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REBUTTAL TESTIMONY OF

BYRNE E. LOVELL, EDWARD L. BLEIFUSS,

JAMES C. SAPP, AND VALERIE A. LEFLER

Witnesses for Bonneville Power Administration

SUBJECT: Rebuttal Testimony for Risk Mitigation Study

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Section 1. Introduction and Purpose of Testimony

Q. Please state your names and qualifications.

A. My name is Byrne E. Lovell. My qualifications are contained in WP-02-Q-BPA-44.

A. My name is Edward L. Bleifuss. My qualifications are contained in WP-02-Q-BPA-04.

A. My name is James C. Sapp. My qualifications are contained in WP-02-Q-BPA-62.

A. My name is Valerie A. Lefler. My qualifications are contained in WP-02-Q-BPA-43.

Q. Please state the purpose of your testimony.

A. The purpose of our testimony is to address, clarify, and rebut issues brought forth by the parties' testimonies regarding our Risk Mitigation tools.

Q. How is your testimony organized?

A. This testimony is in four sections including this introductory section. The second section rebuts parties' testimony regarding modeling of the Treasury Payment Probability (TPP). The third section discusses the Cost Recovery Adjustment Clause (CRAC) design. The fourth section addresses issues surrounding the Memorandum of Agreement (MOA) carry-forward relative to starting reserve levels.

Section 2. Treasury Payment Probability Being Modeled Incorrectly

Q. Witnesses for both the Oregon Public Utility Commission (OPUC) and the Northwest Energy Coalition (NWEC) have stated that the method by which the Bonneville Power Administration (BPA) calculates its 88 percent TPP understates the risk of multiple deferrals within the rate period and that a more appropriate method of calculation would

yield a TPP of 79.8 percent. Grist and Carver, WP-02-E-OP-01, at 2-5; and Weiss, WP-02-E-NA-01, at 2-7. Is this correct?

A. No. While it is true that the method of calculating TPP that BPA uses does not distinguish between single and multiple deferrals within a rate period, the method offered by both the OPUC and the NWEC that yields a 79.8 percent TPP contains a statistical flaw. It attempts to average the total deferrals calculated in ToolKit over each of the five years in the rate period and then calculate the likelihood of no deferrals occurring over five successive years. While this calculation would be appropriate if the events being averaged were independent and identically distributed, it is not valid to apply such a calculation to events, like the reserves values calculated in the ToolKit model, that are dependent or serially correlated.

Q. Please explain.

A. In order to make it clear exactly where the error occurred in the alternative TPP calculation proposed by OPUC and NWEC, it is first necessary to clarify a few points about how BPA arrived at its 88 percent standard, how BPA calculates the ability of its Initial Proposal to meet that standard analytically using the ToolKit model, and what statistical inferences can and cannot be made using the results of the ToolKit.

Q. How did BPA arrive at its current TPP standard?

A. As noted in the testimony of DeWolf *et al.*, (WP-02-E-BPA-13, at 22-23), in the 1993 rate filing, BPA adopted as a long-term policy, a 95 percent probability standard of making all Treasury payments during a two-year rate period. In the 1996 rate case, a comparable TPP was calculated for the five-year rate period (*see* WP-96-FS-BPA-02A, at 555-557). This was accomplished by raising the two-year value to the 5/2 power (*i.e.*, $0.95^{5/2} = 0.88$). This conversion was described in the documentation for the 1996 rate case (*see* WP-96-FS-BPA-02A, at 556) and more recently in the Documentation for Revenue Requirement Study, Volume 1, WP-02-E-BPA-02A, at 275-276. In the former document,

BPA chose to illustrate the conversion by calculating the equivalent TPP for a one-year rate period (97.5 percent) and raising this value to the fifth power. The OPUC and NWEC witnesses apparently concluded that this calculation meant that BPA had adopted an annual standard of 97.5 percent for the rate period. This is not the case. BPA does not have probability standards for individual years within rate periods. Instead, the "one year" figure refers to the TPP standard for a *one-year rate period.* In fact, because of the way risk impacts accumulate over time, any sort of calculation which evens out the likelihood of deferrals over the rate period seriously distorts the reality captured by the risk analysis and mitigation models.

Q. What models are used to derive the TPP and how are they used?

A. There are three models involved in the calculation of TPP for the next rate period. Risk Analysis Model (RiskMod) and the Non-Operating Risk Model (NORM) are used to develop distributions of the risk impacts that BPA's power function might incur over the Fiscal Years 2002 - 2006 period. RiskMod calculates net revenue deviation based upon operating risks, while NORM produces a similar calculation for non-operating risks. These deviations are then fed into ToolKit, which uses them to calculate annual ending reserves. Because of the range of risks BPA faces, 3,900 five-year games are run. *See* Documentation for Revenue Requirement Study, Volume 1, WP-02-E-BPA-02A, at 277-287 for a fuller description of this modeling system.

