18.7500	18.3500	18.4000	37.5000	42.5000	37.8500	22.0500	24.3000	29.4500	33.6000	28.5000	23.4000
9/26/2018	18.9500	18.5500	18.6000	37.9000	42.9500	38.2500	22.3000	24.5500	29.7500	33.9000	28.7500	23.6000
9/27/2018	18.8000	18.4000	18.4500	37.6500	42.6500	38.0000	22.1000	24.3500	29.5500	33.8000	28.6500	23.5500
9/28/2018	18.6500	18.2500	18.3000	37.4000	42.3500	37.7500	21.9500	24.2000	29.3500	33.6500	28.5000	23.4500
10/1/2018	18.8500	18.4500	18.5000	37.7500	42.7500	38.1000	22.1500	24.4500	29.6500	34.0000	28.8000	23.7000
10/2/2018	19.0500	18.6500	18.7000	38.1000	43.1500	38.4500	22.3500	24.7000	29.9500	34.3500	29.1000	23.9500
10/3/2018	18.9000	18.5000	18.5500	38.0500	43.1000	38.4000	22.3500	24.7000	29.9500	34.3000	29.0500	23.9000
10/4/2018	18.9000	18.5000	18.5500	38.0500	43.1000	38.4000	22.3500	24.7000	29.9500	34.3000	29.0500	23.9000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/6

Mid-C HL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
Average HL	19.67	19.02	19.15	28.91	32.88	29.26	24.27	26.50	32.03	35.13	29.70	24.45
Max HL	21.05	20.25	20.40	38.10	43.15	38.45	26.25	28.35	34.55	37.25	31.65	26.10
Min HL	17.45	17.05	17.10	26.05	29.60	26.40	21.05	23.25	28.00	32.80	27.80	22.80
Spread	3.60	3.20	3.30	12.05	13.55	12.05	5.20	5.10	6.55	4.45	3.85	3.30

