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REBUTTAL TESTIMONY OF

MARK E. MILLER, SYDNEY D. BERWAGER, CARL T. BUSKUHL,

HARRY W. CLARK, AND S. STANLEY KUSAKA

Witnesses for Bonneville Power Administration

SUBJECT: Rebuttal Testimony for Cost-Based Indexed Rate Options

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5
6 **SUBJECT: REBUTTAL TESTIMONY FOR COST-BASED INDEXED RATE**
7 **OPTIONS**

8 **Section 1. Introduction and Purpose of Testimony**

9 *Q. Please state your names and qualifications.*

10 A. My name is Mark E. Miller. My qualifications are contained in WP-02-Q-BPA-50.

11 A. My name is Sydney D. Berwager. My qualifications are contained in WP-02-Q-BPA-03.

12 A. My name is Carl T. Buskuhl. My qualifications are contained in WP-02-Q-BPA-09.

13 A. My name is Harry W. Clark. My qualifications are contained in WP-02-Q-BPA-12.

14 A. My name is S. Stanley Kusaka. My qualifications are contained in WP-02-Q-BPA-39.

15 *Q. Please state the purpose of your testimony.*

16 A. The purpose of our testimony is to respond to the direct testimony of parties regarding
17 Bonneville Power Administration's (BPA) proposed Cost-Based Indexed Rate options,
18 including the Industrial Firm Power (IP) Indexed Rate (sometimes referred to generically
19 herein as the "variable rate"), and the Priority Firm Power (PF) Indexed Rate. In
20 addition, our testimony responds to the proposal in the direct testimony of the Industrial
21 Customers of Northwest Utilities (ICNU) that BPA develop indexed rates for ICNU
22 industries.

23 *Q. How is your testimony organized?*

24 A. This testimony is in five sections including this introductory section. Sections 2 and 3
25 responds to testimony filed by direct service industrial customers (DSI) that signed the
26 Compromise Approach agreement. Section 4 responds to testimony filed by the Public

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Harry W. Clark, and S. Stanley Kusaka

1 Power Council (PPC). Section 5 responds to testimony filed by ICNU regarding its
2 proposal regarding indexed rates for ICNU industries.

3 **Section 2. Response to the Testimony of the Direct Service Industrial Customers**
4 **(Wilcox)**

5 *Q. The testimony of Mr. Wilcox and Mr. Waddington on behalf of the DSIs (“the DSIs”)*
6 *states that under the Compromise Approach the aluminum price forecast developed in the*
7 *rate case is to be based upon the forecasts of independent consultants, and to the extent*
8 *relevant, forward price curves. Wilcox and Waddington, WP-02-E-DS-02, at 3. Please*
9 *respond.*

10 *A. The Compromise Approach provides that BPA would propose a variable rate based on*
11 *price forecasts and forward price quotes. It does not relegate the use of forward price*
12 *curves (also referred to herein as “forward price quotes” or “forward prices”) to a*
13 *secondary position of consideration, as implied by the DSI testimony.*

14 *Q. Is BPA considering price forecasts, or just forward prices?*

15 *A. BPA is considering both, although it is not possible to consider them in strictly equal*
16 *measure since they measure different things. The variable rate piece of the Compromise*
17 *Approach agreement was based on the principle that BPA was willing to take a moderate*
18 *amount of risk in order to fashion a DSI service package that would help enhance the*
19 *prospects of DSI smelter survivability and preserve smelter jobs. In the Initial Proposal,*
20 *the BPA price forecast, and consequently the midpoint of the IP Indexed Rate, which is*
21 *the point at which the aluminum/power rate equals BPA’s expected cost of service*
22 *(\$23.50/megawatthour (MWh)), was set at approximately 68 cents/lb. (aluminum), or*
23 *about 2 cents/lb. higher than then-current aluminum forward price quotes for the Fiscal*
24 *Year (FY) 2002-2006 rate period. This 2 cent/lb. premium meant that BPA, in addition*
25 *to the other risks of the DSI service proposal, proposed an Indexed Rate \$1.60/MWh*
26

1 below its expected cost, thereby assuming the risk and uncertainty that aluminum prices
2 would, as indicated in the price forecasts, move higher at some point in the future.

3 *Q. Are you saying that BPA was willing to take this 2 cent/lb. risk for the DSIs at least in*
4 *part based on aluminum price forecasts?*

5 A. Yes. BPA is taking into account both forward prices and predictive forecasts of price in a
6 manner that protects the interests of other customers, yet still answers DSI concerns of
7 survivability. The result is a BPA forecast that is roughly 2 cents/lb. higher than forward
8 market price quotes, presenting a reasonably high probability that BPA will recover
9 revenues approximating its estimated cost while still providing DSIs lower power prices
10 should aluminum prices fall. The necessity of such an approach is founded on the fact
11 that BPA will not wait out an aluminum price forecast holding variable rate price risk, a
12 condition needed were BPA to rely exclusively on a price forecast at odds with then
13 current forward prices. Instead, BPA's forecast is weighted toward an Indexed Rate that
14 has a midpoint nearer forward prices, so that BPA can reasonably expect to lay off such
15 risk in a timely manner.

16 *Q. The DSIs state that BPA has not based the Indexed Rate proposal on a reasonable*
17 *aluminum price forecast, and that BPA agreed to do so in the Compromise Approach.*
18 *Wilcox and Waddington, WP-02-E-DS-02, at 5-6. Please respond.*

19 A. We disagree. The Compromise Approach agreement states that the price forecast used to
20 establish the Indexed Rate would include both forward prices and aluminum price
21 forecasts, and BPA believes its proposal balances those two things appropriately and
22 fairly. The more credence BPA places on the accuracy of the optimistic long-term price
23 forecasts, the more risk BPA must assume. We believe the DSIs are asking BPA to
24 accept more risk than is required to meet BPA's fundamental goal for service to the DSIs,
25 which is to enhance DSI smelter survivability while not imposing additional costs on
26

1 BPA's other customers. This BPA approach is reasonable and consistent with the
2 Compromise Approach agreement.

3 BPA is proposing to carry a moderate degree of risk under the Indexed Rate
4 proposal resulting from, among other things, the time outstanding before BPA can
5 actually begin hedging that risk, and the fact that BPA's Initial Proposal was set based on
6 an aluminum price/power rate that was approximately 2 cents/lb. higher than was likely
7 transactable to fully recover expected costs at the time the proposal was made, and so
8 BPA is assuming some aluminum price risk for the DSIs by proposing a forecast on
9 which to base the midpoint that is approximately 2 cents/lb. above the forward price for
10 aluminum. Therefore, some weight was given to the improving outlook for aluminum
11 prices in the future, but only to the extent necessary to meet the goal of enhancing
12 survivability, and at prices that will allow BPA to hedge this risk as soon as practicable to
13 protect BPA's other customers from additional costs.

