UNITED STATES OF AMERICA

U.S. DEPARTMENT OF ENERGY

BEFORE THE

BONNEVILLE POWER ADMINISTRATION

Fiscal Years 2020 – 2021 Proposed Power) BPA Docket No. BP-20 And Transmission Rate Adjustments)

DIRECT TESTIMONY OF THE WESTERN PUBLIC AGENCIES GROUP

WITNESSES:

STEVE ANDERSEN RUSS SCHNEIDER ZACARIAS YANEZ DEANNA CARLSON STEVE CATLOW

Exhibit No. BP-20-E-WG-01

SUBJECTS OF TESTIMONY:

BPA's Competitive Position and a Zero Percent Rate Increase
Forward Sales Assumption for Firm Surplus Energy Sales
Forward Remarketing Assumption for Tier 1 Energy Displaced by SILS Purchases
Forward Sales Assumption for a Portion of Secondary Energy
Self-Funding Assumption for Energy Efficiency
Alternative to BPA's Proposed Super Peak Credit Penalty

Submitted: February 21, 2019

UNITED STATES OF AMERICA DEPARTMENT OF ENERGY BEFORE THE BONNEVILLE POWER ADMINISTRATION

In the Matter of:)	
POWER AND TRANSMISSION RATE ADJUSTMENTS)))))	BPA Docket No. BP-20 DIRECT TESTIMONY

DIRECT TESTIMONY OF WESTERN PUBLIC AGENCIES GROUP

I. <u>INTRODUCTION</u>.

- 2 Q. Would you state your names, employers and positions?
- 3 A. My name is Steve Andersen, and I am employed by EES Consulting. My current
- 4 position is Manager of Project Evaluations. My qualifications and responsibilities are
- 5 presented in the exhibit entitled Qualifications, BP-20-Q-WG-01.
- 6 A. My name is Russ Schneider, and I am employed by EES Consulting. My current position
- 7 is Senior Financial Consultant. My qualifications and responsibilities are presented in the
- 8 exhibit entitled Qualifications, BP-20-Q-WG-02.
- 9 A. My name is Zacarias Yanez, and I am employed by EES Consulting. My current position
- is Project Manager. My qualifications and responsibilities are presented in the exhibit
- entitled Qualifications, BP-20-Q-WG-03.
- 12 A. My name is Deanna Carlson, and I am employed by Cowlitz Public Utility District No. 1.
- 13 My current position is Energy Policy Analyst. My qualifications and responsibilities are
- presented in the exhibit entitled Qualifications, BP-20-Q-WG-04.

- 1 A. My name is Steve Catlow, and I am employed by Benton REA. My current position is
- 2 Manager of Finance and Administration. My qualifications and responsibilities are
- presented in the exhibit entitled Qualifications, BP-20-Q-WG-05.

4 Q. On whose behalf are you testifying?

- 5 A. We are presenting testimony on behalf of the Western Public Agencies Group ("WPAG")
- 6 utilities, which include: Eugene Water & Electric Board, Benton Rural Electric
- Association, the Cities of Port Angeles, Ellensburg and Milton, Washington, the Towns
- 8 of Eatonville and Steilacoom, Washington, Alder Mutual Light Company, Elmhurst
- 9 Mutual Power and Light Company, Ohop Mutual Light Company, Parkland Light and
- Water Company, Public Utility Districts No. 1 of Clallam, Clark, Cowlitz, Grays Harbor,
- 11 Kittitas, Lewis, Mason, and Skamania Counties, Washington, Public Utility District No.
- 12 3 of Mason County, Washington, and Public Utility District No. 2 of Pacific County,
- Washington.

14 Q. How is your direct testimony organized?

- 15 A. This testimony is divided into the sections and subsections that address the topics
- described below:
- BPA's Competitive Position and a Zero Percent Rate Increase;
- Forward Sales Assumption for Firm Surplus Energy Sales;
- Forward Remarketing Assumption for Tier 1 Energy Displaced by Southeast
- Idaho Load Service ("SILS") Purchases;
- Forward Sales Assumption for a Portion of Secondary Energy;
- Self-Funding Assumption for Energy Efficiency; and
- A Balanced Alternative to BPA's Proposed Super Peak Credit Penalty.

II. POWER ISSUES.

2	A.	IMPROVING	BPA's	COMPETITIVE	POSITION	AND	LONG-TE	RM
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3		HEALTH THE	ROUGH	A ZERO PERCEN	NT RATE IN	CREAS	SE. ¹	

- 4 Q. Do you have any preliminary, high-level comments regarding BPA's initial proposal for the BP-20 rate period?
- 6 Α. BPA's initial proposal for the BP-20 rate period would increase power rates by an 7 average of 2.9 percent compared to BP-18 rates. This is appreciably lower than the 5 percent power rate increase BPA projected when it commenced its Integrated Program 8 Review ("IPR") process in July of 2018,² and substantially below the average rate period 9 to rate period rate increase of 7.2 percent seen by power customers since BPA first 10 implemented its Tiered Rate Methodology ("TRM"). It is apparent from the initial 11 12 proposal that BPA is beginning to implement a plan to address the concerns of its preference customers regarding its waning competitive position. We understand that this 13 is and has been a difficult task, and we commend BPA and BPA staff for the hard work 14 needed to achieve this result. 15
- O. Does this mean that your concerns regarding BPA's competitive position are alleviated?
- A. No. With an eye towards 2028 when BPA's current power contracts expire, BPA and its customers must be realistic as to BPA's current rate trajectory and the competitive position it will place BPA in 2028. As shown in Graph 1 below, WPAG's analysis

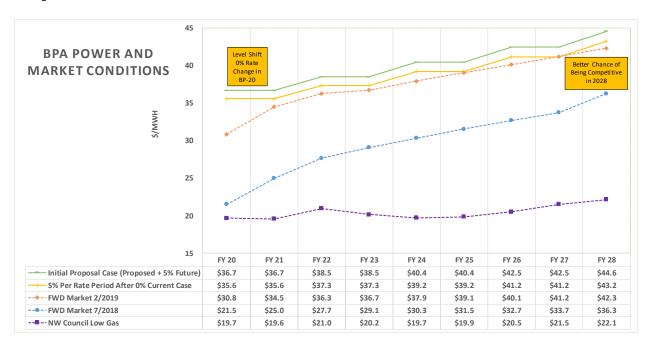
Direct Testimony of the

¹ Eugene Water & Electric Board ("EWEB") joins the spirit of this Section II.A. and shares the concerns regarding the importance of BPA improving its competitive position and long-term financial health; but, consistent with EWEB's submittals in prior BPA processes, abstains from joining the full call for a zero percent rate increase for the BP-20 rate period.