An important point to note is that each of the 3,900 games produced by RiskMod, NORM, and ToolKit attempts to map, as realistically as possible, cumulative risks and risk impacts on cash reserves over the five-year period. The annual values in each of the five-year games are serially correlated, meaning that the reserves values derived in later years are a direct consequence of the particular set of risks and reserves values in earlier years of that particular game.

BPA calculates TPP based upon the percentage of the 3,900 games in which absolutely no deferrals occur, that is, in none of the years in any of the games do reserves fall to $50 million or less (ToolKit will not let reserves fall below $50 million and counts such values as a deferral). This is the equivalent of saying that BPA makes all payments on time and in full for the entire rate period, and BPA has consistently articulated its policy this way. BPA's methodology of calculating TPP counts the successful games, not deferrals, to arrive at 88 percent, hence its name, TPP. As noted by the OPUC in WP-02-E-OP-01, at 2, this could be referred to as a "five-year period TPP." Alternatively, it is possible to use deferrals, rather than games, as the basis for calculating TPP (OPUC refers to their particular method of calculating TPP based upon deferrals as the "five-year average TPP"), but this would pose a fundamental change in direction and policy for BPA.

Q. Is it possible to calculate a TPP-like statistic based on deferrals?

A. Yes. There are probably a number of ways to do this, the most straightforward being to use the percentage of non-deferrals occurring over all the ToolKit runs. Given that there are five years in the rate period and 3,900 games, the total number of reserves values calculated would be 19,500. As noted in Table 1, there were a total of 859 deferrals calculated by ToolKit. The percentage of times that reserves are greater than $50 million is then (19,500-859)/19,500 = 0.956 or 95.6 percent.

Q. But this calculation does not appear to address the issue of games where multiple deferrals occur. Are the OPUC and NWEC witnesses correct in saying that their "five-year average TPP" proposal properly addresses the issue?

A. No. Although the "five-year average TPP" calculation attempts to deal with multiple deferrals by averaging them across years, this procedure is only valid if the reserves values calculated in ToolKit for each of the five years are independent events. As noted above, these reserve calculations are part of unique five-year sequences that display serial correlation. These sequences cannot be meaningfully broken up and rearranged.

Q. Please elaborate.

A. As Table 1 shows, the number of deferrals that occur in each year varies, with only nine occurring in Fiscal Year (FY) 2002 and over 270 occurring in FY 2005 and FY 2006. This is not an arbitrary result. There are only nine deferrals in FY 2002 because the full range of cumulative impacts of both operating and non-operating risks on reserves is insufficient to produce any more than nine deferrals. Similarly, the high deferral rate in the out-years is the result of negative risk impacts accumulating over the rate period and driving reserves down.

As correctly pointed out, many of the games in ToolKit have multiple deferrals. NWEC and OPUC have proposed a methodology that they claim weights the TPP calculations for multiple deferrals.

First, they calculate an average deferral rate per year. As described, in Weiss, WP-02-E-NA-01, at 3-5, this entails: (1) evenly dividing the 859 deferrals among the five years and assigning 171.8 deferrals per year; (2) subtracting that value from the total number of games in each year to yield an average number of non-deferrals per year (3,900-171.8 = 3,728.2); and (3) calculating the average annual percentage of non-deferrals (3,728.2/3,900 = 0.956 or 95.6 percent).

Secondly, they raise this annual value to the fifth power, ostensibly calculating the probability that non-deferrals would occur five years in a row. This value is 0.956^5 = 0.798 or 79.8 percent, which they claim is the TPP accounting for multiple deferrals.

The problem with this calculation is that it is only appropriately applied to events that are statistically independent of one another. If the ToolKit output represented something like 3,900 sequences of five coin flips, where the outcome of one coin toss was totally unaffected by the outcomes of any other tosses, then using an average value to calculate the probability of tossing heads five times in a row would be perfectly valid. But the reserves values calculated by ToolKit are not independent events--if a deferral

occurs in a particular game; it is a direct result of the previous year's ending reserves and the unique risk impacts for that game and that game alone. In addition, the probability of a deferral in the subsequent year would be very high, since that year would start with only $50 million in reserves.