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/7

Mid-C LL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
10/4/2017	14.9500	12.2500	10.9000	18.5000	23.0000	23.2000	21.9500	24.4500	27.9500	27.9500	25.6000	21.1000
10/5/2017	15.1000	12.4000	11.0500	18.7000	23.2500	23.4000	22.1500	24.6500	28.2000	28.2000	25.8000	21.2500
10/6/2017	14.9500	12.2500	10.9000	18.5000	23.0000	23.2000	21.9500	24.4500	27.9500	27.9500	25.6000	21.1000
10/9/2017	14.9500	12.2500	10.9000	18.5000	23.0500	23.2000	21.9500	24.4500	28.0000	28.0000	25.6000	21.1000
10/10/2017	15.1000	12.4000	11.0500	18.7000	23.2500	23.4000	22.1000	24.6500	28.2000	28.2000	25.8000	21.2500
10/11/2017	15.0500	12.4000	11.0500	18.6500	23.1500	23.3000	21.9500	24.5000	28.0500	28.1500	25.7500	21.2000
10/12/2017	15.0500	12.4000	11.0500	18.6500	23.1000	23.3000	21.9500	24.5000	28.0000	28.1000	25.7500	21.2000
10/13/2017	14.9000	12.2500	10.9000	18.4500	22.9000	23.1000	21.8000	24.3000	27.7500	27.9000	25.5500	21.0500
10/16/2017	14.9500	12.3000	10.9500	18.5500	23.0000	23.2000	21.8500	24.3500	27.8500	28.0000	25.6000	21.1000
10/17/2017	15.0000	12.3500	11.0000	18.6000	23.1000	23.2500	21.9000	24.4000	27.9500	28.1000	25.6500	21.1500
10/18/2017	14.7500	12.1000	10.7500	18.3000	22.7500	22.9500	21.6000	24.1000	27.5500	27.7500	25.3500	20.9000
10/19/2017	14.8500	12.2000	10.8500	18.4500	22.9000	23.1000	21.7000	24.2500	27.7000	27.9000	25.5000	21.0000
10/20/2017	14.9000	12.2500	10.9000	18.5500	23.0000	23.2000	21.7500	24.3000	27.8000	28.0000	25.5500	21.0500
10/23/2017	15.0000	12.3000	10.9500	18.6500	23.1000	23.3000	21.8500	24.4000	27.9000	28.1000	25.6500	21.1500
10/24/2017	14.7500	12.1000	10.7500	18.3500	22.7000	22.9500	21.5000	24.0000	27.4500	28.0000	25.5500	21.0500
10/25/2017	14.7500	12.1000	10.7500	18.3500	22.7000	22.9500	21.5000	24.0000	27.4500	28.0000	25.5500	21.0500
10/26/2017	14.7500	12.1000	10.7500	18.4000	22.7500	23.0000	21.5500	24.0500	27.5000	28.0500	25.6000	21.0500
10/27/2017	14.5500	11.9000	10.5500	18.1500	22.4500	22.7500	21.3000	23.8000	27.2000	27.7500	25.3500	20.8500
10/30/2017	14.5500	11.9000	10.5500	18.1500	22.4500	22.7500	21.3000	23.8000	27.2000	27.7500	25.3500	20.8500
10/31/2017	14.4500	11.8000	10.4500	18.0000	22.3000	22.6000	21.2000	23.6500	27.0500	27.6000	25.2000	20.7500
11/1/2017	14.3000	11.7000	10.3500	17.8000	22.1000	22.4000	21.0500	23.5000	26.8500	27.4000	25.0500	20.6000
11/2/2017	14.2500	11.6500	10.3000	17.7500	22.0500	22.3500	21.0000	23.4500	26.8000	27.3500	25.0000	20.5500
11/3/2017	14.5500	11.9500	10.6000	18.2000	22.5500	22.8000	21.9000	24.4000	27.9500	27.8500	25.4000	20.9000
11/6/2017	14.9000	12.3000	10.9500	18.7000	23.1000	23.3000	22.3500	24.8500	28.5000	28.4000	25.8500	21.3000
11/7/2017	14.8000	12.2000	10.9000	18.5500	22.9500	23.1500	22.2000	24.6500	28.3000	28.1500	25.6000	21.1000
11/8/2017	14.5500	11.9500	10.6500	18.2000	22.5500	22.8000	21.9000	24.3000	27.9000	27.7500	25.2500	20.8000
11/9/2017	14.4000	11.8000	10.5000	18.0000	22.3500	22.6000	21.7500	24.1000	27.7000	27.5500	25.0500	20.6500
11/10/2017	14.3500	11.7500	10.4500	17.9000	22.2500	22.5000	21.7000	24.0000	27.6000	27.4500	24.9500	20.6000
11/13/2017	14.3500	11.7500	10.4500	17.9000	22.2500	22.5000	21.7000	24.0000	27.6000	27.4500	24.9500	20.6000
11/14/2017	14.4000	11.8000	10.5000	17.9500	22.3500	22.5500	21.7500	24.0500	27.7000	27.5500	25.0000	20.6500
11/15/2017	14.3000	11.7000	10.4000	17.8000	22.2000	22.4000	21.6000	23.9000	27.5000	27.4000	24.8500	20.5500
11/16/2017	14.3500	11.7000	10.4500	17.8500	22.2500	22.4500	21.6500	23.9500	27.5500	27.4500	24.9000	20.6000
11/17/2017	14.5000	11.8500	10.6000	18.0500	22.5000	22.6500	21.8500	24.1500	27.8000	27.7000	25.1000	20.7500
11/20/2017	14.4000	11.7500	10.5000	17.9500	22.4000	22.5500	21.7500	24.0500	27.6500	27.6000	25.0000	20.6500
11/21/2017	14.4000	11.7500	10.5000	17.9500	22.4000	22.5500	21.7500	24.0500	27.6500	27.8000	25.1500	20.8000
11/22/2017	14.3500	11.7000	10.4500	17.8500	22.3000	22.4500	21.7000	23.9500	27.5500	27.7000	25.0500	20.7500
11/24/2017	14.1500	11.5000	10.2500	17.5500	21.9500	22.1500	21.4500	23.6500	27.2000	27.3500	24.7500	20.5000
11/27/2017	14.5500	11.9000	10.6500	18.1500	22.6000	22.7500	22.0000	24.2000	27.9000	28.0000	25.3000	20.9500
11/29/2017	14.9000	12.2500	11.0000	18.6500	23.2000	23.3000	22.5000	24.7000	28.5500	28.6000	25.8000	21.3500
11/30/2017	14.8000	12.1500	10.9000	18.5000	23.0000	23.1500	22.3500	24.5500	28.3500	28.4000	25.6500	21.2000
12/1/2017	14.7000	12.0500	10.8000	18.3500	22.8500	23.0000	22.2500	24.4000	28.2000	28.2500	25.5000	21.1000
12/4/2017	14.4000	11.8000	10.5500	17.9500	22.4000	22.6000	21.9000	24.0500	27.7500	27.9500	25.2500	20.9000
12/5/2017	14.2500	11.6500	10.4000	17.7000	22.1500	22.4000	21.7000	23.8500	27.5000	27.6500	25.0000	20.7000
12/6/2017	14.2000	11.6000	10.3500	17.6500	22.0500	22.3000	21.6500	23.8000	27.4000	27.5500	24.9500	20.6500
12/7/2017	13.9000	11.3000	10.0500	17.2000	21.5500	21.8500	21.2500	23.3500	26.8500	27.0500	24.5000	20.3000
12/8/2017	13.9000	11.3000	10.0500	17.2000	21.5500	21.8500	21.2500	23.3500	26.8500	27.5500	24.9000	20.6500
12/11/2017	14.1000	11.5000	10.2500	17.5000	21.9000	22.1500	21.5000	23.6500	27.2000	27.9000	25.2000	20.9000
12/12/2017	14.3000	11.6500	10.4000	17.7500	22.2000	22.4500	21.8000	24.0000	27.6000	28.2500	25.5500	21.2000
12/13/2017	14.5000	11.7500	10.4500	17.9500	22.5000	22.8000	22.2000	24.4500	28.1000	28.0000	25.3000	21.0000
12/14/2017	14.3500	11.7000	10.4500	17.8000	22.3000	22.5000	21.8500	24.1000	27.7000	28.6000	25.8000	21.4000
12/15/2017	14.2000	11.5500	10.3000	17.6000	22.1000	22.3500	21.7000	23.9500	27.5000	28.4500	25.7000	21.3000
12/18/2017	14.6000	11.9500	10.7000	18.1500	22.7500	22.9500	22.2500	24.5500	28.2000	29.1000	26.2500	21.7500
12/19/2017	14.5500	11.9000	10.6000	18.0500	22.6500	22.8500	22.1500	24.4500	28.1000	29.0000	26.1500	21.7000
12/20/2017	14.3000	11.6500	10.3500	17.7000	22.2500	22.5000	21.8500	24.1000	27.7000	28.6000	25.8000	21.4000
12/21/2017	14.2500	11.6000	10.3000	17.6000	22.1500	22.4000	21.8000	24.0000	27.6000	28.5000	25.7000	21.3500
12/22/2017	14.3000	11.6500	10.3500	17.6500	22.2000	22.4500	21.8500	24.0500	27.6500	28.5500	25.7500	21.4000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
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Mid-C LL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
12/26/2017	14.3000	11.6500	10.3500	17.6500	22.2000	22.4500	21.8500	24.0500	27.6500	28.5500	25.7500	21.4000
12/27/2017	14.5000	11.8500	10.5500	17.9500	22.5000	22.7500	22.1000	24.3000	28.0000	28.8500	26.0000	21.6500
12/28/2017	15.1000	12.4000	11.1500	18.7500	23.4500	23.5500	22.8500	25.1000	28.9500	29.8000	26.8000	22.3000
12/29/2017	14.9000	12.2000	10.9500	18.5000	23.1500	23.3000	22.6000	24.8500	28.6500	29.6500	26.6500	22.2000
1/2/2018	14.8500	12.1500	10.9000	18.4500	23.1000	23.2500	22.5500	24.8000	28.6000	29.6000	26.6000	22.1500
1/3/2018	14.7500	12.0500	10.8000	18.3000	22.9000	23.1000	22.4000	24.6500	28.4000	29.4000	26.4500	22.0000
1/4/2018	14.5000	11.8000	10.5500	17.9500	22.5000	22.7500	22.1000	24.3000	28.0000	29.0500	26.1500	21.7500
1/5/2018	14.4500	11.7500	10.5000	17.9000	22.4500	22.7000	22.0500	24.2500	27.9500	29.0500	26.1500	21.7500
1/8/2018	14.1500	11.5000	10.2500	17.5000	22.0000	22.2500	21.6500	23.8000	27.4500	28.7500	25.9000	21.5500
1/9/2018	14.1500	11.5000	10.2500	17.5000	21.9500	22.2000	21.6000	23.7500	27.4000	28.7000	25.8500	21.5000
1/10/2018	14.0000	11.3500	10.1000	17.3000	21.7000	22.0000	21.4000	23.5500	27.1500	28.5000	25.6500	21.3500
1/11/2018	13.9000	11.2500	10.0000	17.2000	21.5500	21.8500	21.3000	23.4000	27.0000	28.3500	25.5000	21.2500
1/12/2018	13.8000	11.2000	9.9500	17.1000	21.4000	21.7000	21.1500	23.2000	26.8000	28.4000	25.5500	21.3000
1/16/2018	13.5500	10.9500	9.7000	16.8000	21.0500	21.3500	20.8500	22.9000	26.4000	28.0000	25.2500	21.0500
1/17/2018	13.5500	10.9500	9.7000	16.8000	21.0500	21.3500	20.8500	22.9000	26.4000	28.0000	25.2500	21.0500
1/18/2018	13.6500	11.0500	9.8000	16.9500	21.2000	21.5000	20.9500	23.0500	26.5500	28.2000	25.4000	21.2000
1/19/2018	13.6500	11.0500	9.8000	16.9500	21.2000	21.5000	20.9500	23.0500	26.5500	28.2000	25.4000	21.2000
1/22/2018	13.7000	11.1000	9.8500	17.0000	21.2500	21.5500	21.0000	23.1000	26.6000	28.3000	25.5000	21.3000
1/23/2018	13.8000	11.2000	9.9500	17.1500	21.4000	21.7000	21.1500	23.2500	26.8000	28.4500	25.6500	21.4000
1/24/2018	13.9000	11.3000	10.0500	17.3000	21.6000	21.8500	21.3000	23.4000	27.0000	28.6500	25.8000	21.5500
1/25/2018	13.8500	11.2500	10.0000	17.2000	21.5000	21.7500	21.2500	23.3000	26.9000	28.5500	25.7000	21.5000
1/26/2018	13.8500	11.2500	10.0000	17.2500	21.5500	21.8000	21.3000	23.3500	26.9500	28.6000	25.7500	21.5500
1/29/2018	13.8500	11.2500	10.0000	17.2500	21.5500	21.8000	21.3000	23.3500	26.9500	28.6000	25.7500	21.5500
1/30/2018	13.7000	11.1000	9.8500	17.0500	21.3000	21.6000	21.1000	23.1500	26.7000	28.3500	25.5500	21.3500
1/31/2018	13.7000	11.1000	9.8500	17.0000	21.2500	21.5500	21.0500	23.1000	26.6500	28.3000	25.5000	21.3000
2/1/2018	13.6500	11.0500	9.8000	16.9000	21.1500	21.4500	20.9500	23.0000	26.5500	28.2000	25.4000	21.2000
2/2/2018	13.6000	11.0000	9.7500	16.8500	21.1000	21.4000	20.9000	22.9500	26.5000	28.2000	25.4000	21.2000
2/5/2018	13.5000	10.9000	9.6500	16.7000	20.9000	21.2500	20.7500	22.8000	26.3000	28.0000	25.2500	21.0500
2/6/2018	13.4000	10.8000	9.5500	16.5500	20.7500	21.1500	20.7000	22.7000	26.2000	27.9500	25.2500	21.0500
2/7/2018	13.4000	10.8000	9.5500	16.5500	20.7500	21.1500	20.7000	22.7000	26.2000	27.9500	25.2500	21.0500
2/8/2018	13.2500	10.6500	9.4000	16.3500	20.5500	20.9500	20.5000	22.5000	25.9500	27.7000	25.0500	20.8500
2/9/2018	13.1000	10.5000	9.2500	16.1000	20.3000	20.7000	20.3000	22.2500	25.6500	27.5500	24.9000	20.7500
2/12/2018	13.1000	10.5000	9.2500	16.1000	20.3000	20.7000	20.3000	22.2500	25.6500	27.7000	25.0000	20.8500
2/13/2018	13.1000	10.5000	9.2500	16.1000	20.3500	20.7500	20.3500	22.3000	25.7000	27.8500	25.1500	20.9500
2/14/2018	13.1000	10.5000	9.2500	16.1000	20.3500	20.7500	20.3500	22.2500	25.6500	27.9500	25.2500	21.0000
2/15/2018	13.2000	10.6000	9.3000	16.2500	20.5000	20.9000	20.5000	22.4500	25.9000	28.2500	25.5000	21.2000
2/16/2018	13.2500	10.6500	9.3500	16.3500	20.6000	21.0000	20.5500	22.5000	26.0000	28.3500	25.6000	21.2500
2/20/2018	13.1500	10.5500	9.2500	16.2000	20.4500	20.8500	20.4000	22.3500	25.8000	28.1000	25.4000	21.0500
2/21/2018	13.4000	10.8000	9.5000	16.5500	20.8500	21.2500	20.7500	22.7000	26.2500	28.5500	25.7500	21.3500
2/22/2018	13.4500	10.8500	9.5500	16.6000	20.9000	21.3000	20.8000	22.7500	26.3000	28.6000	25.8000	21.4000
2/23/2018	13.4500	10.8500	9.5500	16.6000	20.9000	21.3500	20.8500	22.8000	26.3500	28.5000	25.7000	21.3000
2/26/2018	13.5500	10.9500	9.6500	16.7000	21.0000	21.4500	20.9500	22.9000	26.5000	28.6500	25.8000	21.4000
2/27/2018	13.5500	10.9500	9.6500	16.7000	21.0000	21.4500	20.9500	22.9000	26.5000	28.7000	25.8000	21.4000
2/28/2018	13.5000	10.9000	9.6000	16.6500	20.9500	21.4000	20.9000	22.8500	26.4500	28.6500	25.7500	21.3500
3/1/2018	13.6000	11.0000	9.7000	16.8000	21.1000	21.5500	21.0500	23.0000	26.6500	28.8000	25.9000	21.4500
3/2/2018	13.6500	11.0500	9.7500	16.8500	21.2000	21.6000	21.1000	23.0500	26.7500	28.9000	25.9500	21.5000
3/5/2018	13.6500	11.0500	9.7500	16.8000	21.1500	21.5500	21.0500	23.0000	26.7000	28.8000	25.9000	21.4500
3/6/2018	13.7000	11.1000	9.8000	16.9000	21.2500	21.6500	21.1000	23.1000	26.8000	28.9000	26.0000	21.5000
3/7/2018	13.8000	11.2000	9.9000	17.0000	21.4000	21.7500	21.2000	23.2000	26.9500	29.0500	26.1000	21.6000
3/8/2018	13.6500	11.0500	9.7500	16.8000	21.2000	21.5500	21.0500	23.0000	26.7500	28.8500	25.9000	21.4500
3/9/2018	13.6000	11.0500	9.7500	16.7500	21.1000	21.4500	20.9000	22.8500	26.6000	28.8000	25.8000	21.4000
3/12/2018	13.5500	11.0000	9.7000	16.6500	21.0000	21.3500	20.8000	22.7500	26.5000	28.7500	25.7500	21.3500
3/13/2018	13.6000	11.0000	9.7000	16.7000	21.0500	21.4000	20.8500	22.8000	26.5500	28.8000	25.8000	21.4000
3/14/2018	13.7000	11.1000	9.8000	16.8500	21.2000	21.5500	21.0000	22.9500	26.7500	29.0000	25.9500	21.5500
3/15/2018	13.7000	11.1000	9.8000	16.8500	21.2000	21.5500	21.0000	22.9500	26.7500	29.0000	25.9500	21.5500
3/16/2018	13.8000	11.2000	9.9000	17.0000	21.3500	21.7000	21.1000	23.1000	26.9000	29.1500	26.1000	21.6500