² See BP-20 Rate Previews (July 25, 2018) available at https://www.bpa.gov/Finance/RateCases/BP-20/Meetings/RateCase/2018.07.25_BP20_RateImpactPreview.pdf.

percent, and its goal of limiting future rate increases to an assumed rate of inflation of 5 percent per rate period,³ BPA's power rates will most likely be above market from now until 2028, notwithstanding the gains made in the 2018 IPR process and the BP-20 initial proposal.⁴ Even with the recent increase in forward market prices, BPA is still at risk of being above market for the foreseeable future without continued effort by BPA and its customers to not only hold the line, but to reduce future expenditures.

Graph 1



Q. What can happen if BPA's power rates exceed the market for too long?

A. The risk is that such circumstances will result in price induced reductions in demand for BPA power that will undermine BPA's capacity to balance its costs and revenues. This, in turn, will threaten BPA's ability to meet its statutory objectives, including BPA's

⁴ In preparing market comparison graphs for this testimony, we used a melded average of On Peak and Off Peak Monthly Prices, Monthly Term (not day ahead or hourly), pulled on July 12, 2018 and February Direct Testimony of the

BP-20-E-WG-01

 $^{^3}$ Id

obligations to repay the Federal Treasury, recover its costs, and to mitigate, protect, and enhance fish and wildlife. The ultimate risk is that the potential failure by BPA in meeting these obligations will prompt political action in Washington D.C.

4 Q. How does this relate to BPA's immediate future?

The real damage is that this will occur in the lead-up to 2028. This is when BPA's power customers will decide whether to continue to put the majority of their respective loads on BPA, to leave BPA entirely, or to diversify their resource portfolios by purchasing some power from BPA but also using power from third parties to meet a greater share of their loads. Of those three scenarios, we believe that the third is the most likely if BPA's power rates remain on their current trajectory.

11 Q. Will this lead to a discernable loss of preference customer load served by BPA?

12 A. Yes. Under such a circumstance, it is entirely possible that BPA's preference customers
13 could, in aggregate, take as much as 25 percent of their load off BPA. Such a loss of load
14 would mean that BPA would have excess power to sell at the then prevailing market
15 price, which, again, is forecast to be lower than the Priority Firm ("PF") rate, the rate
16 BPA otherwise would have sold the power at if its customers had chosen not to diversify.

Q. Can you provide an example of BPA losing load due to the PF rate being higher than market alternatives?

19 A. Yes. The last time BPA's rates were significantly above market was in the mid-1990s.

20 At that time, BPA and its preference customers still had approximately five years to go

21 under the initial 20 year power sales contracts entered into under the Northwest Power

22 Act. A significant number of preference customers demanded that BPA release at least

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some of their load so they could diversify their resource portfolios and take advantage of
the then prevailing lower market prices. Although the contracts at the time included
some off-ramps for customers to take load off BPA, those off-ramps were either
insufficient to meet the demands of the customers who were requesting to leave or did
not apply under the circumstances. After much discussion within the region, and
significant political and economic pressure, the Administrator allowed customers to
amend their power sales contracts with BPA so they could remove as much as 10 to 15
percent of their load from BPA. This decision was memorialized in Administrator's
Record of Decision Template (New Power Sales Contracts) and Amendatory Agreement
No. 7, dated May 13, 1996.

11 Q. Is there a recent example of BPA losing load due to its power rates being above the 12 rates of other market alternatives?

BPA's current take or pay Regional Dialogue Contracts have largely sheltered it from price-induced reductions in preference customer load, and will do so through FY 2028. However, Alcoa recently terminated its power contract with BPA effective August 31, 2019. Our understanding is that, despite Alcoa terminating its contract with BPA, it is BPA's expectation that Alcoa is likely to continue operations into the BP-20 time period.⁵ Given this expectation, and the price discrepancy between BPA and other power alternatives in the marketplace, it is likely that the level of BPA's power rates compared to the market was at least one factor Alcoa considered when determining whether to terminate its contract.

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⁵ See Data Request Response No. WG-BPA-28-10. Direct Testimony of the Page 6 of 34

Q. Are there other customer actions about which BPA should have concerns?

If preference customers start contemplating power supply diversification prior to the 2028 BPA contract expiration, BPA may well experience a "stampede to the exit" phenomenon. By this, we mean that preference customers would become concerned that the available third party supply of low cost power might all be spoken for if they do not act, leaving them among the few utilities solely dependent on BPA for its entire power supply. The stampede to claim their share of the low price market power, combined with the fear of a BPA rate spiral to extract the necessary dollars from a shrinking customer base, could result in BPA load loss exceeding our conservative estimate of 25 percent.

Q. Given your above concerns, what do you propose that BPA do?

There are many factors, both currently known and yet to be determined, that will impact BPA's competitive position *vis-à-vis* the market over the next ten years. Most of those factors are and will continue to be outside of BPA's direct control, e.g., natural gas prices, renewable resource portfolios, carbon-free policies, the weather, to name a few. The three interdependent factors that BPA, itself, has the ability to influence in any substantial way are its costs, its marketing decisions, and the level of its rates. These are the primary tools of BPA's self-determination. For this reason, and given our concerns identified above, we recommend that BPA exercise the control it has by using these three tools to realize a zero percent power rate increase for BP-20. As shown in Graph 1 above, this would effectively delay by two years the starting point when BPA's targeted inflationary based rate adjustments would commence and give BPA a better chance to be price competitive in 2028 regardless of what the market factors outside of BPA's control do.

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- Q. Are there any other advantages to implementing a zero percent rate increase in BP-20?
- 3 Α. A zero percent power rate increase in the short-term would build confidence among 4 BPA's preference customers that BPA is committed to changing its old business model 5 and being the stable, competitive and efficient power supplier it has promised to become. The time to do so is now because BPA's preference customers are currently evaluating 6 7 whether they agree that BPA will be competitive in 2028. If they are not convinced in 8 the relative near term, actions in subsequent rate periods might be too late for BPA to 9 sway them. We appreciate the effort BPA put into achieving the 2.9 percent rate increase included in the initial proposal. However, there is still a gap between projected market 10 11 prices and projected BPA rates.