Put differently, deferrals are the unique consequence of a chronological sequence of dependent outcomes that cannot be meaningfully shifted from game-to-game or year-to-year. To obtain the average value of 171.8 deferrals in FY 2002 (instead of the nine actually calculated) would mean, in effect, "moving" an additional 162.8 deferrals into the first year of the rate period from the later years where more of them occur. But in terms of the world the risk models are trying to represent, this would imply that 162.8 times in FY 2002, reserves would end at $50 million as the result of the accumulated impacts of risks that aren't yet present in that year and do not occur until the FY 2003 - FY 2006 period. The described methodology effectively creates a new distribution of reserves values that no longer has any meaningful connection to the events and risks modeled in RiskMod, NORM, and ToolKit. Accordingly, the statistic calculated this way is 79.8 percent, but this is not a meaningful measure of the likelihood of making Treasury payments.

Table 1: Actual vs. Average Deferrals by Year

Year	Actual Deferrals Calculated by ToolKit	Average Deferrals per Year (NWEC/OPUC Estimate)
FY 2002	9	171.8
FY 2003	119	171.8
FY 2004	178	171.8
FY 2005	282	171.8
FY 2006	273	171.8

Q. Witnesses for the Northwest investor-owned utilities (IOUs) argue that "although BPA has adopted a target of 88 percent over the five-year rate period, BPA's proposal falls short of 88 percent TPP. In support of this conclusion, the witnesses cite the "combination of a leveled Planned Net Revenues for Risk ('PNRR') recovery over the rate period and failure to model the Dividend Distribution Clause (DDC) in the ToolKit runs that arrive at the TPP percentage." Stauffer, et al., WP-02-E-AC/GE/IP/MP/PL/PS-04, at 6-9). Do you agree?

A. No. The witnesses arrive at this conclusion based upon two erroneous beliefs: first, that BPA targets a 97.5 percent annual TPP standard; and, second, that lowering average ending reserves necessarily lowers TPP.

Q. Please explain.

A. As noted elsewhere in the response to OPUC and NWEC, BPA has never set a 97.5 percent annual standard for TPP. Rather, 97.5 percent is the equivalent probability for a one year rate period based on the 95 percent two-year standard BPA adopted in 1993. The witnesses correctly note that the annual probabilities of repaying Treasury vary. However, the point is moot. BPA's goal is to make all five annual payments on time and in full 88 percent of the time. Since BPA is not attempting to adjust rates and revenues year-by-year to meet an annual probability target, leveling PNRR across the five years of the rate period does not constitute over-collecting in some years and under-collecting in others.

The witnesses also correctly point out that levels of risk are higher in the later years of the rate period than in the early years. The ToolKit run presented in BPA's Initial Proposal (*see* Documentation for Revenue Requirement Study, Volume 1, WP-02-E-BPA-02A, at 345) shows that collecting a constant $127 million of PNRR offsets the greater out-year risks by amassing higher reserves early on, yielding a TPP of 88.1 percent. This particular ToolKit run, however, did not model the effects of the

DDC, and the witnesses argue that had BPA modeled the DDC with a threshold of $1.2 billion (expressed in terms of cash reserves, which ToolKit models, rather than actual accumulated net revenues), that the reduced availability of funds resulting from distributions in early years would result in increased deferrals in the risk-laden out-years and a TPP of less than 88 percent.

There are two key points that need to be made regarding the witnesses' claim. The first is that even if the DDC is modeled as a reverse CRAC, where dividends are distributed automatically when a particular threshold is reached, there are certain, admittedly high, threshold levels which, although they produce lower final average ending reserves, do not affect the rate period TPP. As can be seen in Attachment A, this was the case for the relatively high DDC threshold used in the initial proposal. Setting the DDC at $1.2 billion as BPA did for the initial proposal, and modeling it as a reverse CRAC, results in substantially lower average ending reserves. Contrary to the claim of the IOUs, this results in absolutely no change in the five-year TPP. (Note: This would not have been the case if threshold levels were lower than $1 billion.)

The second, more important, point is that BPA has not designed and did not model the DDC as a reverse CRAC. Certain Fish Alternatives expose BPA to so much risk that, if they occurred, it would be imprudent to dividend automatically, even at a relatively high trigger threshold. *See* DeWolf, *et al.*, WP-02-E-BPA-39 for a fuller discussion of the DDC design. ToolKit did not have the capability to model the five-year, forward looking financial forecast and TPP test; it could only treat the DDC as though distributions were automatic whenever the DDC threshold is reached. Thus, any estimates it could produce represent "bookends" on ending reserves for the rate period: one case where dividends are never distributed (the ToolKit run in the Initial Proposal), and one where dividends are always awarded in full (in effect, a reverse CRAC). This does not adequately capture the effects of the DDC as BPA has proposed it. Rather than

triggering an automatic distribution of funds, BPA's current DDC design requires that, when a certain threshold is reached, a rolling, five-year forecast of TPP be made based upon conditions at that time. Reserves in excess of the threshold are distributed unless needed to meet the 88 percent TPP goal over the ensuing five-year period.