14 *Q. The DSIs propose that BPA adopt a midpoint for the Indexed Rate based on an aluminum*
15 *price forecast of 74 cents/lb. average over the rate period, with corresponding upper and*
16 *lower pivot points of 80 cents/lb. and 68 cents/lb., and that such a level would be the*
17 *minimum average aluminum price consistent with the Compromise Approach. Wilcox*
18 *and Waddington, WP-02-E-DS-02, at 10. Please respond.*

19 *A.* The DSIs have argued that BPA should use a higher-priced, more optimistic outlook for
20 aluminum based on forecasts they have submitted. BPA does not dispute the methods
21 used by the DSIs to arrive at their forecast, but predictive price forecasts are not reflective
22 of transactable price levels, and, used alone, would be inconsistent with BPA's intentions
23 to lay off Indexed Rate risk as soon as possible. If BPA were to rely solely, or primarily,
24 on such optimistic forecasts as the basis for its forecast, it would be required to carry a
25 significantly larger amount of the Indexed Rate risk than was originally expected. DSIs
26 embracing a more optimistic aluminum price scenario have BPA's fixed price offer as a

1 very attractive alternative to the IP Indexed Rate. Additionally, should higher aluminum
2 prices eventually materialize, then DSI survivability would no longer be an issue. BPA
3 does not believe it can prudently take any greater risks on the Indexed Rate than are
4 contained in its Initial Proposal. That offer had an Indexed Rate midpoint that reflected
5 an aluminum price forecast approximately 2 cents/lb. higher than then-current forward
6 aluminum price quotes for the FY 2002-2006 period, and BPA is proposing to continue
7 to incur that much risk as forward prices and predictive forecasts move between now and
8 the time new power sales contracts are signed. In light of the fact that recent forward
9 aluminum price quotes have moved higher, BPA is willing to consider a shift in the
10 Indexed Rate parameters. Such a shift would tend to recalibrate BPA's risk back to its
11 original offer.

12 *Q. Are you suggesting that BPA may be moving the Indexed Rate midpoint?*

13 *A.* Yes. The concept or principle upon which the midpoint could be moved is founded upon
14 the idea that the midpoint will reflect BPA's forecast of aluminum prices. BPA, in
15 making its forecast, examined both long-term price forecasts and forward price quotes.
16 As we examined these two bases for forecasts for the 2002-2006 period, there was a
17 pattern that the long-term price forecasts were generally higher than forward price quotes.
18 Taking into account that the long-term forecasts are generally higher than forward price
19 quotes, the BPA forecast of aluminum prices, and consequently the midpoint of the
20 Indexed Rate design, is 2 cents/lb. higher than the forward price quote. This price is a
21 reasonable melding of the forecasts BPA has reviewed and allows BPA to manage its
22 risks. BPA's forecast may move to a higher, or lower, number price, as forward price
23 quotes move up or down between now and the time contracts are entered into with the
24 DSIs. Setting the forecast as close in time to when contracts are executed is more
25 advantageous to BPA compared to setting it earlier, because BPA is thereby able to more
26 accurately hedge its risks under the Indexed Rate at that time.

1 *Q. Is this consistent with BPA's Initial Proposal, or is this a new proposal?*

2 A. This is consistent with BPA's Initial Proposal on this issue and is not a new proposal.
3 First, moving the forecast is consistent with the Initial Proposal in the sense that BPA has
4 stated it will give heavy weight to forward price quotes in establishing its aluminum
5 forecast and midpoint because BPA is willing to take on a limited level of risk in order to
6 promote DSI survivability. If the forward market continues to moves in a direction that
7 allows BPA to shift its Indexed Rate design without changing the risks associated with it,
8 then, consistent with its Initial Proposal, BPA intends to do so. Second, waiting to
9 finalize the forecast until contracts are signed, or very near that time, greatly mitigates the
10 risk to BPA from the Indexed Rate. If BPA sets the forecast far in advance of the time
11 contracts are signed, BPA could find itself unable to enter into a swap agreement that
12 would allow BPA to hedge its risk. For example, if BPA were to adopt a forecast in the
13 Final Record of Decision in April 2000 of 70.5 cents/lb., but the price of aluminum began
14 to fall between that time and the time contracts were entered into, price forecasts would
15 likely fall along with them. In this case, BPA could find itself with a forecast of 70.5, but
16 a forward price more than 2 cents/lb below that level, so BPA would be taking more risk
17 than it has proposed to take.

18 *Q. If BPA waits until contracts are signed to finalize the midpoint, won't it be setting a rate*
19 *outside the rate case process?*

20 A. No. BPA will not establish a forecast lower than 66 cents/lb. or one higher than
21 74 cents/lb., thereby bounding the forecast to a range 2 cents/lb. lower than the aluminum
22 forecast in BPA's Initial Proposal and the forecast the DSIs have proposed in their direct
23 case. Such a range within the context of the current Indexed Rate design reflects the
24 potential for a lower pivot minimum of 60 cents/lb. and an upper pivot maximum
25 aluminum price of 80 cents/lb. This potential range of adjustment in BPA's forecast
26 would be responsive to DSIs' concern for low aluminum prices, yet reflective of the

1 potentially higher prices expected in their own forecast. By waiting as long as possible to
2 set the forecast, BPA mitigates, or eliminates completely, the time risk element
3 associated with establishing an Indexed Rate design prior to the date Indexed Rate
4 contracts are signed.

5 *Q. Would BPA hedge the Indexed Rate under all circumstances?*

6 A. BPA still intends to hedge the risk from the IP Indexed Rate. However, it is important to
7 stress that hedging in this instance does not constitute a definable single transaction. As
8 one might expect, any proposal in which two commodities--power and aluminum--are
9 interconnected to produce a variable rate, is a complex transaction. The size and scope of
10 risks from the Indexed Rate will necessitate a series of transactions. No single
11 transaction will guarantee the expected price outcome, and the objective of actually
12 realizing any particular revenue stream under the Indexed Rate cannot necessarily be
13 ensured unless market prices move in BPA's favor. Thus, BPA would carry risk even if
14 the forecast price were precisely in line with market prices for aluminum. Because
15 BPA's goal is to fully hedge its risk from the DSI Indexed Rate, such risks will be laid
16 off in as timely a manner as possible.

17 *Q. What are the consequences to the DSIs of BPA moving the forecast and the midpoint to a
18 higher level?*

19 A. Moving the forecast higher will decrease the power rate by approximately \$.80/MWh for
20 each 1 cent/lb. increment. For example, the midpoint in the Initial Proposal was
21 approximately 68 cents/lb. At this aluminum price, the power rate was equal to
22 \$23.50/MWh. Therefore, moving the midpoint 2 cents/lb. higher would mean a power
23 rate at the original forecast (68 cents/lb.) of \$21.90/MWh, with the \$23.50/MWh rate
24 corresponding to an aluminum price of about 70 cents/lb.