Q. What is the potential consequence of this gap?

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As discussed above, we believe that BPA's financial position is most vulnerable to its customer's diversifying their resource portfolios in post-2028 by taking a percentage of their load off BPA and serving part of their load with lower priced market power purchases. In the context of diversification, from the customer's perspective, BPA's rates are truly competing against wholesale market prices. As shown above, forward market prices have increased over the past 6 months. However, even with the recent increase in market prices BPA's projected rates are still above projected market prices. If forward market prices fall back to the level they were at in July 2018, or down to the level of the 7th Power Plan's low gas price scenario, the gap between BPA's projected rates and the market will increase. BPA should take the opportunity to reduce this gap by implementing a zero percent rate increase in BP-20.

Q. How can BPA achieve a zero percent rate increase in BP-20?

- A. Adopting the rate proposals identified below would be a good start. To the extent adopting those proposals does not result in a zero percent rate increase, BPA should continue to review its costs for additional reductions outside the rate case proposal and, if such reductions are identified, include them in the final rate proposal for BP-20.
- Q. Is there anything else BPA can do between now and the final rate proposal to help
 ensure a zero percent rate increase?
 - Just this week, on February 19, 2019, BPA held a brief telephone conference announcing that it recently discovered financial reserves attributable to Power Services are understated by approximately \$200 million. BPA intends to hold a workshop regarding this discovery on March 11, 2019 and will release additional information prior to the workshop. Accordingly, information on how the discovery will impact the BP-20 rate case and the projected 2.9 power rate increase is currently scarce. Nonetheless, there is the possibility that increasing Power Services' financial reserves by \$200 million to correct for the mistake will cause the business line's reserve levels to increase above the lower threshold under BPA's Financial Reserve Policy ("FRP"). If so, this would eliminate the need to trigger the \$30 million FRP surcharge in one or both rate years. By itself, this would reduce the initial proposal's projected 2.9 percent rate increase to 1.4 percent. For this reason, we urge BPA to take whatever action is necessary to ensure that Power Services is attributed its full and correct allotment of financial reserves prior to the final rate proposal.

- 1 Q. Would the correct attribution of financial reserves to Power Services have any other
- 2 implications that should be accounted for in the final rate proposal?
- 3 A. Yes, there is the matter of interest. Power Services must be compensated for the interest
- 4 it would have received had the \$200 million been properly attributed. One option to
- 5 consider as part of the process commencing on March 11th, and then incorporated into
- 6 this rate proceeding, is whether some of that recompense should be used to further lower
- 7 or eliminate the BP-20 power rate increase.

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B. A SENSIBLE USE OF FORWARD SALES ASSUMPTIONS.

- 10 1. Forward Sales Assumption for Firm Surplus Energy Sales.
- 11 Q. What does this portion of your testimony address?
- 12 A. We propose that for ratemaking purposes, BPA assume that all of the firm surplus energy
- sales it is forecasting for the BP-20 rate period will be made on a forward basis.
- 14 Q. What are firm surplus energy sales?
- 15 A. When BPA's annual firm energy forecast is greater than its load obligations, it calculates
- the amount of annual firm surplus sales that it will need to make to achieve annual firm
- energy load-resource balance for the federal system. BPA's testimony and studies refer
- to these sales as "firm surplus sales" or "firm surplus energy sales."
- 19 Q. What amount of firm surplus sales is BPA forecasting for each year of the BP-20
- 20 rate period?
- A. BPA is forecasting firm surplus energy sales in the amounts of 193 aMW in FY 2020 and
- 22 53.4 aMW in FY 2021.⁶

⁶ *Bellcoff, et al.*, BP-20-E-BPA-12, at 12, lines 8-10. Direct Testimony of the

Q. How does BPA value firm surplus energy sales for rate setting purposes?

A. BPA assumes that some firm surplus energy will be sold to Tier 2 customers at a price based on a forward market price index and that the balance will be sold at the average spot market prices forecasted in its market price run in AURORA®.⁷

5 Q. How should BPA value firm surplus energy sales for rate setting purposes?

A. We propose for ratemaking purposes, BPA assume that all of its firm surplus energy will be sold on a forward basis and assign a value to those assumed sales based on either (i) the weighted average price of any such forward sales actually made; or, (ii) if no such sales are actually made, the same methodology (using prices based on a forward market price index) BPA proposes to use to fix the price of firm surplus energy sold to Tier 2 customers under the Tier 2 Short-Term rate.⁸

Q. Why is a forward sale assumption for BPA's entire inventory of firm surplus energy appropriate?

Firm surplus energy is power that BPA has determined for planning purposes will be available on a firm basis during the rate period even under critical water conditions and in excess of its load service obligations. This is firm power that BPA would use to serve Tier 1 load during the rate period if there was sufficient Tier 1 load to serve. BPA also plans to use a portion of this firm power to actually serve firm Tier 2 load during the BP-20 rate period. This is in contrast to BPA's forecast of non-firm secondary energy, which is based on better than critical water conditions and, for planning purposes, is not

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⁷ BP-20E-BPA-05, at 33, lines 9-19.

⁸ In the event BPA does not make a market purchase, BPA proposes to set the Remarketing Value used to calculate the Tier 2 Short-Term rate based on "the average of Intercontinental Exchange (ICE) Mid-C settlement prices for a flat annual product during the upcoming Rate Period, from two separate five-consecutive-business-day periods (the last full week in September 2018 and the last full week March 2019) for the same fiscal year." See, *Stiffler*, *et al.*, BP-20-E-BPA-15, at 14, lines 21-24.

normally assumed to be available to serve firm rate period load. Accordingly, the planning level certainty attributable to firm surplus energy can support an assumption in BPA's ratemaking that such energy will be sold on a forward firm basis.

4 Q. What would be the advantage of assuming forward market sales for BPA's entire inventory of firm surplus energy?

A. In a word: Price. As shown in the graph below, the monthly prices identified in BPA's spot market price forecast for the rate period are significantly lower than the prices currently shown in forward market price indexes for Mid-C for the same time period.

9 Graph 2

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Since BPA uses the average of its spot market price forecast to value that portion of its firm surplus energy not sold to Tier 2 customers, this means that it is substantially undervaluing such energy when setting rates, particularly given its firm qualities discussed above. Our proposal would value firm surplus energy based on either an actual or index based forward price rather than BPA's spot market forecast. Valuing the surplus

firm energy based on the forward market price BPA used to set the Tier 2 Short-Term
rate in the initial proposal, for example, would yield \$5.40 more per MW-hr of firm
surplus energy sold compared to the average of BPA's spot market forecast. We estimate
that if BPA were to adopt our proposal, it would increase assumed revenues for the rate
period by approximately \$5.8 million and help lower the PF Tier 1 rate by approximately
0.15 percent, all other things being equal.