S*ee* Documentation for Revenue Requirement Study, Volume 1, WP-02-E-BPA-02A, Chapter 12, Appendix 2 for further description of the DDC. Part of the rationale for this DDC design is to deal with the very concern the IOUs articulate--namely, that reducing reserves early in the rate period might, in some instances, later result in deferrals that would not have occurred otherwise. The additional requirement of the five-year forecast of reserves and TPP at the time of implementation provides a means for offsetting the likelihood of additional deferrals resulting from distributing dividends early in the rate period.

Section 3. Cost Recovery Adjustment Clause (CRAC) Design

Q. What is the purpose of this section?

A. In its initial proposal, BPA proposed a specific CRAC design that would satisfy a number of criteria that BPA deemed necessary to meet its cost recovery and environmental obligations, as well as its pledge to keep rates stable (*see* Lovell, *et al.*, WP-02-E-BPA-14). A number of alternative CRAC designs were proposed by various parties--specifically, the OPUC, the Northwest IOUs, jointly filing direct service industries (DSI), the Public Power Council (PPC), and the Northwest Requirements Utilities (NRU)--in their direct cases. It is the purpose of this section to further clarify the rationale underlying BPA's CRAC design and illustrate that all of the alternative designs failed to meet at least one of the criteria that guided BPA's design efforts.

Q. What were the criteria that BPA used when designing CRAC for the initial proposal?

A. Three criteria guided the development of the CRAC thresholds and annual caps for the initial proposal. First, together with PNRR, CRAC levels needed to be set so that BPA

would have an 88 percent probability of making all of its Treasury payments on time and in full over the FY 2002 - FY 2006 rate period. Second, the CRAC values needed to be set high enough to allow BPA to meet its rate goals. In the initial proposal, this required that PNRR be limited to $127 million per year. Finally, CRAC thresholds and caps needed to be set so that, to the extent possible given the first two criteria, they would have minimum impacts on the stability of BPA's firm power rates. This meant that CRAC would trigger only infrequently and with relatively minor rate increases.

Q. *You said that CRAC designs offered by other parties in the rate case failed to meet one or more of these three criteria. Please describe each of the alternative designs and explain which criteria they didn't meet.*

A. OPUC, the IOUs, the DSIs, the PPC, and the NRU all suggested different CRAC designs in their testimony. Each of the parties used ToolKit to perform an analysis of the impacts of each of their proposed designs. (Note: Because ToolKit uses cash reserves rather than actual accumulated net revenues in its calculations, the CRAC thresholds described below will all be expressed in terms of cash reserves.) Some of the parties favored strengthening the CRAC, while others argued that the CRAC should be weakened by reducing the thresholds and annual limits.

Q. *For the parties that advocated a more robust CRAC, what were their reasons and how successfully did their proposals meet the criteria set by BPA?*

A. The OPUC (*see* Grist and Carver, WP-02-E-OP-01, at 9-12) propose two alternative CRAC designs, both of which are alleged to guarantee higher average ending reserves than BPA's proposal while achieving a somewhat differently calculated 88 percent "five-year average TPP." As noted elsewhere in BPA's rebuttal testimony (*see* section 2 of this testimony) this alternative calculation of TPP not only employs a methodology different from BPA's, but is statistically invalid and cannot be used as a substitute for assessing the success of meeting the Treasury payment goal.

Using BPA's method of calculating TPP yields probabilities of 92.6 percent for OPUC's Example 1 and 91.3 percent for OPUC's Example 2. Attachments B and C respectively represent OPUC's Example 1 and Example 2 CRAC designs with TPP calculated using BPA's methodology. Under the first design, the CRAC threshold grows by $200 million increments each year from $300 million to $1.1 billion, while the annual limit is a constant $300 million. The high threshold levels cause CRAC to trigger on average 34 percent of the time over the rate period. This is almost three times the number of CRAC triggers that BPA's design displayed (12 percent).