25 *Q. Would this change enhance the prospects for aluminum smelter survivability?*

26

1 A. Both actual and projected power market prices for the next rate period are presently
2 higher than the fixed rates BPA has proposed to offer the DSIs, so any incremental
3 enhancement in survivability from this change would likely come in the case where
4 aluminum prices hover at or around the lower rate limit. If aluminum prices for the
5 2002-2006 period rise beyond their current levels, currently about 69 cents/lb., then the
6 issue of DSI survivability would seem to be diminished in any case.

7 *Q. If BPA moves the midpoint higher will BPA be exposed to greater risk?*

8 A. No. If BPA moves the forecast to continue to track forward prices plus approximately
9 2 cents/lb., absent a hedge it would increase its risk over present aluminum market prices.
10 However, when combined with BPA's proposal to hedge its risk, such a move will only
11 position BPA's risk exposure back to a point approximating its original offer, given the
12 now slightly higher forward price of aluminum. Thus, such a move does not expose BPA
13 to greater risk under the scenario where BPA hedges the Indexed Rate risk with a swap
14 transaction. In fact, such a move probably mitigates BPA's risk under the Indexed Rate
15 slightly.

16 *Q. How could moving the forecast higher mitigate BPA's risks?*

17 A. In order to fully protect BPA's hedge, which is the swap portion of the risk mitigation
18 tools BPA would use to lay off its Indexed Rate risk, it will also be necessary to enter
19 into certain aluminum option transactions. These transactions will be used to limit BPA
20 aluminum price exposure, should aluminum prices rise above the upper pivot. By
21 moving the Indexed Rate midpoint higher, these options will actually cost less than they
22 would have at the original forecast and midpoint.

23 **Section 3. Response to the Testimony of the Direct Service Industrial Customers (Adams)**

24 *Q. The testimony of Mr. Adams on behalf of the DSIs ("the DSIs") states that BPA's*
25 *proposal to set the parameters of the Indexed Rate on a forward price quote rather than a*
26 *price forecast is inconsistent with the Compromise Approach, and demonstrates that BPA*

1 *is not willing to “share market risk with the aluminum smelters.” Adams,*
2 *WP-02-E-DS-01, at 4. Please respond.*

3 A. We disagree. Under its proposal for service to the DSIs, BPA is assuming financial risks
4 related to both the price of aluminum, and the price of power it must purchase in the
5 market to serve DSI load. We believe BPA’s approach to making its forecast, and
6 establishing the midpoint for the Indexed Rate, is consistent with the Compromise
7 Approach. Nevertheless, as we already described, BPA believes it would be appropriate
8 to shift the midpoint higher, or lower, depending on BPA’s final aluminum price forecast.

9 With respect to market risk, as we discussed earlier in this testimony, BPA did
10 share market risk in several ways with the DSIs when it proposed the Indexed Rate.
11 First, the Indexed Rate proposal cost forecast, or point at which BPA’s expected cost of
12 service of 23.5 mills/kilowatt-hour (kWh) intersects with an equivalent aluminum price,
13 was set at approximately 68 cents/lb. This was approximately 2 cents/lb. higher than
14 forward aluminum market price quotes at the time the rate was proposed, based on BPA’s
15 consideration of long-term price forecasts available at the time. This approximately
16 2 cent/lb. spread represents a risk that BPA would not be able to hedge immediately, but
17 only after new DSI power sales contracts become effective. This means BPA was willing
18 to take the risk, on behalf of the DSIs, that aluminum prices would remain, or even
19 intermittently drop, to a level below approximately 68 cents/lb., which represents the
20 average price needed for BPA to recover the Industrial Firm Power Targeted Adjustment
21 Charge rate of 23.5 mills/kWh. From the DSI perspective, this means a lower rate at
22 higher aluminum prices than if BPA had set the forecast exactly at the forward price of
23 approximately 66.5 cents/lb.

24 Q. *Are there other aspects of risk BPA assumed in its Initial Proposal for service to the*
25 *DSIs?*

1 A. Yes. BPA took market risk when it included a curtailment option as part of the
2 Compromise Approach, allowing the DSIs the right to proportionately curtail loads when
3 aluminum prices are below the lower pivot of 62 cents/lb. This is because the concept of
4 a cap and floor, as is the case with the Indexed Rate, allows the purchasers (the DSI) a
5 maximum power rate or cap on power prices. In return, such a cap is usually
6 accompanied by a floor, or minimum price. For an offeror of such a contract feature, the
7 tradeoff is that in agreeing to design the rate with a maximum price (protecting the
8 buyer), the buyer agrees to a minimum price (protecting the seller). The fact that this
9 curtailment feature frees DSIs of a proportional obligation under take-or-pay, leaves BPA
10 with a moderate amount of risk should aluminum prices fall below the lower pivot by
11 removing this minimum price guarantee. In other words, in allowing this curtailment
12 feature, BPA gave up some of its guarantee of a minimum price for power under the
13 Indexed Rate. Such a feature will not entail any risk if power prices remain at their
14 current levels. That is because any power returned under curtailment could be
15 remarketed at higher than Indexed Rate prices. However, if power and aluminum prices
16 fell in tandem, BPA would be exposed to remarketing risk, meaning it could receive a
17 price lower than the minimums established in the Indexed Rate design.

18 *Q. The DSIs state that BPA appears to be proposing an Indexed Rate design that will allow*
19 *it to offset all the aluminum price risk that it assumes through hedging transactions of*
20 *various types, but that by doing so “BPA does not provide any benefit that the smelters*
21 *could not get for themselves by dealing with the underlying financial institutions.”*
22 *Adams, WP-02-E-DS-01, at 5. Please respond*

23 A. The forecast range BPA is proposing gives the DSIs significant protection from downside
24 aluminum prices that would threaten their survivability; to BPA this appears to be a
25 benefit, especially since the forecast is somewhat higher than forward price quotes.
26 Conversely, a forecast set with an eye on the forward price protects BPA’s other

1 customers from Indexed Rate risks that could otherwise not be financially mitigated.

2 BPA has never said or agreed that it could or would do more than this for the DSIs.

3 BPA would prefer that the DSIs take the fixed rate and, if they wish to, negotiate
4 a variable rate through financial institutions. However, BPA is proposing to provide a
5 variable rate in the event that the DSIs are unable, for whatever reason, to adequately deal
6 with their survivability risk through other means. But the variable rate concept was never
7 intended as an indirect means to lower the fixed rate price points of 23.5 or 25 mills/kWh,
8 nor as a means to guarantee additional benefits to the DSIs. BPA's purpose in
9 negotiating and proposing an Indexed Rate for DSIs is to address DSI survivability
10 during times of low aluminum prices. BPA did so, however, within the context of its
11 goal to not increase the rates to its other customers, who were already being asked to fund
12 a substantial portion of the proposal for service to the DSIs. As a consequence, BPA has
13 no reasonable option to deal with the financial risks presented by the Indexed Rate other
14 than to financially hedge it, as soon as is practical. As such, while BPA did agree to take
15 some risk, the amount of risk taken--as evidenced by the design of the Indexed Rate, and
16 the proximity of the BPA forecast to either forward prices or other higher forecasts--was
17 the focus of those negotiations.