- Q. Would BPA need to make any additional assumptions in the rate case in order to implement your proposal?
- 9 A. The forward market sales under our proposal should be further assumed to be made as 10 flat blocks of power, just like the firm surplus energy to be sold to Tier 2 customers under BPA's initial proposal. This will ensure parity for all firm surplus sales for rate setting 11 purposes. It will also increase the assigned value for said energy since flat blocks are 12 more highly valued in the market than unshaped energy. We recognize that there is a 13 14 great deal of seasonality and diurnality associated with the available surplus firm energy. 15 BPA will likely need to assume for rate setting purposes that some above critical non-16 firm, but very high probability, energy is used to construct flat blocks of surplus firm 17 energy.
 - Q. Would the assumption that all firm surplus will be sold as a flat block create any additional risk to BPA?
- A. It would likely be an additional factor that BPA would incorporate into its risk model.

 However, the revenue risk distributions have narrowed from the previous rate case due to

 the reduction in prices in BPA's spot market price forecast compared to the price forecast

 used to set final rates for the BP-18 rate period. Accordingly, the additional firm sales we

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are proposing will likely have a negative, non-diminutive impact on only a small number
of water years in BPA's risk modeling. In our opinion, the limited jeopardy presented by
these few model runs is justified and mitigated by (i) the substantial increase in revenue
associated with selling a flat block of surplus firm power in the market as opposed to
unshaped surplus firm energy, (ii) the high certainty of the non-firm energy required to
shape firm surplus energy into flat blocks being realized, (iii) the correct attribution of an
additional \$200 million to Power Services in financial reserves available for risk
following BPA's recent announcement that it has been understating Power Services'
reserve levels by that amount, and (iv) the new \$30 million/year Financial Reserve
Policy ("FRP") surcharge included in the proposed rates that would likely trigger in the
event the financial reserves attributable to Power Services are below 60 days cash on
hand following the correction under item (iii).

- 2. Forward Remarketing Assumption for Tier 1 Energy Displaced by Southeast Idaho Load Service ("SILS") Purchases.
- Q. Are there any other opportunities for BPA to use a forward sales assumption when setting rates?
- A. Yes, there are. BPA has made forward power purchases of 100 aMW in FY 2020 and 77 aMW in FY 2021 to provide Southeast Idaho Load Service ("SILS") following termination of the BPA-PacifiCorp Exchange Agreement.⁹ These forward power purchases displace the use of Tier 1 firm energy to serve the SILS load. In ratemaking, BPA assumes that this displaced Tier 1 firm energy will increase the amount of

⁹ BP-20-E-BPA-05, at 34, lines 1-4. Direct Testimony of the Western Public Agencies Group

secondary energy marketable at Mid-C and assigns a value for such energy based on its spot market price forecast.¹⁰ We propose that, for ratemaking purposes, BPA instead assume that such displaced Tier 1 firm energy will be remarketed and sold on a forward basis and assigned a value based on the same approach we recommend above for firm surplus energy.

Q. Why is this appropriate?

The Tier 1 firm energy displaced by the SILS purchases is also based on a critical water assumption and would be available to serve firm Tier 1 load during the rate period absent certain transmission constraints. Just like for the firm surplus energy discussed above, the firm attributes of this energy provide an opportunity to assume it will be sold on a forward basis and thereby capture the differential between forward prices and BPA's spot market price forecast in setting rates. We estimate that if BPA were to adopt this proposal, it would increase BPA's assumed revenues for the rate period by approximately \$8.3 million and further help lower the PF Tier 1 rate by approximately 0.21 percent, all other things being equal.

Q. Similar to your proposal for firm surplus energy above, should BPA assume in setting rates that this power would be sold as a flat block?

A. Yes, we recommend that BPA use a flat block assumption in the same manner, and for the same reasons, we recommended BPA use a flat block assumption for sales of firm surplus energy.

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- 1 3. Forward Sales Assumption for a Portion of Secondary Energy.
- Q. Do you have any other proposals for BPA to use a forward sales assumption whensetting rates?
- 4 A. Yes, we propose that BPA assume for ratemaking purposes that 75 aMW of its secondary
- 5 energy inventory will be sold on a forward basis for both years of the BP-20 rate period
- and assigned a value based on the same approach we recommend above for firm surplus
- 7 energy.
- 8 Q. What is the basis for this proposal?
- 9 A. Alcoa exercised its option to terminate its power contract with BPA effective August 31,
- 10 2019. Accordingly, there will be no Alcoa load during the BP-20 time period. 11 The
- terminated contract included a sale of 75 aMW of secondary energy to Alcoa as a firm
- 12 flat block through September 30, 2022. 12 Our recommendation is that BPA assume for
- rate setting purposes that the 75 aMW from the terminated sale to Alcoa will be sold on
- the forward market for the BP-20 rate period.
- 15 Q. Why would it be appropriate to assume a forward sale of this 75 aMW of secondary
- energy during the BP-20 time period?
- 17 A. When BPA entered into its power sales contract with Alcoa, it determined a forward sale
- to Alcoa of 75 aMW through September 30, 2022 was supportable and reasonable. In
- making this determination, BPA did not use the critical water assumption it traditionally
- 20 uses to assess whether it will have sufficient firm resources to meet its firm obligations.
- Instead, BPA entered into the Alcoa contract based upon a determination that it could
- meet its delivery obligation to Alcoa of 75 aMW under most water conditions using an

average middle 80 percent water assumption.¹³ By doing so, BPA effectively acknowledged that there are gradations of certainty within its secondary sales inventory. Further, by isolating those components of such inventory having the highest certainty of being realized, BPA determined that it could contractually commit to serve non-preference customer firm loads during the BP-20 time period, based on a better than critical water assumption, without creating an undue risk that it would need to make power purchases specifically to serve such firm loads.

8 Q. How does your proposal utilize these facts?

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- 9 A. Our proposal recognizes that Alcoa's termination of its contract with BPA should not, in 10 and of itself, change BPA's previous determination, i.e., that BPA can isolate the 75 11 aMW of its secondary inventory with the highest certainty of being realized for purposes 12 of assuming a forward sale of such energy in setting rates for the BP-20 rate period.¹⁴
- Q. Similar to your proposal for firm surplus energy above, should BPA assume in setting rates that this power would be sold as a flat block?
- 15 A. Yes, we recommend that BPA use a flat block assumption in the same manner, and for 16 the same reasons, that we recommended BPA use a flat block assumption for valuing 17 sales of firm surplus energy. In addition, we note that the 75 aMW BPA contracted to 18 sell to Alcoa during the BP-20 time period was for a flat block.¹⁵

¹² *See* Record of Decision in Support of Amendment No. 1 to Power Sales Contract No. 13PM-10978 Between Bonneville Power Administration and Alcoa, Inc., at 1-3 (May 2015) ("Alcoa ROD"). ¹³ *Id.* at Attach. A 2-4.