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
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Idaho Power/102
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Mid-C LL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
3/19/2018	13.7000	11.1500	9.8500	16.9000	21.2500	21.6000	21.0000	23.0000	26.7500	29.0500	26.0000	21.5500
3/20/2018	13.4500	10.9000	9.6000	16.5500	20.8500	21.2500	20.7000	22.6500	26.3500	28.8000	25.7500	21.3500
3/21/2018	13.5500	10.9500	9.7000	16.6500	20.9500	21.3500	20.8000	22.7500	26.5000	29.1500	26.0500	21.6000
3/22/2018	13.5000	10.9000	9.6500	16.6000	20.9000	21.3000	20.7500	22.7000	26.4500	29.1000	26.0000	21.5500
3/23/2018	13.6500	11.0500	9.8000	16.8000	21.1000	21.5000	20.9000	22.9000	26.6500	29.3000	26.2000	21.7000
3/26/2018	13.6500	11.0500	9.8000	16.8000	21.1000	21.5000	20.9000	22.9000	26.6500	29.3000	26.2000	21.7000
3/27/2018	13.6000	11.0500	9.8000	16.7500	21.0500	21.4500	20.8500	22.8500	26.6000	29.3500	26.2500	21.7000
3/28/2018	13.6000	11.0500	9.8000	16.7000	21.0000	21.4000	20.8000	22.8000	26.5500	29.3000	26.2000	21.6500
3/29/2018	13.6000	11.0500	9.8000	16.7500	21.0500	21.4500	20.8000	22.8500	26.6000	29.3500	26.2500	21.6500
4/2/2018	13.6000	11.0500	9.8000	16.7500	21.0500	21.4500	20.8000	22.8500	26.6000	29.3500	26.2500	21.6500
4/3/2018	13.7000	11.1500	9.9000	16.9000	21.2000	21.5500	20.9000	22.9500	26.7000	29.6000	26.4500	21.8500
4/4/2018	13.6500	11.1500	9.9000	16.8500	21.1000	21.4500	20.8000	22.8000	26.5500	29.6000	26.4500	21.8500
4/5/2018	13.6000	11.1000	9.8500	16.8000	21.0500	21.4000	20.7500	22.7500	26.5000	29.5500	26.4000	21.8000
4/6/2018	13.5500	11.0500	9.8000	16.7500	21.0000	21.3500	20.7000	22.7000	26.4500	29.5000	26.3500	21.7500
4/9/2018	13.6000	11.1000	9.8500	16.8000	21.0500	21.4000	20.7500	22.7500	26.5000	29.5500	26.4000	21.8000
4/10/2018	13.4500	10.9500	9.7000	16.6000	20.8000	21.1500	20.5500	22.5500	26.2500	29.3000	26.2000	21.6000
4/11/2018	13.5000	11.0000	9.7500	16.6500	20.8500	21.2000	20.6000	22.6000	26.3000	29.3500	26.2500	21.6500
4/12/2018	13.4500	10.9500	9.7000	16.6000	20.8000	21.1500	20.5500	22.5500	26.2500	29.3000	26.2000	21.6000
4/13/2018	13.4000	10.9000	9.6500	16.5500	20.7500	21.1000	20.5000	22.5000	26.2000	29.2500	26.1500	21.5500
4/16/2018	13.4000	10.9000	9.6500	16.5500	20.7500	21.1000	20.5000	22.5000	26.2000	29.2500	26.1500	21.5500
4/17/2018	13.4500	10.9500	9.7000	16.6000	20.8000	21.1500	20.5500	22.5500	26.2500	29.3000	26.2000	21.6000
4/18/2018	13.5500	11.0500	9.8000	16.7500	21.0000	21.3000	20.7000	22.7000	26.4500	29.5000	26.3500	21.7500
4/19/2018	13.4500	10.9000	9.6000	16.1500	20.3000	20.6500	20.1000	22.0500	25.7000	28.7500	25.7000	21.2500
4/20/2018	13.4500	10.9000	9.6000	16.1500	20.3000	20.6500	20.1000	22.0500	25.7000	28.7500	25.7000	21.2500
4/23/2018	13.5000	10.9500	9.6500	16.2500	20.4000	20.7500	20.2000	22.1500	25.8500	28.8500	25.8000	21.3500
4/24/2018	13.5000	10.9500	9.6000	16.2000	20.4000	20.7500	20.2000	22.1500	25.8500	28.8500	25.8000	21.3500
4/25/2018	13.6000	11.0000	9.6500	16.3000	20.5000	20.8500	20.3000	22.2500	26.0000	28.9500	25.9000	21.4500
4/26/2018	13.6000	11.0000	9.6500	16.3000	20.5500	20.8500	20.3000	22.2500	26.0500	29.0000	25.9000	21.4500
4/27/2018	13.5000	10.9000	9.5500	16.2000	20.4000	20.7000	20.2000	22.1500	25.9000	28.8500	25.8000	21.3500
4/30/2018	13.6000	11.0000	9.6500	16.3500	20.6000	20.8500	20.3500	22.3000	26.1000	29.0500	25.9500	21.5000
5/1/2018	13.8000	11.1500	9.8000	16.6000	20.9000	21.1000	20.5500	22.5500	26.4000	29.3500	26.2000	21.7000
5/2/2018	14.6500	11.8500	10.4000	16.7000	21.0500	21.2000	20.6500	22.6500	26.5500	29.5000	26.3000	21.8000
5/3/2018	14.4000	11.6000	10.1500	16.3500	20.6500	20.8500	20.3500	22.3000	26.1500	29.1000	25.9500	21.5000
5/4/2018	14.3500	11.5500	10.1000	16.3000	20.5500	20.8000	20.3000	22.2500	26.0500	29.0000	25.9000	21.4500
5/7/2018	14.3500	11.5500	10.1000	16.3000	20.5500	20.8000	20.3000	22.2500	26.0500	29.0000	25.9000	21.4500
5/8/2018	14.2500	11.4500	10.0000	16.1500	20.4000	20.7000	20.2000	22.1500	25.9500	28.9000	25.8000	21.4000
5/9/2018	14.3500	11.6000	10.1500	16.3500	20.6000	20.8500	20.3000	22.3000	26.1000	29.0500	25.9500	21.5000
5/10/2018	14.4500	11.7000	10.2500	16.5000	20.7500	21.0000	20.4500	22.4500	26.2500	29.2000	26.1000	21.6000
5/11/2018	14.6000	11.8500	10.4000	16.7000	20.9500	21.2000	20.6000	22.6500	26.5000	29.4000	26.3000	21.7500
5/14/2018	14.6000	11.8500	10.4000	16.7000	20.9500	21.2000	20.5500	22.6000	26.4500	29.4000	26.2500	21.7500
5/15/2018	14.6000	11.8500	10.4000	16.6500	20.9000	21.1500	20.5000	22.5500	26.4000	29.3500	26.2000	21.7500
5/16/2018	14.7000	11.9500	10.5000	16.7500	21.0500	21.2500	20.6000	22.6500	26.5500	29.4500	26.3000	21.8500
5/17/2018	14.8000	12.0500	10.6000	16.9000	21.2500	21.4000	20.7500	22.8000	26.7500	29.6500	26.4500	22.0000
5/18/2018	14.9000	12.1500	10.7000	17.0500	21.4000	21.5500	20.9000	22.9500	26.9000	29.6500	26.4500	22.0000
5/21/2018	14.9000	12.1500	10.7000	17.0500	21.4000	21.5500	20.9000	22.9500	26.9000	29.6500	26.4500	22.0000
5/22/2018	14.7500	12.0500	10.6500	16.9000	21.2000	21.3000	20.6500	22.6500	26.6000	29.3500	26.1500	21.7500
5/23/2018	14.7500	12.0500	10.6500	16.9000	21.2000	21.3000	20.6500	22.6500	26.6000	29.3500	26.1500	21.7500
5/24/2018	14.7000	12.0000	10.6500	16.8500	21.1500	21.2500	20.6000	22.6000	26.5500	29.3000	26.1000	21.7000
5/25/2018	14.8000	12.1000	10.7500	17.0000	21.3000	21.4000	20.7500	22.7500	26.7000	29.4500	26.2500	21.8000
5/29/2018	14.6000	11.9000	10.5500	16.7500	21.0000	21.1500	20.5000	22.5000	26.4000	29.1500	26.0000	21.6000
5/30/2018	14.5500	11.8500	10.5000	16.7000	20.9500	21.1000	20.4500	22.4000	26.3000	29.0500	25.9500	21.5500
5/31/2018	14.6000	11.9000	10.5500	16.7500	21.0000	21.1500	20.5000	22.4500	26.3500	29.1000	26.0000	21.6000
6/1/2018	14.6500	11.9500	10.6000	16.8000	21.0500	21.2000	20.5500	22.5000	26.4000	29.1500	26.0500	21.6500
6/4/2018	14.6000	11.9000	10.5500	16.7500	21.0000	21.1500	20.5000	22.4500	26.3500	29.1000	26.0000	21.6000
6/5/2018	14.6000	11.9000	10.5500	16.7500	20.9500	21.1500	20.5000	22.4500	26.3000	29.0500	26.0000	21.6000
6/6/2018	14.9500	12.2500	10.9000	17.2500	21.5000	21.6500	20.9500	22.9500	26.9000	29.6000	26.4500	22.0000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/10