18 The DSIs' testimony presents a case for aluminum prices as much as 15 cents/lb.
19 higher in the next rate period. At those higher prices, survivability is not an issue and
20 BPA will not design its Indexed Rate so that those higher aluminum prices are necessary
21 for BPA to recover its costs.

22 *Q. The DSIs state that the significant correlation between aluminum and power prices--that*
23 *power prices and aluminum prices will tend to track each other-- makes BPA an*
24 *"inherently more efficient supplier of risk management services" with respect to the*
25 *Indexed Rate proposal, and that it is therefore not necessary for BPA to fully hedge the*
26 *proposal. Adams, WP-02-E-DS-01, at 6-7. Do you agree with this?*

1 A. No. Power prices in the Western System Coordination Council (WSCC), of which BPA
2 is a member, are driven by fundamental factors experienced in the Western United States
3 including: fuel prices, hydrologic conditions, resource additions and retirements,
4 economic cycles, regulatory actions, and transmission constraints. Although aluminum
5 production is a highly energy intensive process, aluminum commodity prices tend to be
6 tied to a world-wide market and appear to be driven by an assortment of fundamentals
7 that do not seem to have a consistent and observable correlation to electricity price cycles
8 in the Western United States. The DSIs recognize in their testimony that this position
9 cannot be supported by statistical evidence. The contention of a natural hedge is, at this
10 point, conjecture and not something that BPA could rely upon in making decisions
11 regarding the Indexed Rate.

12 *Q. The DSI testimony recognizes that the correlation between power prices and aluminum*
13 *prices cannot be verified by statistical analysis, but suggest that the relationship between*
14 *the price of aluminum, the price of other metals, and the price of exchange traded energy*
15 *products such as crude oil can be used as a proxy. Adams, WP-02-E-DS-01, at 7. Please*
16 *respond.*

17 A. BPA's limited institutional experience in commodities does not lend itself to making
18 significant assumptions about the type of cross-commodity correlation the DSIs are
19 proposing. Therefore, it does not intend to design an Indexed Rate which depends on
20 those relationships.

21 *Q. In Exhibit D to its testimony, the DSIs present a matrix that attempts to analyze BPA's*
22 *risk exposure from the Indexed Rate proposal using different economic and water flow*
23 *conditions, and concludes that BPA faces very little risk. Adams, WP-02-E-DS-01, at 8,*
24 *D-1. Please respond.*

25 A. BPA is purchasing a large percentage of the power to serve the DSIs on a long-term basis
26 at a rate anticipated to average around 28.1 mills/kWh. *See Oliver, et al.,*

1 WP-02-E-BPA-45. Prepurchasing the power does not enter into the DSIs' assumptions
2 surrounding the "natural hedge" concept, which assumes BPA will be purchasing power
3 in the spot market, rather than prepurchasing the power and fixing the cost. In the low
4 aluminum and low power prices condition, BPA is selling power to the DSI customer at
5 significantly below its cost, and if the customer curtailed load or shut down its plant due
6 to low aluminum prices, BPA could be faced with selling power into a market that is less
7 than 19 mills/kWh, and creating a significant loss for BPA. The offsetting scenario of
8 high aluminum prices and high power prices has a cap of 28.5 mills/kWh that limits
9 BPA's ability to offset the risks associated with low aluminum and low power prices with
10 a high power price.

11 *Q. The DSI testimony concludes that BPA is protected against the risk of low aluminum*
12 *prices and low power prices by the fact that the DSIs will likely curtail their load under*
13 *this scenario, allowing BPA to remarket the power "at a profit" but that BPA is*
14 *guaranteed the floor rate which "severely limits BPA's exposure." Adams,*
15 *WP-02-E-DS-01, at 9. Do you agree?*

16 *A.* No. The suggestion that under the curtailment scenario BPA can simply remarket the
17 power "at a profit" is at variance with the DSIs' suggestion that aluminum prices and
18 power prices tend to move in tandem. Also, a market for power above 19 mills/kWh
19 does not represent a profit for BPA if the market price does not exceed the price BPA
20 paid for the power in the first place. Based on BPA's projected cost of service for the
21 DSIs, any sale below 23.5 mills/kWh equals a loss for BPA, so the DSI point concerning
22 guaranteed prices of at least 19 mills/kWh helps, but does not "severely" limit BPA's
23 exposure in a chronically depressed market.

24 *Q. The DSIs conclude that because BPA has a naturally hedged position, additional*
25 *financial hedging will make BPA "overhedged" and place BPA in a speculative position.*
26 *Adams, WP-02-E-DS-01, at 9. Please respond.*

1 A. As noted, BPA has risk exposures associated with its proposed DSI service, but none of
2 these risks are mitigated by “natural” hedges of any kind. The only prudent way to
3 address these risks, absent asking other customers to carry the cost of the risks, is to
4 financially hedge them.

5 *Q. The DSI testimony states that by not proposing an Indexed Rate based more heavily on*
6 *an aluminum price forecast, BPA is forced to manage the risk associated with its*
7 *proposal in a sub-optimal way. Adams, WP-02-E-DS-01, at 10. Do you agree?*

8 A. No. Proposing an Indexed Rate based more heavily on aluminum price forecasts would
9 create more risk for BPA, and the manner in which that increased risk would be mitigated
10 is not a relevant consideration for BPA since it is not willing to incur the higher risk
11 profile in the first place.

12 The DSIs have proposed a fairly robust forecast of aluminum prices. They have
13 the alternative of purchasing power at a below-market fixed price of 23.5 mills/kWh if
14 they view aluminum as under-priced and sure to rise above the proposed Indexed Rate
15 midpoint through the next rate period.

16 *Q. The DSIs state that the forward price supplies information about the market today for*
17 *delivery tomorrow, and not information about the market tomorrow. Adams,*
18 *WP-02-E-DS-01, at 11. Do you agree?*

19 A. We do not completely disagree, but in our case the forward price supplies information
20 today about the market today for delivery over a five-year rate period. A forward price is
21 an offer--in effect a real price--at which buyers and sellers can lock in a price, not just for
22 tomorrow but far out into the future. In many cases this is a financial guarantee backed
23 by the credit of the counter-party, and may not involve any deliveries. In other words, it
24 is today’s price for a single month or months out into the future, and is widely recognized
25 as a vehicle for transferring risk. Indeed, the underlying commodity price tomorrow may
26 be different. It may be higher, but also lower. That is the nature of risk. But BPA agreed

1 to assume aluminum price risk tempered by forward prices. The primary goal of the
2 Compromise Approach was to fashion a proposal for service to the DSIs that would
3 enhance aluminum smelter survivability, while not increasing the rates of BPA's other
4 customers.