¹⁴ See 2017 White Book, Exhibit 35 available at https://www.bpa.gov/p/Generation/White-Book/wb/2017-WBK-Technical-Appendix-Volume-1-Energy-Analysis-20171218.pdf.

¹⁵ See Alcoa Rod, at Attach, A 2 and Table 1.

Q. What would the rate impact be if BPA were to adopt your proposal?

- A. We estimate that if BPA were to adopt this proposal that its assumed revenues for the rate period would increase by approximately \$7.1 million and thereby decrease the PF rate by approximately 0.18 percent, all other things being equal.
- Would this proposal create an additional risk that BPA would be required to purchase additional power to serve this forward sale of power?
 - Yes and no. Yes because this proposal contemplates a forward sale of secondary energy, which is based on a better than critical water assumption. As a consequence, there is an incrementally higher risk that BPA would need to purchase power to meet this forward sale during a poor water year compared to the initial proposal and compared to our similar proposals above related to firm surplus energy and the firm Tier 1 energy displaced due to the SILS purchases. However, this is not a new risk. But for Alcoa's termination of its contract with BPA, the risks associated with a forward sale of 75 aMW of BPA's highest probability secondary energy would already be embedded in BPA's BP-20 rate proposal, just like it is rooted in BPA's current rates for the BP-18 rate period. Further, it is a risk that BPA previously determined acceptable and unlikely to require additional power purchases under most water conditions. Simply stated, if BPA was willing to bear this risk to provide service to Alcoa, it should be willing to do so to calculate the revenues to be derived from selling it on the forward market when setting the BP-20 rates.

Q. Is there anything you'd like to add with respect to the potential increases in assumed revenue you have identified above?

Yes. The total increase in BPA's assumed rate period revenues as a result of the foregoing recommendations is \$21.2 million with a power rate decrease of a little more than 0.5 percent compared to the initial proposal. The \$21.2 million increase in assumed revenue is based on the forward market prices from the last of week of September 2018 that BPA used to calculate the Short-Term Tier 2 rate in the initial proposal. Forward market prices have increased since September 2018. Given the increase in market prices, it is our belief that the \$21.2 million increase in assumed revenues identified in this testimony is very likely understated.

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C. LOWER RATES BY INCREASING THE SELF-FUNDING ASSUMPTION FOR ENERGY EFFICIENCY WHILE MEETING ACTION PLAN GOALS. 17

15 Q. What does this portion of your testimony address?

16 A. In this portion of our testimony we propose that, in setting power rates, BPA assume
17 power customers will self-fund 35 percent, rather than 30 percent, of the programmatic
18 energy efficiency savings goal for the rate period.

19 Q. What is BPA's 2016-2021 Energy Efficiency Action Plan (the "Action Plan")?

20 A. The Action Plan is BPA's roadmap for achieving energy efficiency savings from 2016 to 2021. Among other things, the Action Plan establishes energy efficiency savings goals

¹⁷ Eugene Water & Electric Board and Mason PUD No. 3 do not join in Section II.C of this testimony.
Direct Testimony of the
BP-20-E-WG-01

- for programmatic, market transformation and momentum saving activities from 2016 to
- 2 2021.
- **Q.** What level of programmatic savings does the Action Plan call for?
- 4 A. Programmatic savings are the largest contributor to BPA's energy savings potential. In
- 5 the Action Plan, BPA projected that programmatic savings would account for 351.6
- 6 aMW, or 61 percent, of BPA's total savings from 2016 to 2021.
- 7 Q. How are programmatic savings funded?
- 8 A. From 2012 until 2017, BPA budgeted funding for 75 percent of the targeted
- 9 programmatic savings through its Energy Efficiency Incentive ("EEI") program and
- assumed that utilities would "self-fund" the remaining 25 percent. Beginning in 2018,
- BPA budgeted funding for 70 percent of programmatic savings, with utilities being
- responsible for self-funding 30 percent.
- 13 Q. Do you have a recommendation for the self-funding assumption BPA should use in
- setting rates for the BP-20 rate period?
- 15 A. Yes, based on the data from FY 2016 and FY 2017 (the most recent complete rate period
- data available), it appears that self-funding by utilities was nearly 36 percent of original
- 17 programmatic target during that time period. Accordingly, we recommend that BPA
- increase the self-funding assumption for the BP-20 rate period to 35 percent.
- 19 Q. What is the basis for your assertion that self-funding by utilities achieved nearly 36
- 20 percent of the programmatic target in FY 2016 and FY 2017?
- 21 A. Under the Action Plan, BPA set a goal of 58 aMW of programmatic savings for both FY
- 22 2016 and FY 2017 for a total of 116 aMW for the BP-16 rate period. However, during
- 23 that period, BPA actually achieved total programmatic savings of 137 aMW, which was

approximately 18 percent above the targeted programmatic savings for the period. Analysis by the Northwest Power and Conservation Council indicates that of the total energy efficiency savings achieved by BPA's power customers during the 2016-2017 time period, approximately 30.9 percent was funded by customers and the remainder by BPA. When this 30.9 percent is applied to the 137 aMW of programmatic savings identified by BPA as actually achieved during the BP-16 rate period, it indicates that approximately 42 aMW of programmatic savings was achieved through self-funding by BPA's power customers. Based on the above, we calculate that the self-funding of programmatic savings by BPA's power customers actually realized nearly 36 percent of the original programmatic savings *goal* of 116 aMW for the BP-16 rate period.

Q. Is it reasonable for BPA to adjust the self-funding assumption for the BP-20 rate period based on historic data from the BP-16 rate period?

Yes it is. The FY 2016 and FY 2017 data is the most recent, complete data available for a full rate period. It is important to use data from a full rate period because programmatic savings during a two year rate period have historically been uneven. For example, the savings goal in both FY 2016 and FY 2017 was 58 aMW/year, but the savings actually achieved was 63 aMW in FY 2016 and 74 aMW in FY 2017. In addition, it is a common practice in rate setting to fix proposed rates based on historic data from prior rate periods.

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¹⁸ Integrated Program Review Energy Efficiency Presentation (June 21, 2018) at 6 (showing comparison of achievement to targets for 2016 and 2017).