Mid-C LL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
6/7/2018	14.7000	12.0500	10.7000	16.9500	21.1500	21.3500	20.6500	22.6500	26.5000	29.2500	26.1500	21.7500
6/8/2018	14.5000	11.8500	10.5500	16.7000	20.8500	21.0500	20.3500	22.3500	26.1500	28.9000	25.8500	21.5000
6/11/2018	14.4500	11.8500	10.5500	16.6500	20.8000	21.0000	20.3000	22.3000	26.1000	28.8500	25.8000	21.5000
6/12/2018	14.3500	11.8000	10.5000	16.5500	20.7000	20.9000	20.2000	22.1500	25.9500	28.7000	25.6500	21.4000
6/13/2018	14.6500	12.0000	10.6500	16.8000	21.1000	21.3500	20.6500	22.6500	26.5000	29.3000	26.2000	21.8500
6/14/2018	14.5500	11.9000	10.5500	16.6500	20.9000	21.2000	20.5000	22.5000	26.3000	29.1000	26.0500	21.7000
6/15/2018	14.5500	11.9000	10.5500	16.6500	20.9000	21.2000	20.5000	22.5000	26.2500	29.1000	26.0500	21.7000
6/18/2018	14.5500	11.9000	10.5500	16.6500	20.9000	21.2000	20.5000	22.5000	26.2500	29.1000	26.0500	21.7000
6/19/2018	14.5000	11.8500	10.5500	16.6000	20.8500	21.1500	20.4500	22.4000	26.1500	29.0500	26.0000	21.6500
6/20/2018	14.5500	11.9000	10.6000	16.6500	20.9000	21.2000	20.5000	22.4500	26.2000	29.1000	26.0500	21.7000
6/21/2018	14.5500	11.9000	10.6000	16.6500	20.9000	21.2000	20.5000	22.4500	26.2000	29.1000	26.0500	21.7000
6/22/2018	14.4000	11.7500	10.4500	16.4000	20.6500	21.0000	20.3000	22.2500	25.9500	28.8500	25.8500	21.5500
6/25/2018	14.2500	11.6000	10.3000	16.2000	20.4500	20.8000	20.1500	22.0500	25.7500	28.6500	25.6500	21.4000
6/26/2018	14.3000	11.6500	10.3500	16.3000	20.5500	20.9000	20.2500	22.1500	25.8500	28.7500	25.7500	21.5000
6/27/2018	14.4000	11.7500	10.4500	16.4500	20.7000	21.0500	20.4000	22.3000	26.0000	28.9000	25.9000	21.6000
6/28/2018	14.4500	11.8000	10.5000	16.5000	20.8000	21.1500	20.5000	22.4000	26.1000	29.0000	25.9500	21.6500
6/29/2018	14.3500	11.7000	10.4000	16.3500	20.6500	21.0000	20.4000	22.2500	25.9500	28.8500	25.8000	21.5500
7/2/2018	14.3500	11.7000	10.4000	16.3000	20.6000	20.9500	20.3500	22.2000	25.9000	28.8000	25.7500	21.5500
7/3/2018	14.3000	11.6500	10.4000	16.2500	20.5000	20.8500	20.2500	22.1000	25.7500	28.7000	25.6500	21.5000
7/5/2018	14.2500	11.6000	10.3500	16.1500	20.4000	20.7500	20.1500	22.0000	25.6500	28.6000	25.5500	21.4000
7/6/2018	14.3000	11.6500	10.4000	16.2000	20.4500	20.8000	20.2000	22.0500	25.7000	28.6500	25.6000	21.4500
7/9/2018	14.1500	11.5500	10.3000	16.0500	20.2500	20.6000	20.0500	21.8500	25.5000	28.4500	25.4500	21.3000
7/10/2018	14.0000	11.4500	10.2000	15.9000	20.0500	20.4000	19.8000	21.6000	25.2000	28.3000	25.3000	21.2000
7/11/2018	13.8500	11.3500	10.1000	15.7500	19.8500	20.2000	19.6000	21.4000	24.9500	28.2500	25.2500	21.1500
7/12/2018	13.8000	11.3000	10.1000	15.7000	19.7500	20.1000	19.5000	21.2500	24.8000	28.1000	25.1000	21.0000
7/13/2018	13.9500	11.4500	10.3000	15.9500	20.0000	20.3000	19.7000	21.4500	25.0500	28.3000	25.2500	21.1500
7/16/2018	13.9500	11.4500	10.3000	15.9000	19.9500	20.2500	19.6500	21.4000	25.0000	28.3500	25.3000	21.1500
7/17/2018	14.0500	11.5000	10.3500	16.0000	20.0500	20.3500	19.7500	21.5000	25.1500	28.5500	25.4500	21.3000
7/18/2018	14.0000	11.5000	10.3500	16.0000	20.0000	20.3000	19.7000	21.4500	25.1000	28.6000	25.5000	21.3500
7/19/2018	13.8500	11.4000	10.2500	15.8500	19.8000	20.1000	19.5000	21.2500	24.8500	28.4500	25.3500	21.2500
7/20/2018	13.9000	11.4500	10.3000	15.9500	19.9000	20.1500	19.5500	21.3000	24.9000	28.6000	25.5000	21.4000
7/23/2018	13.8500	11.4500	10.3000	15.9000	19.8500	20.1000	19.5000	21.2500	24.8000	28.6000	25.5000	21.4000
7/24/2018	13.7500	11.3500	10.2000	15.7500	19.6500	19.9500	19.3500	21.1000	24.6000	28.4000	25.3000	21.2500
7/25/2018	13.8000	11.4500	10.3000	15.9000	19.7500	20.0500	19.4000	21.1500	24.7000	28.4000	25.3000	21.2500
7/26/2018	14.0000	11.6500	10.4500	16.1500	20.0500	20.3500	19.6500	21.4500	25.0500	28.7500	25.6000	21.5000
7/27/2018	13.7500	11.4000	10.2000	16.3500	20.3000	20.5500	19.3000	21.1000	24.6000	28.6500	25.5000	21.4000
7/30/2018	13.7000	11.3500	10.1500	16.4500	20.4500	20.6500	19.2500	21.0000	24.5000	28.6000	25.5000	21.4000
7/31/2018	13.6000	11.2000	10.0000	16.9500	21.0000	21.1500	19.1000	20.8500	24.3000	28.5000	25.4000	21.3500
8/1/2018	13.7500	11.3500	10.1500	17.2000	21.2500	21.3500	19.3000	21.0500	24.5500	28.6000	25.4500	21.4000
8/2/2018	13.9500	11.5500	10.3500	17.4500	21.5500	21.6500	19.5500	21.3000	24.8500	28.9000	25.7000	21.6000
8/3/2018	14.1000	11.7000	10.5000	17.6500	21.7500	21.8500	19.7000	21.5000	25.0500	28.9000	25.7000	21.6000
8/6/2018	13.7500	11.4000	10.2000	17.1500	21.2000	21.3500	19.2500	21.0000	24.4500	28.5500	25.4000	21.3500
8/7/2018	13.6000	11.2500	10.0500	17.4000	21.5000	21.6000	19.0500	20.7500	24.2000	28.4500	25.3000	21.3000
8/8/2018	13.0500	10.6500	9.4500	19.3000	23.5000	23.2000	18.4000	20.0500	23.3000	28.8500	25.6500	21.6000
8/9/2018	12.8500	10.2500	8.9500	19.5000	23.5500	22.9500	18.3500	20.0000	23.1500	29.4000	26.1000	22.0000
8/10/2018	12.9000	10.3000	9.0000	19.6000	23.6500	23.0000	18.3500	20.0000	23.2000	29.2000	25.9500	21.8500
8/13/2018	12.9000	10.3000	9.0000	19.6000	23.6000	22.9500	18.3000	19.9500	23.1500	29.1500	25.9000	21.8000
8/14/2018	12.8500	10.2000	8.9000	19.4000	23.4000	22.8000	18.2500	19.8500	23.0500	28.9500	25.7500	21.6500
8/15/2018	12.7000	10.0500	8.7500	19.1000	23.0500	22.5000	18.1000	19.7000	22.8500	28.7000	25.5500	21.5000
8/16/2018	12.5500	9.9000	8.6000	19.3000	23.3000	22.7000	17.8500	19.4500	22.5500	28.5500	25.4000	21.4000
8/17/2018	12.2000	9.6000	8.3000	18.6500	22.5500	22.0500	17.4500	19.0000	22.0000	28.1500	25.0500	21.1000
8/20/2018	12.1500	9.5500	8.3000	18.6000	22.5000	21.9500	17.3500	18.9000	21.9000	27.7500	24.7500	20.8500
8/21/2018	12.1000	9.5000	8.2500	18.4500	22.3500	21.8000	17.2500	18.8000	21.7500	27.3500	24.4000	20.5500
8/22/2018	12.3000	9.7000	8.4500	18.8000	22.7500	22.2000	17.5000	19.0500	22.0500	27.4500	24.5000	20.6500
8/23/2018	12.2000	9.6000	8.3500	18.5500	22.5000	21.9500	17.4000	18.9000	21.9000	27.3000	24.3500	20.5500
8/24/2018	12.3000	9.6500	8.4000	18.9500	23.0000	22.4000	17.5500	19.0500	22.1000	27.4000	24.4000	20.6000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/11