5 *Q. The DSIs state that London Metals Exchange (LME) futures prices are poor predictors of*
6 *actual aluminum prices. Adams, WP-02-E-DS-01, at 13-14. Please respond.*

7 *A.* As we have stated, the proposal for service to the DSIs carries some risks and BPA wants
8 to mitigate those risks. BPA is prepared to accept a modest measure of risk under the
9 Indexed Rate, but it does not seem prudent to base the Indexed Rate exclusively on
10 predictions regarding the future price of aluminum, even though there is evidence of a
11 general consensus growing among aluminum analysts that aluminum prices will be rising
12 from current levels during the rate period. BPA's proposal is to provide the DSIs with as
13 much value as it believes it can given its other rate case goals. This requires BPA to lock
14 in a revenue stream based on an Indexed Rate weighed more heavily toward forward
15 price quotes, which may not accurately predict future aluminum prices, but in
16 conjunction with a hedging strategy, does allow BPA to lock in known costs and
17 revenues on this deal.

18 In making its proposal for DSI service under the Indexed Rate, BPA needed a
19 price reference point or index upon which it could confidently lay off the attendant risks.
20 BPA examined potential exchanges upon which aluminum prices were discovered
21 through a fair and open auction process. As a result of this study, BPA concluded that
22 the London Metals Exchange carried the highest liquidity to handle BPA's risk
23 management requirements relating to the Indexed Rate. Furthermore, given the depth
24 and breadth of activity in LME aluminum futures and options contracts, BPA concluded
25 that this exchange was the best arbiter of current aluminum values available.

1 Q. *The DSIs state that because BPA has not disclosed the spread between the put and call*
2 *prices in the forward price quotes it received from Morgan Stanley, it is not possible to*
3 *know “the real transaction costs.” Adams, WP-02-E-DS-01, at 15. Please respond.*

4 A. The context in which the DSIs are phrasing the question suggests BPA would trade the
5 changing values of the Indexed Rate, possibly exposing itself to spread risks that would
6 come from actively buying and selling derivatives. Such a suggestion is incorrect in its
7 assumptions. In hedging the risk of the Indexed Rate, BPA intends to enter into several
8 transactions, all of which are intended to limit BPA’s financial exposure through
9 reducing the variability of revenues. It has no intention of trading any shift in values that
10 may occur once hedges are undertaken. Therefore, as it relates directly to spreads, or the
11 difference between buy and sell prices for such instruments, BPA uses the values it
12 expects to receive or pay out based on the price quotes it receives. As such, the matter of
13 how great or small the spread on a particular derivative (something that is proprietary and
14 not available to BPA in any case) is less important than the price BPA actually pays or
15 receives because it does not intend to close out these positions during the term of the
16 Indexed Rate.

17 Q. *The DSIs state that the forward price quotation BPA will get for a series of forward*
18 *transactions between October 2001 and September 2006 will change from day-to-day as*
19 *the basic primary aluminum price changes. Adams, WP-02-E-DS-01, at 16. Please*
20 *respond.*

21 A. Because prices for the contract period involve 60 individual months, and because the
22 quote given is a single price for those 60 months, the price is not nearly as volatile as a
23 spot quote, which is what we understand the DSIs are referring to here. This is as much a
24 function of the smoothing from averages as it is from the fact that most commodity
25 volatility is in the near-term or spot months. In any case, BPA’s proposal takes into
26

1 account such movements in establishing an aluminum price forecast within the 66 to
2 74 cent/lb. range.

3 *Q. The DSIs state that, given the time-sensitive nature of forward quotes, the chances are*
4 *negligible of BPA achieving a revenue stream equivalent to 23.5 mills/kWh based on a*
5 *forward price quote of 68 cents set in the rate case. Adams, WP-02-E-DS-01, at 16.*
6 *Please respond.*

7 A. This problem is addressed by BPA's proposal to establish its aluminum forecast and
8 Indexed Rate midpoint within the proposed range, as near as possible to the time new
9 DSI contracts are finalized. BPA is aware of the time-sensitivity of all financial market
10 quotes it receives, and acknowledges that it represents a risk to BPA. Such risks are
11 associated with BPA's offer of a variable rate, and form the basis for BPA's proposal to
12 carry a moderate degree of risk in offering service to the DSIs under the Compromise
13 Approach.

14 *Q. The DSIs conclude that if the price of aluminum fell below the floor rate that BPA makes*
15 *windfall profits. Adams, WP-02-E-DS-01, at 17. Is this correct?*

16 A. Only if power prices were to rise substantially above their current market levels. Even at
17 that point, the market prices must be above not only the lower rate limit of 19 mills/kWh,
18 but above the price at which BPA purchased the power for augmentation. This is hardly
19 akin to BPA making a windfall profit any time aluminum prices drop below the lower
20 rate limit.

21 *Q. They suggest that BPA would be better off hedging the risks above the ceiling and below*
22 *the floor through options with major industrial customers of aluminum instead of a*
23 *financial institution. Adams, WP-02-E-DS-01, at 18. Do you agree?*

24 A. BPA does not disagree that a commercial-to-commercial swap is one way BPA could lay
25 off risk. It does not, however, agree such a hedge is necessarily better.

26

1 *Q. The DSI testimony states that a simple program of forward sales would work to*
2 *guarantee a specific price, and that the existence of a floor and ceiling only contribute to*
3 *the need to enter into option transactions to hedge the risk of the price of aluminum going*
4 *above or below those points. Adams, WP-02-E-DS-01, at 18. Please respond.*

5 A. The upper and lower pivots were mutually negotiated limits to the maximum and
6 minimum prices for power that the DSIs would pay. The floor exists to limit potential
7 losses from lower power prices BPA might incur should aluminum prices fall. The
8 ceiling limits potentially higher power costs DSIs would incur if prices rose. If BPA
9 were to adopt an Indexed Rate with neither an upper or lower pivot, BPA would be
10 opening itself to the possibility of receiving virtually no revenues if aluminum prices fell.
11 On the other hand, using the same logic, the DSIs would subject themselves to paying
12 increasingly higher power prices if aluminum continued to rise. While such an
13 arrangement would allow BPA to sell forward on a financial basis, confident that any
14 financial losses incurred from higher aluminum prices would result in correspondingly
15 higher power revenues, such higher power prices would present potential credit risks.
16 Taken to its extreme because of the absence of any pivots, the DSIs could find
17 themselves paying far in excess of the 28.5 mills/kWh power price maximum currently
18 proposed.

19 *Q. The DSI testimony states that the curtailment option, whereby the DSI customer may*
20 *curtail its load if prices are at or below the floor rate, make it impossible for BPA to*
21 *enter into put options to hedge its risk of aluminum prices falling below the floor without*
22 *undertaking speculative risk. Adams, WP-02-E-DS-01, at 19. Please respond*

23 A. Because DSIs hold the right to put back power below the aluminum-power floor rate or
24 lower pivot, BPA cannot prudently sell a put option to offset the cost of a call purchase at
25 the upper pivot. Sale of such a put, and a subsequent drop in aluminum prices below the
26 lower pivot, would mean BPA was “overhedged” or left with a derivative position to

1 hedge a physical sale that no longer existed. Thus, either BPA would not enter into such
2 a sale (of the put), or would immediately remove such position (buy back), if aluminum
3 fell below the floor rate. Given this conclusion, BPA is considering dropping the Indexed
4 Rate Curtailment Option from the Compromise Approach.