¹⁹ See Regional Technical Forum, 2017 Regional Conservation Report Workbook at Chart 7 available at https://nwcouncil.app.box.com/v/2017RCPWorkbookFinalDataPublic. In fact, Chart 7 indicates that self-funding efforts by public power resulted in approximately 32.4 percent of the total energy efficiency savings achieved by BPA's power customers during the 2016-2017 time period. However, our understanding is that Chart 7 excluded savings by some utilities and that 30.9 percent is a more accurate representation of the share of savings achieved through self-funding in FY 2016 and FY 2017.

³ Northwest Power and Conservation Council, Energy Efficiency: Values and Challenges (Draft for Public Comment) 3-41 (Feb. 14, 2019).

- Q. Is there any additional basis for increasing the self-funding assumption to 35 percent?
- 3 As discussed above, public power exceeded Action Plan programmatic savings goals for A. 4 the FY 2016 and FY 2017 time period by approximately 18 percent. In BPA's 2018 IPR, 5 BPA took this into account by reducing the programmatic goals identified in the Action 6 Plan for FY 2020 and FY 2021 from 59 aMW and 58 aMW, respectively, to 51 aMW for 7 both years. It appears that an inherent assumption underlying BPA's proposal to continue 8 the 30 percent self-funding assumption while at the same time reducing targets is that 9 utilities will adjust their self-funding efforts in FY 2020 and FY 2021 to account for BPA's adjustment to the overall programmatic target for the rate period. 10

Q. Do you believe this to be a sound assumption?

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We do not believe this assumption to be sound. Not all utilities are self-funding energy efficiency savings, but those that do are not basing their self-funding activities on BPA's rate period goals, nor their pro-rata share of BPA's 30 percent self-funding assumption. In the 2016-2017 rate period, about 25 customers provided some self-funding, with approximately 90 percent of the savings coming from the self-funding of five large utilities located in the State of Washington.³ These five utilities have robust and sophisticated energy efficiency programs of their own and are primarily engaged in energy efficiency (including the self-funding of energy efficiency) to meet policy and/or regulatory obligations that are independent of BPA's programmatic savings goals and BPA's self-funding assumption ("Independent EE Obligations").²⁰ Independent EE Obligations include not only obligations under Washington's Energy Independence Act

1 ("EIA"),²¹ but also, in some cases, self-imposed energy efficiency requirements to 2 achieve, for example, the objective to become carbon neutral²².

Q. Do you expect these utilities to continue to self-fund energy efficiency at such a high level in the future?

5 Yes, we do. These Independent EE Obligations have and will continue to cause those utilities that are subject to them to conduct energy efficiency independent of BPA's goals, 6 7 and to self-fund much more than their pro-rata share of BPA's utility self-funding assumption.²³ Indeed, this is the main reason that public power's collective self-funding 8 efforts were nearly 36 percent of the savings goal for the BP-16 rate period. 9 Accordingly, it is reasonable to assume that, because BPA's reduction of the 10 programmatic goals for FY 2020 and FY 2021 will not itself result in a reduction the self-11 12 funding performed by utilities to meet their Independent EE Obligations, the percentage share of self-funding compared to the lower overall targets should go up, all other things 13 14 being equal. This factor, coupled with the considerations discussed above, indicates that 15 a 35 percent self-funding assumption for the BP-20 rate period is reasonable.

Q. Why ask for these changes in BP-20 and not wait for the Action Plan timeline tolapse?

18 A. We understand and appreciate the long-term value of energy efficiency. We are not arguing for a lower programmatic savings goal for the BP-20 rate period than the one

²¹ Washington EIA requires large (greater than 25,000 customers) public utilities to "pursue all available conservation that is cost-effective, reliable, and feasible." RCW 19.285.040(1).

²² See, e.g., City of Seattle Climate Action Plan 32-43 (June 2013) (establishing local energy efficiency targets through 2030).

²³ Northwest Power and Conservation Council, Energy Efficiency: Values and Challenges (Draft for Public Comment) 3-41 (Feb. 14, 2019) (Stating that "[t]he EIA has resulted in significant energy-efficiency investment made by many of the large utilities in Washington above and beyond the EEI funding made available through Bonneville.")

BPA established in the IPR process. However, based on the above, we believe that BPA's initial proposal has set power rates higher than needed in order to meet the rate period's programmatic goal. Given our concerns regarding BPA's short-term and long-term competitive position, BPA's power rates should not be any higher than needed to meet the programmatic goal. For this further reason, BPA should take advantage of the opportunity presented by our proposal to lower power rates while still meeting the programmatic savings goals for the rate period.

8 Q. What would be the impact to power rates if BPA were to adopt your proposal?

9 A. We estimate that adoption of this proposal would reduce power rates for the BP-20 rate period by approximately 0.24 percent.

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D. <u>A BALANCED ALTERNATIVE TO BPA's PROPOSED SUPER PEAK</u> CREDIT PENALTY.

14 Q. What does this portion of your testimony address?

15 A. We address BPA's proposal to include, for the first time, a penalty provision applicable
16 only to those preference customers making capacity available to BPA through the Super
17 Peak Credit program.

18 Q. What is the nature of BPA's Super Peak Credit penalty provision?

A. BPA is proposing to include in the capacity calculation for the PF rate new language that would impose on program participants a forfeiture of the Super Peak Credit for an entire month should the customer fail to schedule as little as one megawatt during one hour of a month. The language that BPA is proposing to incorporate this penalty into the PF rate capacity calculation states:

1	If a customer does not supply the Super Peak amount listed in its CHWM
2	Contract, Exhibit A, Section 9 for any hour of the Super Peak Period, then the
3	customer does not receive a Super Peak Credit for that month ²⁴

- Q. What rationale or evidence has BPA offered to justify the inclusion of this new
 penalty charge in Super Peak Credit program?
- A. BPA has offered no testimony or evidence in its initial proposal to justify the inclusion of this new, punitive penalty provision in the Super Peak Credit calculation, or explained the need for it.
- 9 Q. What in your view makes this proposed penalty language unusual?
- First, the Super Peak Credit was proposed in conjunction with BPA's adoption of the 10 A. Tiered Rates Methodology ("TRM") and has been available to preference customers 11 since 2012.²⁵ 12 During this time, the Super Peak Credit program has been open to 13 preference customers without any penalty provision unique to the Super Peak Credit calculation. We are unaware of any change in BPA's circumstances that now makes it 14 necessary to add this new penalty to the Super Peak Credit calculation. Second, this 15 proposed penalty is not commonly used in commercial capacity transactions. We know of 16 17 no long-term BPA capacity purchase which imposes a forfeiture of an entire month's worth of payments the first time any amount of expected deliveries is missed in an hour. 18
- Q. What other initial observations do you have about the proposed Super Peak Creditpenalty provision?
- A. The proposed penalty provision appears to us to be inconsistent with the underlying purpose of the Super Peak Credit program. At the time that BPA and its customers were