Mid-C LL	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
8/27/2018	12.3500	9.6500	8.3500	18.9000	23.0000	22.4000	17.6500	19.1500	22.2000	27.2000	24.2500	20.5000
8/28/2018	12.3500	9.7000	8.4000	19.0000	23.1000	22.5000	17.6500	19.1500	22.2000	26.9500	24.0500	20.3000
8/29/2018	12.4000	9.7500	8.4500	19.1000	23.2000	22.6000	17.7500	19.2500	22.3500	26.6000	23.7500	20.0500
8/30/2018	12.5000	9.8500	8.5500	19.3000	23.4500	22.8000	17.9000	19.4000	22.5000	26.5000	23.6500	20.0000
8/31/2018	12.5500	9.8500	8.5500	19.3500	23.5000	22.8500	17.9500	19.4500	22.5500	26.4500	23.6000	19.9500
9/4/2018	12.7000	10.0000	8.6500	19.6000	23.8000	23.1500	18.2000	19.7000	22.8500	26.4500	23.6000	19.9500
9/5/2018	12.8500	10.1500	8.7500	20.0000	24.2500	23.5500	17.8000	19.3000	22.3500	26.0000	23.2000	19.6500
9/6/2018	13.1000	10.4000	9.0000	19.7500	23.9500	23.3000	17.6500	19.1500	22.1500	25.6500	22.9000	19.4000
9/7/2018	13.0500	10.3500	8.9500	19.7000	23.8500	23.2500	17.6000	19.1000	22.1000	25.3500	22.6500	19.2000
9/10/2018	13.1000	10.3500	8.9500	19.7000	23.8500	23.2500	17.6500	19.1500	22.1500	25.0500	22.4000	19.0000
9/11/2018	13.2000	10.4500	9.0500	19.9000	24.0500	23.4500	17.7500	19.2500	22.3000	25.2000	22.5500	19.1000
9/12/2018	13.3500	10.6000	9.2000	20.2000	24.4000	23.8000	17.9500	19.5000	22.6000	25.3500	22.6500	19.2000
9/13/2018	13.2000	10.4500	9.0500	20.2000	24.4000	23.8000	17.8000	19.3500	22.4000	25.1500	22.5000	19.0500
9/14/2018	13.1500	10.4000	9.0000	20.2000	24.4000	23.8000	17.7500	19.3000	22.3000	25.3000	22.6500	19.1500
9/17/2018	13.1500	10.4000	9.0000	20.7000	24.9500	24.3000	17.7500	19.3000	22.3500	25.1000	22.5000	19.0000
9/18/2018	13.0500	10.3500	8.9500	20.7000	24.9000	24.2000	17.6000	19.1500	22.2000	25.2500	22.6500	19.1000
9/19/2018	13.0500	10.4000	9.0000	20.5000	24.6500	23.9000	17.6000	19.1500	22.2000	25.3500	22.7500	19.2000
9/20/2018	13.5500	10.9000	9.5000	20.1000	24.2000	23.5000	18.2000	19.8000	23.0000	25.9500	23.3000	19.6500
9/21/2018	13.6000	10.9500	9.5500	20.2500	24.3500	23.6500	18.2500	19.9000	23.1000	25.8500	23.2000	19.6000
9/24/2018	13.6000	10.9500	9.5500	20.3000	24.4000	23.7000	18.2500	19.9000	23.1000	25.9500	23.2500	19.6500
9/25/2018	13.6000	11.0000	9.6000	20.4500	24.5500	23.8500	18.2500	19.9000	23.1500	26.0000	23.3000	19.7000
9/26/2018	13.8000	11.2000	9.8000	20.8500	25.0000	24.2500	18.5000	20.1500	23.4500	26.3000	23.5500	19.9000
9/27/2018	13.5500	11.0000	9.6000	20.3500	24.4500	23.7500	18.1500	19.8000	23.0500	25.8500	23.1500	19.5500
9/28/2018	13.4500	10.9000	9.4500	20.1000	24.1500	23.5000	18.0000	19.6500	22.8500	25.7500	23.1000	19.5000
10/1/2018	13.5500	11.0000	9.5500	20.3000	24.4000	23.7000	18.1000	19.7500	22.9500	25.8500	23.2000	19.5500
10/2/2018	13.1000	10.6500	9.3000	20.6500	24.8000	24.0500	18.3000	20.0000	23.2500	26.2000	23.5000	19.8000
10/3/2018	12.8500	10.4000	9.0500	20.6500	24.8000	24.0500	18.7000	20.4500	23.7500	26.0500	23.3500	19.7000
10/4/2018	12.3500	10.0000	8.7000	20.7500	24.9000	24.1500	18.8500	20.6000	23.9000	26.0500	23.3500	19.7000

Mid-Columbia Heavy Load and Light Load Daily Forward Curves
 April 2020 - March 2021

Idaho Power/102
 Blackwell/12

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
Mid-C LL												
Average LL	13.92	11.31	10.01	17.51	21.78	21.91	20.43	22.42	25.99	28.29	25.41	21.15
Max LL	15.10	12.40	11.15	20.85	25.00	24.30	22.85	25.10	28.95	29.80	26.80	22.30
Min LL	12.10	9.50	8.25	15.70	19.65	19.95	17.25	18.80	21.75	25.05	22.40	19.00
Spread	3.00	2.90	2.90	5.15	5.35	4.35	5.60	6.30	7.20	4.75	4.40	3.30

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 31, 2018

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

2012Q1	185.8300
2012Q2	188.8300
2012Q3	196.8700
2012Q4	190.4000
2013Q1	189.1700
2013Q2	193.1700
2013Q3	199.3000
2013Q4	191.7700
2014Q1	195.7300
2014Q2	200.8300
2014Q3	208.3000
2014Q4	199.0000
2015Q1	200.8300
2015Q2	203.5700
2015Q3	212.0300
2015Q4	199.3000
2016Q1	196.3700
2016Q2	199.7700
2016Q3	209.5700
2016Q4	200.0300
2017Q1	205.5700
2017Q2	211.1000
2017Q3	218.4000
2017Q4	208.4700
2018Q1	210.6300
2018Q2	214.6300
2018Q3	221.8000
2018Q4	213.4900
2019Q1	215.4200
2019Q2	222.1100
2019Q3	231.8000
2019Q4	223.0100
2020Q1	224.4200
2020Q2	230.1300
2020Q3	238.4900
2020Q4	227.7700
2021Q1	227.8300
2021Q2	232.9600
2021Q3	241.5900
2021Q4	231.4800
2022Q1	232.6200
2022Q2	238.8500
2022Q3	248.3500
2022Q4	238.3100

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 31, 2018

IDAHO POWER COMPANY
Mid-C Forward Price Curves Discounted for Inflation
Used to Re-Price Purchased Power and Surplus Sales for the October Update (UE 195 Settlement Methodology)

<u>Line No.</u>		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
1	Forward Curve Prices												
2	Relevant Quarter	2020 Q2	2020 Q2	2020 Q2	2020 Q3	2020 Q3	2020 Q3	2020 Q4	2020 Q4	2020 Q4	2021 Q1	2021 Q1	2021 Q1
3	Deflator	2.3013	2.3013	2.3013	2.3849	2.3849	2.3849	2.2777	2.2777	2.2777	2.2783	2.2783	2.2783
4	Water Year	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
5	Relevant Quarter	2019 Q2	2019 Q2	2019 Q2	2019 Q3	2019 Q3	2019 Q3	2019 Q4	2019 Q4	2019 Q4	2020 Q1	2020 Q1	2020 Q1
6	Inflator	2.2211	2.2211	2.2211	2.3180	2.3180	2.3180	2.2301	2.2301	2.2301	2.2442	2.2442	2.2442
7	Average Prices	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
8	Mid-C HL	19.67	19.02	19.15	28.91	32.88	29.26	24.27	26.50	32.03	35.13	29.70	24.45
9	Mid-C LL	13.92	11.31	10.01	17.51	21.78	21.91	20.43	22.42	25.99	28.29	25.41	21.15
10	Inflation Adjusted	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
11	Mid-C HL	18.98	18.35	18.48	28.10	31.96	28.44	23.77	25.95	31.36	34.60	29.26	24.08
12	Mid-C LL	13.44	10.91	9.66	17.02	21.17	21.29	20.00	21.95	25.45	27.87	25.03	20.84
13	Difference	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
14	Mid-C HL	0.69	0.66	0.67	0.81	0.92	0.82	0.51	0.55	0.67	0.53	0.44	0.37
15	Mid-C LL	0.49	0.39	0.35	0.49	0.61	0.61	0.43	0.47	0.54	0.42	0.38	0.32
16	Reallocated Prices	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
17	HL Purchased Power												
18	103.9%	19.72	19.07	19.20	29.19	33.20	29.55	24.69	26.96	32.58	35.95	30.40	25.02
19	LL Purchased Power												
20	107.1%	14.39	11.69	10.35	18.23	22.67	22.80	21.42	23.51	27.25	29.85	26.81	22.32
21	HL Surplus Sales												
22	96.4%	18.30	17.69	17.82	27.09	30.80	27.41	22.91	25.01	30.23	33.35	28.21	23.21
23	LL Surplus Sales												
24	93.4%	12.55	10.19	9.02	15.90	19.77	19.89	18.68	20.50	23.77	26.03	23.38	19.46

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, 2019 – March 31, 2020
(Multiple Gas Prices – 90 Water Year Conditions)

October 31, 2018

IPCO NORMALIZED POWER SUPPLY EXPENSES FOR APRIL 1, 2019 -- MARCH 31, 2020 (Multiple Gas Prices/90 Hydro Year Conditions)
Repriced Using UE 195 Settlement Methodology - 2019 October Update
AVERAGE