5 *Q. They conclude that if BPA had intended to hedge all its risk, it would not have proposed*
6 *the curtailment option. Adams, WP-02-E-DS-01, at 19. Please respond.*

7 *A. BPA never suggested it would be willing to assume the level of risk implicit in a variable*
8 *rate proposal based on aluminum price forecasts it could not fully or nearly fully hedge.*
9 *The Indexed Rate and DSI service in general were designed around negotiations between*
10 *BPA and the DSIs. As such, and in the spirit of compromise, certain contract features*
11 *may have been agreed to despite their impact on BPA's risk management efforts. As*
12 *with any business, BPA must do its best to evaluate such risks, and fashion when*
13 *necessary, appropriate strategies to lay off all or most of these risks. However, as noted*
14 *above, BPA will certainly consider the DSIs' testimony on this point in making a final*
15 *decision.*

16 *Q. The DSIs state that BPA is using a forward price curve as a way of forecasting aluminum*
17 *prices (Adams, WP-02-E-DS-01, at 19), and that if BPA attempts to hedge all of the risks*
18 *that actual prices differ from the forward price curve, BPA will incur heavy transaction*
19 *costs "because of a completely inappropriate rate design." Id. Please respond.*

20 *A. As described in this testimony, BPA is using both forward price quotes and aluminum*
21 *price forecasts in developing its own forecast of aluminum prices. BPA's proposal is to*
22 *establish that forecast approximately 2 cents/lb. above the forward price quote available*
23 *near the time new DSI contracts are signed, but not above 74 cents/lb. or below*
24 *66 cents/lb. This will enable BPA to establish the Indexed Rate parameters in a manner*
25 *that allows BPA to hedge its risk, while still recognizing, through the 2 cent/lb. premium,*
26

1 the more robust outlook for aluminum prices. This proposal actually helps BPA avoid
2 heavy transaction costs.

3 *Q. The DSIs state that it appears from BPA's direct testimony that it has a "reasonable*
4 *comfort level" with a price forecast in the 70-80 cent/lb. range. Adams,*
5 *WP-02-E-DS-01, at 20. Is this correct?*

6 A. BPA's outlook on aluminum prices is reflected in its willingness to accept approximately
7 2 cents/lb. of aluminum risk above forward price quotes for aluminum.

8 *Q. The DSIs claim that using the initial Indexed Rate design based on a 68 cent/lb.*
9 *aluminum price, the median revenues expected were \$1,394 million and the median BPA*
10 *rate was \$26.30/MWh, and that this is not consistent with the Compromise Approach.*
11 *Adams, WP-02-E-DS-01, at 29. Do you agree with this analysis and its conclusion?*

12 A. It is not clear exactly how the DSIs derived these revenue and rate figures. Their claim
13 suggests they have a variable rate power price schedule, and have chosen to pick their
14 aluminum price forecast and derive a revenue figure from that number. Of course, unless
15 aluminum market prices hit that level early in the rate period (the time which BPA would
16 be concentrating on laying off this risk), BPA will not be able to lock in this rate.

17 *Q. The DSIs state that limiting the remarking credit they receive is inconsistent with the*
18 *concept of take-or-pay and will cause them to engage in uneconomic behavior in that*
19 *they may curtail operations when aluminum prices are low, while the ability to sell the*
20 *power at a potential profit could at least partially mitigate the cost of keeping the smelter*
21 *in standby condition pending an improvement in the aluminum market. Adams,*
22 *WP-02-E-DS-01, at 30. Please respond.*

23 A. BPA has no interest in providing an incentive for any of its customers to purchase
24 requirements power from BPA with an expectation of being able to resell that power at a
25 profit. Generally, expectations are that the market price for power will be higher than the
26 BPA price for requirements power during 2001-2006. BPA anticipates that this market

1 expectation will create a high desire to subscribe for BPA power. There are additional
2 costs in BPA's revenue requirement associated with expected over-subscription. An
3 ability for any customer to benefit by reselling the power into a higher-than-cost market
4 would only increase the likelihood of an over-subscription for BPA power.

5 *Q. Absent a change in the remarketing proposal, the DSIs contend that BPA will at times be*
6 *making a windfall profit, and that BPA should take this into account in setting the rate*
7 *parameters. Adams, WP-02-E-DS-01, at 30. Do you agree?*

8 *A. No. In addition to the reasons specified in the immediately preceding answer, it is not*
9 *clear how BPA could reasonably adjust the parameters of the Indexed Rate to account for*
10 *the possibility described by the DSIs.*

11 *Q. The DSI testimony states that the "terms" of service should be identical under the*
12 *Indexed Rate and the fixed rate, and that the current proposal grants more favorable*
13 *treatment to the DSIs choosing the Indexed Rate. Adams, WP-02-E-DS-01, at 31. Please*
14 *respond.*

15 *A. There are valid reasons for allowing a reduction in take-or-pay amounts if the Indexed*
16 *Rate is at the lower rate limit. Primarily, it would allow plant shutdown at a time when a*
17 *DSI cannot cover variable costs even with the Indexed Rate being at the lower rate limit.*
18 *While there is some risk that this power would be returned to BPA at a time when the*
19 *market price of power was lower than the lower rate limit, there is much higher risk that*
20 *the market price of power would be lower than the fixed rate. Also, a reduction in*
21 *production may tighten the market which would improve the survivability of other plants*
22 *and possibly improve revenues BPA would receive from other DSIs using the Indexed*
23 *Rate. However, after considering this comment and examining the effect this take-or-pay*
24 *waiver has on BPA's ability to manage the risk associated with the Indexed Rate, it may*
25 *make sense to eliminate the Indexed Rate take-or-pay relief provision.*

1 **Section 4. Response to the Testimony of the Public Power Council**

2 *Q. PPC states that BPA may be intending to allow the DSIs' to use BPA's credit rating to*
3 *engage in certain hedging strategies. Hansen, et al., WP-02-E-PP-06, at 11-12. Is this*
4 *correct?*

5 A. No. BPA currently has no plans to lend its credit authority to the DSIs to enable them to
6 engage in hedging strategies.

7 *Q. The PPC notes that BPA benefited from past variable rates to the DSIs through*
8 *protection from low power markets, but that this benefit does not exist with the proposed*
9 *variable rate. Hansen, et al., WP-02-E-PP-06, at 13. Do you agree?*

10 A. Yes, PPC is essentially correct. When initially developed in the mid-1980s, the DSI
11 variable rate provided the DSIs with some protection against low aluminum prices,
12 allowing them to continue operations and thereby continue making purchases from BPA
13 during a period of large power surpluses and low energy market prices, thus providing a
14 benefit to BPA. The general belief now is that energy market prices during the
15 2002-2006 period will be fairly robust, so that particular BPA benefit will not occur
16 during this period. BPA is proposing the Indexed Rate for one primary reason: to help
17 mitigate the possibility, during temporary periods of low aluminum prices, of smelter
18 shutdown and the consequent loss of smelter jobs. BPA believes that its proposal under
19 the Compromise Approach will achieve this goal at a reasonable cost to BPA and allow
20 BPA to manage the risk, consistent with its other rate case goals.