²⁴ BP-20-E-BPA-10, at 8. Direct Testimony of the Western Public Agencies Group

formulating the TRM, BPA had a concern, shared by many in the Northwest, that BPA would soon be facing capacity requirements that would exceed its capacity resources. To address this concern, among other steps, BPA substantially increased the capacity charge on a portion of the demand placed on BPA under the PF rate. This was done to send a price signal to preference customers regarding the scarcity value of capacity. BPA also implemented the Super Peak Credit program in an effort to incent preference customers to shape non-federal resources into the super peak periods. Doing so was intended to reduce the capacity that federal resources would be called upon to supply. In our view, including in the Super Peak Credit calculation the proposed penalty, that operates to forfeit the Super Peak Credit for an entire month the first time any portion of the participating customer's delivery obligation is missed, will serve as a huge disincentive for preference customers to help BPA by shaping their non-federal resources into the super peak hours. This proposed penalty essentially defeats the underlying purpose of the Super Peak Credit.

Q. Why have you called the proposed charge a penalty?

A. The proposed forfeiture provision is punitive because it bears no discernible relationship to the harm that BPA might incur as a result of non-performance by a preference customer in supplying the capacity amount it committed to get the Super Peak Credit. By way of example, if a preference customer participating in the Super Peak Credit program delivered to BPA in the first hour of a month, through inadvertence, one megawatt less than it had committed to, BPA would receive an entire month of capacity from such customer's non-federal resources free of charge.

²⁵ TRM ROD, TRM-12-A-01, at 74; *see also* TRM ROD, TRM-12S-A-03, at 67; BP-12-A-03, at 71. Direct Testimony of the

Western Public Agencies Group

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Q. What would be the impact to a participating customer?

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2 Assume that the participating customer had committed 10 MW to all hours of super peak A. 3 period, but in one hour made only 8 MW available to BPA in the month of December. 4 Using the current December demand rate, the participating customer would forfeit over 5 \$16,000 in Super Peak Credit payments while being obliged to continue to deliver 6 capacity during the super peak periods for the remainder of the month. The magnitude of 7 the forfeiture, and value of capacity delivered to BPA without charge for the remainder of the month, far exceed the likely cost BPA would incur to replace 2 MWs of capacity for 8 9 one hour.

10 Q. Is this the only impact on a participating customer?

- Not necessarily. The non-federal capacity is made available by way of an hourly resource declaration in Section 9 of Exhibit A of the participating customer's BPA Power Sales Contract. As a consequence, it operates to reduce the amount of federal capacity that customer has a right to purchase from BPA. In the event that the example of non-performance described above occurs on the customer's system peak, BPA could impose a demand UAI charge on the customer in addition to the Super Peak Credit forfeiture BPA has proposed. Based on the example set out above, the demand UAI would amount to nearly \$30,000. It appears that the operation of the UAI and the forfeiture of the Super Peak Credit would penalize the participating customer by about \$46,000.
- Q. Is it appropriate for there to be consequences should a preference customer participating in the Super Peak Credit program fail to deliver committed capacity?
- A. There should be consequences if a preference customer participating in the program does not supply the amount of capacity it has committed to make available to BPA during

- Super Peak periods. However, such consequences should bear a reasonable relationship to the harm caused to BPA by such non-performance and should be congruent with BPA's treatment of such failures in analogous circumstances.
- 4 Q. Are there examples of consequences for non-delivery that BPA has used in analogous circumstances?
- A. There are instances in which BPA has dealt with analogous situations by imposing sanctions to discourage inaccurate scheduling that are far less severe than BPA is proposing for the Super Peak Credit program.
- 9 Q. Please describe some of these situations and the sanctions BPA has used?
- A good example is BPA's Operating Reserves Business Practice. If a customer is self-10 A. supplying operating reserves, which is a capacity product, they can fail to perform their 11 12 supply obligation six (6) times during a twelve month period before they lose their right to self-supply. 26 This is far more lenient than the proposal to forfeit an entire month's 13 14 Super Peak Credit for one scheduling error. We also understand that BPA has entered into longer term (multiple months) capacity purchase contracts in which the supplier does 15 not suffer a loss of the capacity payment until there have been at least two (2) events of 16 17 failure to supply the contractually required amounts in a given month.
- 18 Q. What characteristics do the two examples you described above have in common?
- 19 **A.** There are two common characteristics. First, the supplying party is given some leeway to accommodate inadvertent errors before a financial penalty is levied for events of non-performance. Second, financial penalties are applied if the events of non-performance

 ²⁶ See Operating Reserves Business Practice, Section H(5).
 Direct Testimony of the
 Western Public Agencies Group
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1		cumulate above a certain level, two in one instance and six in the other. Even inadvertent		
2		errors prompt financial sanctions if they are repeated often enough.		
3	Q.	How would you apply these characteristics to scheduling errors that might occur in		
4		the supply of Super Peak capacity?		
5	A.	We would recommend that BPA adopt a stepped process similar to the examples		
6		described above for non-performance under the Super Peak Credit program:		
7		• For the first non-performance event in the calendar month – Loss of entire Super		
8		Peak Credit for the hour of non-performance.		
9		• For the second non-performance event in the calendar month – Loss of entire		
10		Super Peak Credit for the day during which the non-performance occurred.		
11		• For the third non-performance event in the calendar month – Loss of entire Super		
12		Peak Credit for the entire month.		
13		• For any non-performance event occurring in a month during the same fiscal year		
14		in which three prior non-performances have already occurred, the customer will		
15		lose its entire Super Peak Credit for such month.		
16		• In any month the participating customer is subject to both the loss of the entire		
17		Super Peak Credit and a demand UAI, the customer will be subject to either the		
18		Super Peak Credit forfeiture or the demand UAI, whichever is less.		
19		Under this proposal, an event of non-performance would be a failure to schedule the full		
20		amount of capacity that the preference customer has committed to make available to BPA		
21		during any of the Super Peak hours in section 9 of Exhibit A of its BPA Power Sales		
22		Contract.		

Q. Why do you recommend this approach for the Super Peak program?

A.