Line No.		April	May	June	July	August	September	October	November	December	January	February	March	Annual
1	Hydroelectric Generation (MWh)	892,033.4	962,605.9	933,757.4	695,002.9	535,120.7	519,164.9	510,836.3	442,334.6	647,871.1	797,103.9	794,873.9	822,506.2	8,553,211.1
	Bridger													
2	Energy (MWh)	4,506.1	246.8	21,636.3	175,405.9	208,563.8	86,788.0	60,026.4	110,545.7	157,745.8	134,789.9	78,784.2	36,191.8	1,075,230.6
3	Expense (\$ x 1000)	\$ 375.7	\$ 219.1	\$ 987.7	\$ 6,384.3	\$ 7,543.7	\$ 3,310.4	\$ 2,397.0	\$ 4,193.1	\$ 5,768.0	\$ 5,001.6	\$ 3,054.4	\$ 1,538.7	\$ 40,773.8
	Boardman													
4	Energy (MWh)	7,013.3	3,951.2	10,926.9	33,299.2	37,712.5	27,206.7	22,262.4	26,374.4	31,328.6	28,045.6	20,704.9	17,005.8	265,831.5
5	Expense (\$ x 1000)	\$ 218.5	\$ 132.8	\$ 319.0	\$ 910.6	\$ 1,026.3	\$ 749.6	\$ 620.7	\$ 728.0	\$ 857.9	\$ 724.4	\$ 544.0	\$ 449.8	\$ 7,281.5
	Valmy													
6	Energy (MWh)	6,025.1	2,953.3	16,650.0	74,794.5	87,140.6	43,206.2	36,808.4	46,444.1	72,367.6	25,271.0	13,412.3	9,219.1	434,292.3
7	Expense (\$ x 1000)	\$ 525.7	\$ 422.5	\$ 842.0	\$ 2,565.7	\$ 2,924.7	\$ 1,648.4	\$ 1,461.2	\$ 1,747.6	\$ 2,499.5	\$ 1,129.6	\$ 766.0	\$ 632.9	\$ 17,165.7
	Langley Gulch													
8	Energy (MWh)	191,222.9	197,467.8	190,292.1	198,952.9	199,049.3	193,611.1	195,441.4	192,756.0	202,952.8	193,661.6	171,281.6	193,755.0	2,320,444.3
9	Expense (\$ x 1000)	\$ 2,611.7	\$ 2,607.2	\$ 2,528.4	\$ 3,276.2	\$ 3,249.4	\$ 3,130.2	\$ 3,307.6	\$ 3,747.5	\$ 5,006.9	\$ 4,461.5	\$ 3,653.6	\$ 3,480.9	\$ 41,061.2
	Danskin													
10	Energy (MWh)	37,565.7	41,924.0	88,012.6	123,234.4	146,973.0	99,690.6	66,039.8	29,429.4	6,766.0	4,125.8	5,810.9	14,472.3	664,044.6
11	Expense (\$ x 1000)	\$ 879.8	\$ 948.1	\$ 2,073.8	\$ 3,495.5	\$ 4,104.5	\$ 2,725.1	\$ 1,863.7	\$ 889.3	\$ 264.4	\$ 162.5	\$ 209.0	\$ 444.9	\$ 18,060.6
	Bennett Mountain													
12	Energy (MWh)	19,492.8	22,535.2	57,620.9	86,450.0	107,378.1	67,607.4	40,115.4	12,106.4	4,157.8	1,662.9	3,346.3	5,698.5	428,171.7
13	Expense (\$ x 1000)	\$ 461.8	\$ 513.6	\$ 1,343.9	\$ 2,424.3	\$ 2,956.1	\$ 1,850.8	\$ 1,140.6	\$ 364.5	\$ 161.8	\$ 68.2	\$ 125.1	\$ 177.2	\$ 11,587.9
14	Fixed Capacity Charge - Gas Transportation (\$ x 1000)	\$ 689.9	\$ 712.5	\$ 689.9	\$ 712.5	\$ 712.5	\$ 689.9	\$ 712.5	\$ 689.9	\$ 712.5	\$ 711.2	\$ 666.0	\$ 711.2	\$ 8,410.6
	Purchased Power (Excluding CSPP)													
15	Market Energy (MWh)	1,038.5	2,569.9	44,444.9	51,202.2	48,968.7	24,463.2	13,278.2	64,417.4	57,235.6	67,162.7	15,359.0	15,294.9	405,435.2
16	Elkhorn Wind Energy (MWh)	26,404.6	26,527.2	25,227.4	25,865.4	22,886.0	21,015.4	23,409.4	30,182.4	27,577.6	24,216.8	25,076.5	27,293.8	305,682.2
17	Neal Hot Springs Energy (MWh)	15,215.9	11,429.3	11,317.3	9,167.6	9,844.5	12,018.1	16,332.7	18,385.9	20,015.0	18,557.6	17,695.7	17,587.8	177,567.7
18	Raft River Geothermal Energy (MWh)	6,974.0	4,854.7	5,861.8	6,288.1	5,741.9	6,278.0	6,505.3	6,996.5	7,608.9	7,732.9	6,927.9	6,932.1	78,702.0
19	Total Energy Excl. CSPP (MWh)	49,633.0	45,381.1	86,851.5	92,523.3	87,441.1	63,774.7	59,525.6	119,982.2	112,437.1	117,669.9	65,059.2	67,108.6	967,387.0
20	Market Expense (\$ x 1000)	\$ 18.5	\$ 42.2	\$ 712.8	\$ 1,294.1	\$ 1,441.5	\$ 663.8	\$ 312.4	\$ 1,657.3	\$ 1,755.8	\$ 2,267.9	\$ 447.2	\$ 367.9	\$ 10,981.5
21	Elkhorn Wind Expense (\$ x 1000)	\$ 1,247.9	\$ 1,253.7	\$ 1,622.1	\$ 1,995.8	\$ 1,765.9	\$ 1,351.3	\$ 1,505.2	\$ 2,328.9	\$ 2,127.9	\$ 1,603.9	\$ 1,660.8	\$ 1,328.7	\$ 19,792.0
22	Neal Hot Springs Expense (\$ x 1000)	\$ 1,298.8	\$ 975.6	\$ 1,317.9	\$ 1,281.1	\$ 1,375.7	\$ 1,399.5	\$ 1,901.9	\$ 2,569.2	\$ 2,796.9	\$ 2,198.3	\$ 2,096.2	\$ 1,527.2	\$ 20,738.4
23	Raft River Geothermal Expense (\$ x 1000)	\$ 345.4	\$ 240.4	\$ 395.0	\$ 508.5	\$ 464.3	\$ 423.0	\$ 438.3	\$ 565.7	\$ 615.3	\$ 531.9	\$ 476.6	\$ 350.5	\$ 5,354.8
24	Total Expense Excl. CSPP (\$ x 1000)	\$ 2,910.6	\$ 2,511.9	\$ 4,047.7	\$ 5,079.4	\$ 5,047.4	\$ 3,837.6	\$ 4,157.9	\$ 7,121.2	\$ 7,295.9	\$ 6,602.1	\$ 4,680.8	\$ 3,574.2	\$ 56,866.6
	Surplus Sales													
25	Energy (MWh)	403,826.5	308,197.9	137,043.4	28,888.5	17,184.8	58,461.5	91,758.2	14,860.0	45,275.5	65,128.3	197,116.5	256,319.6	1,624,060.6
26	Revenue Including Transmission Costs (\$ x 1000)	\$ 6,524.2	\$ 4,591.0	\$ 1,992.2	\$ 661.9	\$ 458.7	\$ 1,438.5	\$ 1,957.5	\$ 346.7	\$ 1,259.5	\$ 1,994.4	\$ 5,205.0	\$ 5,591.5	\$ 32,021.0
27	Transmission Costs (\$ x 1000)	\$ 403.8	\$ 308.2	\$ 137.0	\$ 28.9	\$ 17.2	\$ 58.5	\$ 91.8	\$ 14.9	\$ 45.3	\$ 65.1	\$ 197.1	\$ 256.3	\$ 1,624.1
28	Revenue Excluding Transmission Costs (\$ x 1000)	\$ 6,120.4	\$ 4,282.8	\$ 1,855.1	\$ 633.0	\$ 441.5	\$ 1,380.0	\$ 1,865.8	\$ 331.9	\$ 1,214.3	\$ 1,929.2	\$ 5,007.9	\$ 5,335.1	\$ 30,397.0
29	Net Power Supply Expenses (\$ x 1000)	\$ 2,553.3	\$ 3,785.0	\$ 10,977.4	\$ 24,215.4	\$ 27,123.1	\$ 16,561.9	\$ 13,795.4	\$ 19,149.2	\$ 21,352.6	\$ 16,931.9	\$ 8,691.1	\$ 5,674.7	\$ 170,810.9
30	PURPA (\$ x 1000)	\$ 18,289.6	\$ 19,436.9	\$ 23,592.1	\$ 25,701.6	\$ 23,739.1	\$ 18,762.0	\$ 17,054.0	\$ 16,644.2	\$ 15,666.5	\$ 12,866.7	\$ 15,583.0	\$ 13,799.4	\$ 221,135.0
31	EIM Benefits													\$ 4,500.0
32	Total Net Power Supply Expenses (\$ x 1000)	\$ 20,842.9	\$ 23,221.9	\$ 34,569.4	\$ 49,917.1	\$ 50,862.2	\$ 35,323.9	\$ 30,849.4	\$ 35,793.3	\$ 37,019.1	\$ 29,798.5	\$ 24,274.1	\$ 19,474.0	\$ 387,445.9
33	Sales at Customer Level (In 000s MWh)	1,021.841	1,071.582	1,254.632	1,530.365	1,587.786	1,431.707	1,117.569	1,038.502	1,158.405	1,291.170	1,223.800	1,109.462	14,836.820
34	Hours in Month	720	744	720	744	744	720	744	721	744	744	696	743	8784
35	Unit Cost / MWh (for PCAM)	\$20.40	\$21.67	\$27.55	\$32.62	\$32.03	\$24.67	\$27.60	\$34.47	\$31.96	\$23.08	\$19.84	\$17.55	\$26.11
	Prices Used in Purchased Power & Surplus Sales Above:													
	Heavy Load													
36	Portion of Purchased Power considered HL Purchases	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%	64.25%
37	Purchased Power HL Price	\$19.72	\$19.07	\$19.20	\$29.19	\$33.20	\$29.55	\$24.69	\$26.96	\$32.58	\$35.95	\$30.40	\$25.02	
38	Portion of Surplus Sales considered HL Surplus Sales	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%	62.70%
39	Surplus Sales HL Price	\$18.30	\$17.69	\$17.82	\$27.09	\$30.80	\$27.41	\$22.91	\$25.01	\$30.23	\$33.35	\$28.21	\$23.21	
	Light Load													
40	Portion of Purchased Power considered LL Purchases	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%	35.75%
41	Purchased Power LL Price	\$14.39	\$11.69	\$10.35	\$18.23	\$22.67	\$22.80	\$21.42	\$23.51	\$27.25	\$29.85	\$26.81	\$22.32	
42	Portion of Surplus Sales considered LL Surplus Sales	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%	37.30%
43	Surplus Sales LL Price	\$12.55	\$10.19	\$9.02	\$15.90	\$19.77	\$19.89	\$18.68	\$20.50	\$23.77	\$26.03	\$23.38	\$19.46	

Idaho Power/106
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 Energy Imbalance Market Costs

October 31, 2018

**Idaho Power Company
2019 October Update
Oregon Jurisdictional EIM Revenue Requirement**

2019 Calendar Year Revenue Requirement

Capital Investment	\$349,278
ADIT	(\$9,104)
Accumulated Depreciation	(\$1,347)
Amortization of Other Plant	(\$39,583)
Net Rate Base	\$299,245
Return on Rate Base	
	\$23,212
O&M (On-going)	\$57,825
Depreciation	\$49,266
Taxes	(\$30,665)
Total Operating Expenses	\$76,426
Net-to-Gross Tax Multiplier	1.347
Total Revenue Requirement	\$134,175