21 *Q. PPC states that BPA is going to "take an expected loss" if it does not fully hedge the*
22 *proposed Indexed Rate. Hansen, et al., WP-02-E-PP-06, at 14. Do you agree?*

23 A. No. BPA has agreed to carry a moderate amount of risk in offering the DSIs the Indexed
24 Rate option. As designed and negotiated, this moderate amount of risk evidenced in the
25 rate will not put BPA too far away from current forward price quotes, thus allowing BPA
26

1 to substantially reduce its risk exposure from changing world aluminum prices, so it
2 cannot be concluded that BPA will take an expected loss.

3 *Q. PPC states that BPA does not propose using the actual forward aluminum price to*
4 *establish the expected aluminum price for the Indexed Rate offer, and that under an*
5 *Indexed Rate serving 1,440 MW of load using a center point that is one cent higher than*
6 *the actual forward price, BPA will lose approximately \$10 million per year. Hansen,*
7 *et al., WP-02-E-PP-06, at 15. Please respond.*

8 A. BPA has conservatively estimated that DSI loads entitled to the Indexed Rate total
9 1,270 MW. Under the current rate design, a 1 cent/lb. change in aluminum prices is
10 equivalent to about \$8.9 million annually in revenues. Therefore, if the midpoint is
11 1 cent/lb. higher than forward prices at the time the contract is effective, BPA would be
12 exposed to approximately \$9 million dollars of price risk prior to implementing any
13 hedging strategy. Obviously, if aluminum prices moved higher, the opposite result would
14 occur, so it is not correct to conclude that BPA will incur a loss.

15 *Q. PPC contends that if BPA uses a price forecast instead of a forward quote to set the*
16 *Indexed Rate, that either the forecast will be less than aluminum prices associated with a*
17 *fully hedged offer, in which case the Indexed Rate will be ignored by the DSIs, or the*
18 *aluminum price will be greater than the aluminum prices associated with the hedged*
19 *offer, in which case the Indexed Rate will be accepted by the DSIs resulting in an*
20 *unacknowledged cost to BPA and unacknowledged benefit to the DSIs. Hansen, et al.,*
21 *WP-02-E-PP-06, at 17. Please respond.*

22 A. Using price forecasts with expectations of higher-than-present prices would place the
23 Indexed Rate midpoint at an aluminum price higher than today's price, meaning an
24 effective energy rate lower than 23.5 mills/kWh at today's aluminum prices. In fact,
25 BPA's forecast, which will establish the midpoint, will be established at a point that gives
26 significant weight to forward price quotes, because BPA intends to lay off much of its

1 Indexed Rate risk as soon as practicable once contracts become effective. Therefore,
2 BPA's hedging of such risk is necessary to account for the majority of the risk to BPA
3 associated with the Indexed Rate.

4 DSI acceptance or non-acceptance of the Indexed Rate would likely fall within a
5 particular company's view of future aluminum prices. For those optimistic that prices
6 will rise, their best alternative might be to opt for the fixed price of 23.5 mills/kWh. On
7 the other hand, those expecting lower prices might more likely choose the Indexed Rate.
8 Due to this and other concerns, BPA intends to delay setting the aluminum price forecast
9 that will establish the midpoint until the time DSI contracts are signed. At this point,
10 BPA will know how much Indexed Rate load it needs to manage, and have the latest
11 information regarding aluminum price forecasts and forward price quotes, and will be
12 able to avoid the time lag risks that would occur were there a significant passage of time
13 between setting the rate design and the signing of contracts.

14 *Q. The PPC testimony states that the Indexed Rate parameters adopted by BPA in its Initial*
15 *Proposal are more favorable to the DSIs than parameters considered by BPA in some*
16 *earlier negotiations with the DSIs (Hansen, et al., WP-02-E-PP-06, at 17-18), and that*
17 *BPA should only offer an Indexed Rate and Indexed Rate parameters that can be fully*
18 *hedged. Id. at 20. Please respond.*

19 *A. BPA did originally offer rate parameters more favorable to itself in its earlier proposals.*
20 *These parameters were modified through negotiations between BPA and DSIs. Fully*
21 *hedging these parameters will require more favorable (i.e., higher) moves in aluminum*
22 *prices. However, the placement of these parameters was in keeping with BPA's*
23 *agreement to take a moderate amount of risk in offering the DSIs a variable rate.*

24 *Q. PPC suggests that an unhedged Indexed Rate will expose BPA to greater risks and permit*
25 *the DSIs to "monetize a windfall that might amount to hundreds of millions of dollars."*
26 *Hansen, et al., WP-02-E-PP-06, at 20. Please respond*

1 A. BPA has stated throughout this testimony that it intends to hedge its Indexed Rate risk.
2 However, BPA's decision to do so would not provide any greater or lesser incentive for
3 DSIs to separately seek alternative arrangements through unidentified third parties.
4 Neither is conditional upon the other.

5 Q. *PPC opposes BPA's proposal to price requirements service at the Cost-Based Indexed*
6 *PF Rate, and argues that it is a fiction the rate is cost-based, and that by offering this*
7 *rate design additional risks and costs will be borne by BPA's other customers. Opatrny,*
8 *et al., WP-02-E-PP-02, at 25. Please respond.*

9 A. The Cost-Based Indexed PF Rate is being proposed in this rate case to provide customers
10 with flexibility to choose a floating price under BPA's fixed cost-based rate. As stated in
11 WP-02-E-BPA-21, at 16, the cost-based indexed PF rate is indexed to market and, hence,
12 will rise and fall with market prices. The Cost-Based Indexed PF Rate will be adjusted
13 for BPA's risk and is designed to achieve revenues equivalent to the applicable PF rate.
14 The Cost-Based Index is priced at the time of contract origination and will account for
15 any difference between BPA and market prices when market prices are above the fixed
16 rate PF rate. This difference, minus an insurance fee to guarantee BPA receives a final
17 price no lower than PF, is applied as a monthly adjustment. For billing purposes, such
18 transactions are priced on a cash or financial market each month, with the appropriate
19 fixed adjustment applied each month.

20 In the past, BPA has provided this type of price flexibility under the Flexible PF
21 Rate Option. In making the market indexed pricing available, BPA has received an
22 average price greater than BPA's cost. BPA has used a portfolio approach to manage the
23 risk associated with making this type of pricing flexibility available in conjunction with
24 other BPA risks. BPA is confident that such sales, as they are currently and
25 prospectively structured, will not result in the additional risks alluded to in PPC's
26 testimony.