A. There are a number of reasons. From BPA's perspective, this approach ensures that BPA is made whole for any failure to supply committed capacity during a super peak period, which is an important equity consideration *vis-à-vis* other customers. Second, BPA is assured that it will not be paying for capacity during super peak hours that has not been made available to it. Third, it escalates the penalty if the frequency of non-performance increases over time, making it reasonably certain that the customer will be strongly incented to rectify any aspect of their resource management that is causing the problem. And it will certainly discourage the customer from intentionally withholding from BPA the contractually committed capacity.

Q. How does this proposal look from the perspective of a preference customer that is participating in the Super Peak Credit program?

While the absence of a financial penalty for non-performance would likely be preferable to a participating customer, the proposal operates in a reasonable manner. Initially, it deprives the participating customer of payment for capacity it does not supply, which in the first instance is fair and should be enough to get their attention. If non-performance occurs again, the proposal operates to materially increase the penalty so that such repeated non-performance hurts financially but without bestowing an inordinate windfall on BPA. It eliminates the potential of a financial windfall to BPA by ensuring that the participating customer is not subject to both a demand UAI and a forfeiture of the Super Peak Credit for the month. Finally, if the participating utility does not heed the warnings inherent in the first two steps, the ultimate penalty of loss of the entire month's Super Peak Credit is levied, with that sanction being the default approach during the ensuing

- twelve months. Under this approach, the sanctions escalate in a reasonable manner,
 match the sanction to the harm potentially inflicted on BPA, and provide a clear incentive
 to perform as promised.
- 4 Q. Would this proposal be reasonably easy for BPA to administer?
- 5 A. We believe that it would. All of the elements necessary to calculate each sanction on a
 6 participating customer are known and determinable. The demand rate is fixed for each
 7 month, and the hourly amounts of capacity to be made available by the customer are set
 8 out by hour in Section 9 of Exhibit A of the customer's BPA Power Sales Contract.
 9 Compared with the calculation of the Load Shaping Charge True-Up Rate, the calculation
 10 of this proposed sanction for non-performance is child's play.²⁷ Its calculation should
 11 impose no great administrative burden on BPA.

Q. Do you have any concluding observations?

It should be kept in mind that preference customers participating in the Super Peak Credit program are doing so, at least in part, to help BPA address a perceived resource need. If a provision needs to be added to impose a sanction(s) for non-performance, such sanction should not be punitive in nature. Rather, it should be designed so that the sanction imposed for non-performance approximates the harm caused to BPA, and in a way that increases the severity of the sanctions imposed if non-performance persists. BPA's proposed penalty does none of these.

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1	Q.	Do you have any observations about other aspects of	the manner in which the Super
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2 Peak Credit program is currently administered?

- A. The Super Peak Credit is paid to customers as a subtraction from the amount of their demand amount, thereby reducing the demand charge on their monthly BPA power bill.

 This is a potential problem for months when the sum of the customer's actual demand and their committed super peak capacity is less than their Customer Demand Quantity ("CDQ"). In such months, even though the customer has fulfilled its contractual capacity commitment to BPA for that month's super peak period, the customer receives no benefit in the form of payment for doing so. A sample billing demonstrating this problem is
- 11 Q. Does this approach also pose issues for BPA as well?

attached as Attachment 1.

12 **A.** In months when the sum of the customer's actual demand and their committed super peak
13 capacity is less than their CDQ, there is no Super Peak Credit payment to the customer.
14 As a consequence, there is no Super Peak Credit to deduct if the customer does not make

available to BPA the capacity it committed to for the super peak period.

- 16 Q. Is there a better approach to administering the Super Peak Credit?
- 17 **A.** The Super Peak Credit should be administered in a manner that compensates the customer when it fulfills its contractual obligation to BPA by making capacity available to BPA during the super peak periods, and making the sanctions for non-performance meaningful. This should be done without regard to the relationship of the customer's peak load on BPA and its CDQ for a particular month.

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Q. How would you recommend achieving these two goals?

A. Rather than treating the Super Peak Credit as a deduction from the customer's demand for a month, and thereby reducing its demand charge, it should be calculated as a dollar amount (PF demand rate x customer's monthly super peak amount) and deducted from the customer's total power bill.

6 Q. What would such an approach accomplish?

A.

It would accomplish a number of things, to the benefit of both BPA and the customer. First, it would ensure that the sanctions for non-performance by the customer would work in all months, regardless of the customer's peak demand and CDQ. This would provide a consistent incentive to the customer to make available to BPA the super peak capacity promised by the customer. Second, it would also result in the customer being paid the Super Peak Credit in all months that it fulfilled its contractual capacity commitment to BPA for the super peak hours, also regardless of the customer's peak demand and CDQ. This is the proper outcome, since the customer remains vulnerable to UAI (both energy and capacity) for its contractual super peak capacity commitment in all months, even those when it receives no payment for such super peak period capacity from BPA. Payment for performance by the customer in making capacity available during super peak periods, and the efficacy of sanctions for failure to do so, should not depend on the changing relationship of the customer's peak demand and its CDQ.

- 1 Q. Would your recommendations regarding is operation of sanctions for non-
- 2 performance change should BPA adopt your above recommendations regarding the
- 3 administration of the Super Peak Credit program?
- 4 A. No, they would not. The recommended change in the administration of the Super Peak
- 5 Credit program would make our proposed sanctions operate even more effectively.
- 6 Q. Does this conclude your testimony?
- 7 A. Yes, it does.

Attachment 1

LOAD FOLLOWING REPORT

Customer: Bill ID:

BENTON RURAL ELECTRIC ASSOCIATION

JAN19-PAT01-10025

Issue Date:

February 04, 2019

TOCA: 0.84526 %

CDQ: 19,351 kW

above RHWM: 8,643 kW

RHWM Tier 1 System Capability

HLH: 3,022,270,092

LLH: 1,869,585,923

Bill Period: Period Ending: January 2019 January 31, 2019

Monthly Hours

HLH: 416 LLH: 328

Tier 1

HLH Load Shaping

Quantity **HLH Energy** 26,084,068 above RHWM (3,595,488)Tier 1 HLH Energy 22,488,580 (25,546,040) HLH SSL (3,057,460)kWh **HLH Load Shaping**

LLH Load Shaping

Quantity LLH Energy 19,068,507 (2,834,904)above RHWM Tier 1 LLH Energy 16,233,603 LLH SSL (15,802,862)430,741 kWh LLH Load Shaping

Demand

Quantity 80,650 Demand CSP above RHWM (8,643)aHLH (54,059)CDQ (19,351)(1,357)Super Peak Demand Charge 0 kW