Idaho Power/107
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 31, 2018

IDAHO POWER COMPANY
YEAR OVER YEAR DIFFERENCES IN AURORA DEVELOPED NPSE
2019 OCTOBER UPDATE

AURORA DEVELOPED NPSE RESULTS BEFORE MARKET ENERGY RE-PRICING				REPRICED USING FORWARD MARKET PRICES				DIFFERENCES			
GENERATION				GENERATION				GENERATION			
	A	B		C	D	E	F	G	H	I	J
Line No.	Resource Type	2018 October Update	2019 October Update	Resource Type	2018 October Update	2019 October Update		(B-A)	(E-C)	(C-A)	(E-B)
1	Hydro (MWh)	8,630,352	8,553,211	Hydro (MWh)	8,630,352	8,553,211	53%	(77,141)	(77,141)	-	-
2	Coal (MWh)	2,081,742	1,775,354	Coal (MWh)	2,081,742	1,775,354	13%	(306,388)	(306,388)	-	-
3	Natural Gas (MWh)	2,995,041	3,412,661	Natural Gas (MWh)	2,995,041	3,412,661	18%	417,619	417,619	-	-
4	Market Purchased Power (MWh)	475,402	405,435	Market Purchased Power (MWh)	475,402	405,435	3%	(69,967)	(69,967)	-	-
5	Purchased Power Agreements (MWh)	545,177	561,952	Purchased Power Agreements (MWh)	545,177	561,952	3%	16,775	16,775	-	-
6	PURPA (MWh)	2,905,539	3,016,404	PURPA (MWh)	2,905,539	3,016,404	19%	110,865	110,865	-	-
7	Surplus Sales (MWh)	1,392,165	1,624,061	Surplus Sales (MWh)	1,392,165	1,624,061	-9%	231,895	231,895	-	-
8	System Generation (MWh)	17,633,254	17,725,017	System Generation (MWh)	17,633,254	17,725,017					
9	System Load (MWh)	16,241,088	16,100,957	System Load (MWh)	16,241,088	16,100,957	100%	(140,131)	(140,131)	-	-
10	System Load (aMW)	1,854	1,833	System Load (aMW)	1,854	1,833		(21)	(21)	-	-
NET POWER SUPPLY EXPENSES				NET POWER SUPPLY EXPENSES				NET POWER SUPPLY EXPENSES			
	A	B		C	D	E	F	G	H	I	J
Line No.	Resource Type	2018 October Update	2019 October Update	Resource Type	2018 October Update	2019 October Update		(B-A)	(E-C)	(C-A)	(E-B)
11	Hydro (\$ x 1000)	\$ -	\$ -	Hydro (\$ x 1000)	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
12	Coal (\$ x 1000)	\$ 77,619.6	\$ 65,221.0	Coal (\$ x 1000)	\$ 77,619.6	\$ 65,221.0	20%	\$ (12,398.7)	\$ (12,398.7)	\$ -	\$ -
13	Natural Gas (\$ x 1000)	\$ 73,459.2	\$ 79,120.3	Natural Gas (\$ x 1000)	\$ 73,459.2	\$ 79,120.3	19%	\$ 5,661.1	\$ 5,661.1	\$ -	\$ -
14	Market Purchased Power (\$ x 1000)	\$ 15,753.4	\$ 13,348.6	Market Purchased Power (\$ x 1000)	\$ 12,141.6	\$ 10,981.5	3%	\$ (2,404.8)	\$ (1,160.2)	\$ (3,611.8)	\$ (2,367.2)
15	Purchased Power Agreements (\$ x 1000)	\$ 43,152.6	\$ 45,885.2	Purchased Power Agreements (\$ x 1000)	\$ 43,152.6	\$ 45,885.2	11%	\$ 2,732.6	\$ 2,732.6	\$ -	\$ -
16	PURPA (\$ x 1000)	\$ 217,207.2	\$ 221,135.0	PURPA (\$ x 1000)	\$ 217,207.2	\$ 221,135.0	55%	\$ 3,927.8	\$ 3,927.8	\$ -	\$ -
17	Surplus Sales (\$ x 1000)	\$ (31,329.9)	\$ (36,106.3)	Surplus Sales (\$ x 1000)	\$ (26,398.3)	\$ (30,397.0)	-7%	\$ (4,776.4)	\$ (3,998.7)	\$ 4,931.6	\$ 5,709.3
18	EIM Benefits	\$ (5,500.0)	\$ (4,500.0)	EIM Benefits	\$ (5,500.0)	\$ (4,500.0)	-1%	\$ 1,000.0	\$ 1,000.0	\$ -	\$ -
19	Total System (\$ x 1000)	\$ 390,362.1	\$ 384,103.8	Total System (\$ x 1000)	\$ 391,681.9	\$ 387,445.9	100%	\$ (6,258.3)	\$ (4,236.0)	\$ 1,319.8	\$ 3,342.1

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 Rate Spread for APCU October Update

October 31, 2018

Idaho Power Company
Stipulated Revenue Spread
2019 October Update

Line No.	2018 October Update Oregon Jurisdictional Share of Base NPSE = \$26.11/MWh x 680,879.846	
1	MWhs =	\$17,777,773
2	Oregon Allocated EIM Costs	\$134,175
3	Proposed October Update APCU Revenue Requirement	\$17,911,948

	TOTAL SYSTEM	RESIDENTIAL (1)	GEN SRV (7)	GEN SRV SECONDARY (9-S)	GEN SRV PRIMARY (9-P)	GEN SRV TRANS (9-T)	AREA LIGHTING (15)	LG POWER PRIMARY (19-P)	LG POWER TRANS (19-T)	IRRIGATION SECONDARY (24-S)	UNMETERED GEN SERVICE (40)	MUNICIPAL ST LIGHT (41)	TRAFFIC CONTROL (42)	
4	April 2019 - March 2020 Generation Level Normalized Sales (kWh)	733,536,289	200,337,331	20,804,107	130,443,033	17,375,310	3,138,528	475,798	179,309,479	107,726,999	72,905,307	5,904	989,628	24,865
5	Class Share of April 2019 - March 2020 Generation Level Normalized Sales (kWh)	100%	27.31%	2.84%	17.78%	2.37%	0.43%	0.06%	24.44%	14.69%	9.94%	0.00%	0.13%	0.00%
6	2019 October Update Class Allocated Base NPSE	\$ 17,911,948	\$ 4,891,962	\$ 508,008	\$ 3,185,240	\$ 424,281	\$ 76,639	\$ 11,618	\$ 4,378,491	\$ 2,630,545	\$ 1,780,247	\$ 144	\$ 24,165	\$ 607
7	June 2019 - May 2020 Loss-Adjusted Normalized Sales (kWh)	681,774,381	182,789,533	19,002,671	119,157,604	16,392,609	3,035,328	434,123	169,173,397	104,303,923	66,554,172	5,388	902,945	22,688
8	Proposed APCU Rates for 2019 October Update (\$/kWh)	0.026273	0.026763	0.026733	0.026731	0.025882	0.025249	0.026763	0.025882	0.025220	0.026749	0.026757	0.026763	0.026762
9	Proposed October Update APCU Revenue Requirement	\$17,911,948	\$4,891,962	\$508,008	\$3,185,240	\$424,281	\$76,639	\$11,618	\$4,378,491	\$2,630,545	\$1,780,247	\$144	\$24,165	\$607

10	APCU Rates for 2018 October Update (\$/kWh) - Order No. 18-170	0.026284	0.027402	0.027429	0.027428	0.025801	0.025886	0.027439	0.026514	0.021840	0.027425	0.027433	0.022934	0.022111
11	June 2019 - May 2020 Loss-Adjusted Normalized Sales (kWh)	681,774,381	182,789,533	19,002,671	119,157,604	16,392,609	3,035,328	434,123	169,173,397	104,303,923	66,554,172	5,388	902,945	22,688
12	Base NPSE Recovered under Current APCU Rates	\$17,921,927	\$5,008,878	\$521,233	\$3,268,286	\$422,947	\$78,574	\$11,912	\$4,485,532	\$2,277,956	\$1,825,252	\$148	\$20,708	\$502

Idaho Power Company
Calculation of Revenue Impact
State of Oregon
APCU October Update
Effective June 1, 2019

Summary of Revenue Impact
Current Base Revenue to Proposed Base Revenue

Line No	Tariff Description	Rate Sch. No.	Average Number of Customers	Normalized Energy (kWh)	Current Base Revenue w/o NPSE	Current Base NPSE Revenue	Total Current Base Revenue	Proposed Base NPSE Revenue	Total Proposed Base Revenue	Adjustments to Base Revenue	Percent Change Base to Base Revenue	Stipulated Revenue Increase 2.98% Cap	Revenue Requirement Shortfall
<u>Uniform Tariff Rates:</u>													
1	Residential Service	1	13,743	182,789,533	\$13,037,841	\$5,008,878	\$18,046,719	\$4,891,962	\$17,929,803	(\$116,916)	(0.65)%	(\$116,916)	\$0
2	Small General Service	7	2,566	19,002,671	\$1,537,880	\$521,233	\$2,059,113	\$508,008	\$2,045,888	(\$13,225)	(0.64)%	(\$13,225)	\$0
3	Large General Secondary	9S	922	119,157,604	\$6,429,005	\$3,268,286	\$9,697,291	\$3,185,240	\$9,614,245	(\$83,046)	(0.86)%	(\$83,046)	\$0
4	Large General Primary	9P	5	16,392,609	\$768,856	\$422,947	\$1,191,803	\$424,281	\$1,193,137	\$1,334	0.11%	\$1,334	\$0
5	Large General Transmission	9T	1	3,035,328	\$128,655	\$78,574	\$207,229	\$76,639	\$205,294	(\$1,935)	(0.93)%	(\$1,935)	\$0
6	Dusk to Dawn Lighting	15	0	434,123	\$96,716	\$11,912	\$108,628	\$11,618	\$108,334	(\$293)	(0.27)%	(\$293)	\$0
8	Large Power Primary	19P	6	169,173,397	\$6,534,823	\$4,485,532	\$11,020,356	\$4,378,491	\$10,913,314	(\$107,041)	(0.97)%	(\$107,041)	\$0
9	Large Power Transmission	19T	1	104,303,923	\$4,041,168	\$2,277,956	\$6,319,125	\$2,630,545	\$6,671,714	\$352,589	5.58%	\$188,310	\$164,279
10	Agricultural Irrigation Service	24	1,959	66,554,172	\$4,908,810	\$1,825,252	\$6,734,061	\$1,780,247	\$6,689,057	(\$45,004)	(0.67)%	(\$45,004)	\$0
11	Unmetered General Service	40	2	5,388	\$248	\$148	\$395	\$144	\$392	(\$4)	(0.92)%	(\$4)	\$0
12	Street Lighting	41	26	902,945	\$125,039	\$20,708	\$145,747	\$24,165	\$149,204	\$3,457	2.37%	\$3,457	\$0
13	Traffic Control Lighting	42	8	22,688	\$1,702	\$502	\$2,203	\$607	\$2,309	\$106	4.79%	\$66	\$40
14	Total Uniform Tariffs		19,239	681,774,381	\$37,610,743	\$17,921,927	\$55,532,670	\$17,911,948	\$55,522,691	(\$9,979)	(0.02)%		\$164,319
15	Total Oregon Retail Sales		19,239	681,774,381	\$37,610,743	\$17,921,927	\$55,532,670	\$17,911,948	\$55,522,691	(\$9,979)	(0.02)%		

(1) Updated June 2018-May 2019 Test Year

Idaho Power Company
Revenue Spread Exhibit for 2018 APCU October Update
Stipulated Revenue Spread

Line No.