1 **Section 5. Response to the Testimony of Industrial Customers of Northwest Utilities**

2 *Q. ICNU argues that if BPA provides a variable rate for the DSI companies based on the*
3 *price of aluminum, then BPA should provide variable rates for other large loads served*
4 *by utilities based on variable rates that reflect what those large loads produce.*
5 *Wolverton, WP-02-E-IN-01, at 2. Please respond.*

6 A. ICNU appears to be proposing that BPA establish a direct rate relationship with the
7 ICNU industries, in what would appear to be very close to a direct service relationship
8 between BPA and the ICNU industries. BPA counsel advises that any such direct rate
9 and service relationship between BPA and the ICNU industries may not be permissible
10 under the Northwest Power Act. Even if BPA legally could do what ICNU proposes,
11 BPA sees little advantage to an ICNU variable rate. In order to adequately manage the
12 variable price risk and develop and implement the billing mechanics of such a far ranging
13 rate, the ICNU proposal would require BPA to increase its analytic capabilities in a broad
14 range of commodities that BPA has never previously tracked. In contrast, the proposed
15 DSI Indexed Rate tracks only the aluminum commodity, with which BPA has historical
16 experience.

17 *Q. Is the Indexed Rate available to the non-aluminum DSIs?*

18 A. Yes, but BPA anticipates few if any non-aluminum DSIs will select the Indexed Rate. In
19 order for a non-aluminum DSI to select the Indexed Rate option, the structure of the
20 index must be negotiated with BPA to a mutual agreement. Very specific attributes are
21 required of a non-aluminum commodity index including: (1) it must represent a
22 commodity in which there is sufficient competition and price transparency, evidenced by
23 a commercially recognized price index; (2) the pricing methodology employed in the
24 index must rely on multiple producers; (3) the index must be used commercially to set
25 settlement terms between producers and consumers; and (4) the index must be capable of

1 use for establishing longer term prices and for hedging. *See Miller, et al.*,
2 WP-02-E-BPA-21, at 6.

3 *Q. ICNU argues that offering a variable rate to its customers would enhance the ability of*
4 *Northwest industries to operate over an entire market cycle for their respective products.*
5 *Wolverton, WP-02-E-IN-01, at 2-3. Please respond.*

6 *A. The ICNU testimony argues there is a benefit to the industries without showing any*
7 *adverse effects to those industries if a variable rate is not available. Developing and*
8 *administering an additional variable rate, without adequate need and justification would*
9 *unnecessarily burden BPA.*

10 *Q. Please explain.*

11 *A. The ICNU testimony provides empirical evidence that their customers are in fact*
12 *important to the regional economy, but it does not show the need for an variable rate.*
13 *In contrast, BPA is proposing the Indexed Rate for the DSI aluminum smelters based on*
14 *some analysis that does strongly suggest that such a rate is needed to help enhance*
15 *smelter survivability under low aluminum market conditions. See generally, Miller,*
16 *et al., WP-02-E-BPA-21, and Berwager, et al., WP-02-E-BPA-09. ICNU's testimony*
17 *suggests that establishing a tie between the input price (electricity) and the output price*
18 *(the industrial company's product) will enhance the ability of Northwest industries to*
19 *operate over an entire cycle for their respective products, but does not provide any*
20 *supporting analysis, nor suggest that they would not be able to operate without an*
21 *indexed rate. BPA agrees the ICNU are important to the region's economy, but the*
22 *ICNU testimony does not provide any analysis of the effect of BPA power prices on the*
23 *ability of the ICNU industries to continue to operate, or even show any general concern*
24 *for the survivability of the ICNU industries absent such a rate proposal.*

25 *Q. How would ICNU's proposal be burdensome to BPA? What difficulties would there be in*
26 *administering ICNU's rate proposal?*

1 A. To minimize the price risk to BPA, analysis has to be performed on each commodity
2 prior to settling on a particular indexed rate design for that commodity. A hedging
3 strategy would also need to be developed for each commodity. The index would need to
4 meet all the attributes described above for non-aluminum DSI indexed rates. If the test
5 described above can be met, then a separate billing processes would have to be
6 established for each separate industry to track commodity prices and calculate a rate.

7 *Q. ICNU describes a seven step process it used to develop a variable rate structure that*
8 *would be applicable to its customers. Wolverton, WP-02-E-IN-01, at 4-6. Please*
9 *comment on ICNU's methodology.*

10 A. BPA does not take exception to the methodology suggested, other than to note that any
11 final methodology would need to be one reached through mutual agreement due to
12 potential idiosyncrasies of individual commodities. To establish any standard
13 methodology in advance of BPA actually reviewing the risks associated with any
14 particular industry or associated index would not be prudent. This is because index rates
15 tend to increase BPA's credit exposure and commodity risk. Further, in order to manage
16 such rate arrangements BPA would likely have to increase its risk management and
17 analytical resources to higher than planned levels.

18 *Q. ICNU concludes that because the ICNU industries comprise a substantially larger part of*
19 *the economy than do the DSIs, that it is more important to provide a variable rate to*
20 *these industries. Wolverton, WP-02-E-IN-01, at 7. Do you agree?*

21 A. No, there was no evidence provided to show a variable rate is important to the ICNU
22 irrespective of their importance to the economy.

23 *Q. ICNU asserts that BPA's failure to offer a variable rate to ICNU industries while offering*
24 *a variable rate to the DSIs would result in impermissible discrimination. Wolverton,*
25 *WP-02-E-IN-01, at 9. Please respond.*

26

1 A. BPA is proposing in this rate case to provide power in the 2002-2006 period to many
2 utilities that serve the ICNU industries at prices that are far below market rates, and at
3 average rates below those charged to BPA's DSI customers, so it is hard to understand
4 how these industries are being discriminated against. BPA has proposed a Cost-Based
5 Indexed PF Rate which could be available to the utilities serving the ICNU. The specific
6 index will be based on a negotiated formula, and will track the market price of power.
7 There is always the opportunity for the ICNU industries to propose a variable retail rate
8 to their serving utility.

9 *Q. ICNU states that if BPA decides to hedge the variable rate it is proposing to offer the*
10 *DSIs, that adding the hedging of non-aluminum prices should reduce the risk faced by*
11 *BPA by broadening the scope of risk and providing a measure of diversity to BPA's*
12 *financial operations. Wolverton, WP-02-E-IN-01, at 9. Please respond.*

13 A. BPA does not view the strategy of a variable rate for multiple industries as a suitable
14 means of diversification of risk. Such an approach would tend to intensify the effects of
15 the business cycle, making BPA's other risk areas more susceptible in times of low or no
16 economic growth. This would, in fact, very likely place greater pressure on BPA to meet
17 its cost recovery and treasury repayment obligations. As to hedging such arrangements,
18 BPA would need to examine each request on a case-by-case basis, so that a reasonable
19 expectation of potential outcomes could be examined prior to any offer.

20 *Q. Does this conclude your testimony?*

21 A. Yes.