1	3.4% Increase Cap - Revenue Requirement Shortfall		\$164,319											
		TOTAL SYSTEM	RESIDENTIAL (1)	GEN SRV (7)	GEN SRV SECONDARY (9-S)	GEN SRV PRIMARY (9-P)	GEN SRV TRANS (9-T)	AREA LIGHTING (15)	LG POWER PRIMARY (19-P)	LG POWER TRANS (19-T)	IRRIGATION SECONDARY (24-S)	UNMETERED GEN SERVICE (40)	MUNICIPAL ST LIGHT (41)	TRAFFIC CONTROL (42)
7	April 2018 - March 2019 Generation Level Normalized Sales (kWh)	625,784,425	200,337,331	20,804,107	130,443,033	17,375,310	3,138,528	475,798	179,309,479		72,905,307	5,904	989,628	
8	Class Share of April 2018 - March 2019 Generation Level Normalized Sales (kWh)	100%	32.01%	3.32%	20.84%	2.78%	0.50%	0.08%	28.65%		11.65%	0.00%	0.16%	
9	2018 October Update Class Allocated Base NPSE	\$ 164,319	\$ 52,605	\$ 5,463	\$ 34,252	\$ 4,562	\$ 824	\$ 125	\$ 47,083		\$ 19,144	\$ 2	\$ 260	
10	June 2018 - May 2019 Loss-Adjusted Normalized Sales (kWh)	577,447,770	182,789,533	19,002,671	119,157,604	16,392,609	3,035,328	434,123	169,173,397		66,554,172	5,388	902,945	
11	Proposed APCU Rates for 2018 October Update (\$/kWh)	0.00028	0.00029	0.00029	0.00029	0.00028	0.00027	0.00029	0.00028		0.00029	0.00029	0.00029	
12	Proposed October Update APCU Revenue Requirement	\$164,319	\$52,605	\$5,463	\$34,252	\$4,562	\$824	\$125	\$47,083		\$19,144	\$2	\$260	

Idaho Power Company
Calculation of Revenue Impact
State of Oregon
APCU October Update
Effective June 1, 2019

Summary of Revenue Impact
Current Base Revenue to Proposed Base Revenue

Line No	Tariff Description	Rate Sch. No.	Average Number of Customers	Normalized Energy (kWh)	Current Base Revenue w/o NPSE	Current Base NPSE Revenue	Total Current Base Revenue	Proposed Base NPSE Revenue	Total Proposed Base Revenue	Adjustments to Base Revenue	Percent Change Base to Base Revenue	1st Pass Adjustment to Proposed Base NPSE Revenue	1st Pass Total Adjustments to Proposed Base NPSE Revenue	1st Pass Percent Change Base to Base Revenue	1st Pass Proposed Base NPSE Revenue	Proposed APCU Rates for 2019 October Update (\$/kWh)
<u>Uniform Tariff Rates:</u>																
1	Residential Service	1	13,743	182,789,533	\$13,037,841	\$5,008,878	\$18,046,719	\$4,891,962	\$17,929,803	(\$116,916)	(0.65)%	\$52,605	(\$64,311)	(0.36)%	\$4,944,567	0.027051
2	Small General Service	7	2,566	19,002,671	\$1,537,880	\$521,233	\$2,059,113	\$508,008	\$2,045,888	(\$13,225)	(0.64)%	\$5,463	(\$7,762)	(0.38)%	\$513,470	0.027021
3	Large General Secondary	9S	922	119,157,604	\$6,429,005	\$3,268,286	\$9,697,291	\$3,185,240	\$9,614,245	(\$83,046)	(0.86)%	\$34,252	(\$48,794)	(0.50)%	\$3,219,491	0.027019
4	Large General Primary	9P	5	16,392,609	\$768,856	\$422,947	\$1,191,803	\$424,281	\$1,193,137	\$1,334	0.11%	\$4,562	\$5,897	0.49%	\$428,844	0.026161
5	Large General Transmission	9T	1	3,035,328	\$128,655	\$78,574	\$207,229	\$76,639	\$205,294	(\$1,935)	(0.93)%	\$824	(\$1,111)	(0.54)%	\$77,463	0.025520
6	Dusk to Dawn Lighting	15	0	434,123	\$96,716	\$11,912	\$108,628	\$11,618	\$108,334	(\$293)	(0.27)%	\$125	(\$168)	(0.16)%	\$11,743	0.027051
7	Large Power Primary	19P	6	169,173,397	\$6,534,823	\$4,485,532	\$11,020,356	\$4,378,491	\$10,913,314	(\$107,041)	(0.97)%	\$47,083	(\$59,958)	(0.54)%	\$4,425,574	0.026160
8	Large Power Transmission	19T	1	104,303,923	\$4,041,168	\$2,277,956	\$6,319,125	\$2,630,545	\$6,671,714	\$352,589	5.58%	\$0	\$188,310	2.98%	\$2,466,266	0.023645
9	Agricultural Irrigation Service	24	1,959	66,554,172	\$4,908,810	\$1,825,252	\$6,734,061	\$1,780,247	\$6,689,057	(\$45,004)	(0.67)%	\$19,144	(\$25,861)	(0.38)%	\$1,799,391	0.027036
10	Unmetered General Service	40	2	5,388	\$248	\$148	\$395	\$144	\$392	(\$4)	(0.92)%	\$2	(\$2)	(0.53)%	\$146	0.027045
11	Street Lighting	41	26	902,945	\$125,039	\$20,708	\$145,747	\$24,165	\$149,204	\$3,457	2.37%	\$260	\$3,717	2.55%	\$24,425	0.027051
12	Traffic Control Lighting	42	8	22,688	\$1,702	\$502	\$2,203	\$607	\$2,309	\$106	4.79%	\$0	\$66	2.98%	\$567	0.025005
13	Total Uniform Tariffs		19,239	681,774,381	\$37,610,743	\$17,921,927	\$55,532,670	\$17,911,948	\$55,522,691	(\$9,979)	(0.02)%	\$164,319	(\$9,979)	(0.02)%	\$17,911,948	
14	Total Oregon Retail Sales		19,239	681,774,381	\$37,610,743	\$17,921,927	\$55,532,670	\$17,911,948	\$55,522,691	(\$9,979)	(0.02)%					

(1) Updated June 2018-May 2019 Test Year

Idaho Power/109
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 Base Revenue to
Proposed Base Revenue

October 31, 2018

**Idaho Power Company
Calculation of Revenue Impact
State of Oregon
APCU October Update
Effective June 1, 2019**

**Summary of Revenue Impact
Current Base Revenue to Proposed Base Revenue**

Line No	Tariff Description	Rate Sch. No.	Average Number of Customers	Normalized Energy (kWh) ⁽¹⁾	Total Current Base Revenue	Proposed Adjustments to Base Revenue	Total Proposed Base Revenue	Percent Change Base to Base Revenue
<u>Uniform Tariff Rates:</u>								
1	Residential Service	1	13,743	182,789,533	\$18,046,719	(\$64,311)	\$17,982,408	(0.36)%
2	Small General Service	7	2,566	19,002,671	\$2,059,113	(\$7,762)	\$2,051,350	(0.38)%
3	Large General Secondary	9S	922	119,157,604	\$9,697,291	(\$48,794)	\$9,648,497	(0.50)%
4	Large General Primary	9P	5	16,392,609	\$1,191,803	\$5,897	\$1,197,700	0.49%
5	Large General Transmission	9T	1	3,035,328	\$207,229	(\$1,111)	\$206,118	(0.54)%
6	Dusk to Dawn Lighting	15	0	434,123	\$108,628	(\$168)	\$108,459	(0.16)%
7	Large Power Primary	19P	6	169,173,397	\$11,020,356	(\$59,958)	\$10,960,398	(0.54)%
8	Large Power Transmission	19T	1	104,303,923	\$6,319,125	\$188,310	\$6,507,435	2.98%
9	Agricultural Irrigation Service	24	1,959	66,554,172	\$6,734,061	(\$25,861)	\$6,708,200	(0.38)%
10	Unmetered General Service	40	2	5,388	\$395	(\$2)	\$393	(0.53)%
11	Street Lighting	41	26	902,945	\$145,747	\$3,717	\$149,464	2.55%
12	Traffic Control Lighting	42	8	22,688	\$2,203	\$66	\$2,269	2.98%
13	Total Uniform Tariffs		19,239	681,774,381	\$55,532,670	(\$9,979)	\$55,522,691	(0.02)%
14	Total Oregon Retail Sales		19,239	681,774,381	\$55,532,670	(\$9,979)	\$55,522,691	(0.02)%

(1) Updated June 2019-May 2020 Test Year

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CERTIFICATE OF SERVICE

I hereby certify that I served a true and correct copy of the foregoing document on the following named person(s) in Docket UE 333 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 31, 2018



Wendy McIndoo
Administrative Assistant