Under the second design, each year's CRAC cap (or annual limit) is set equal to the CRAC threshold for that particular year. The progression of these values from FY 2002 to FY 2006 is $300 million, $400 million, $500 million, $500 million, and $725 million. CRAC triggers at a rate more similar to BPA's design (17 percent), but the average annual rate increase is much higher. Using a conversion of roughly $55 million in additional revenues to a 1 mill increase in rates, the average size of the revenue increase per CRAC access--that is, per trigger--in the OPUC design ($292.2 million per year) yields an average rate increase of 5.3 mills per year (with the high out-year threshold and cap resulting in a particularly severe 8 mill increase in FY 2006). By contrast, in BPA's design the average size of a rate increase when CRAC triggers would be 2.4 mills, with the largest average increase in any given year being 2.9 mills (*see* Documentation for Revenue Requirement Study, Volume 1, WP 02-E-BPA-02A, at 345). Both of the OPUC designs would result in less rate stability than BPA sought in its CRAC design.

The IOUs (*see* Stauffer, *et al.*, WP-02-E-AC/GE/IP/MP/PL/PS-04, at 10-14) propose a design that contains no PNRR but relies upon high CRAC thresholds and caps (thresholds range from $500 to $900 million, caps range from $300 to $500 million--actually, they argue that CRAC should not be capped, but use these values for analytical

purposes). Relying solely on CRAC obviously results in unstable rates when you observe the average frequency at which the CRAC would trigger--on average, CRAC triggers over 42 percent of the time over the five-year rate period (and nearly two-thirds of the time by FY 2005) with an average rate increase of 4.7 mills each time CRAC triggers.

The testimony of Schoenbeck and Bliven, witnesses for a number of the DSIs (*see* Schoenbeck and Bliven, WP-02-E-DS/AL/VN-03, at 10-12) also propose a CRAC design that eliminates PNRR and employs a CRAC threshold of $675 million across all five years of the rate period with annual caps set at levels $127 million higher than BPA's (*see* Attachment D for the corresponding ToolKit run). Aside from the fact that this CRAC design does not address the issue of rate stability (CRAC triggers 31 percent of the time), it also results in a TPP of only 81 percent, which is considerably short of the 88 percent target in BPA's initial proposal.

All of the proposals developed by the three parties listed above would result in less stable rates for BPA's customers than the CRAC design presented in the initial proposal.

Q. What about the parties that argued for reduced CRAC levels?

A. Both the PPC (*see* Hansen, *et al.,* WP-02-E-PP-03, at 3-11) and the NRU (*see* Saven, WP-02-E-NI-01, at 11-17) argue that BPA should adopt the CRAC it used in its technical workshops before the initial proposal was drafted--with constant annual thresholds of $300 million and constant annual caps of $100 million. PPC and NRU presented this recommendation as part of a package that treated the DDC as a reverse CRAC that automatically triggered at $850 million with a maximum rebate of $155 million (for a discussion of BPA's DDC design, *see* DeWolf, *et al.,* WP-02-E-BPA-39). The ToolKit run upon which this proposal was based also assumed, unlike BPA's modeling, that there would be no risk affecting ending reserves in the remaining years of the current rate period (FY 2000 - FY 2001). This CRAC and reverse CRAC design proposal with the

other assumptions of the PPC/NRU produced a TPP of 85.5 percent, *see* Saven, WP-02-E-NI-01, Exhibit A. This design package produces a TPP lower than BPA's 88 percent standard (and as Attachment E shows, with the risk restored for the two remaining years of the current rate period, the TPP is more accurately described as 83.3 percent). If BPA were to modify its initial proposal by changing only the CRAC design so that it matched the levels proposed by PPC/NRU (that is, without modeling the proposed reverse CRAC and leaving in FY 2000 – FY 2001 risks), it would result in a TPP of 84.5 percent (*see* Attachment F). In all cases, this alternative CRAC design fails to meet the TPP standard of the initial proposal.

Q. *PPC argues that, based on some BPA statements, consumer-owned utilities are exposed to a larger CRAC that triggers as a result of the DSI Compromise Approach. Hansen, et al.,* WP-02-E-PP-06, at 3. *They further argue that additional DSI load subject to the CRAC does not compensate for the significant increase in the size of the CRAC, and that the costs of the increased CRAC should be recovered solely from the DSIs that have agreed to the Compromise Approach. Hansen, et al.*, WP-02-E-PP-06, at 9. *Please respond.*

A. In early 1999, BPA conducted a number of technical workshops that were designed to give potential parties in the rate case a first look at the models, policies, and assumptions that were being considered prior to the development of the initial proposal. At that time, all of the numerical estimates being used in any of the modeling efforts were preliminary and offered solely for purposes of illustration. A number of sample analyses were offered illustrating the impact of different levels of CRAC thresholds and annual caps on rates, and at that time, a particular CRAC design was offered as a reasonable example consistent with BPA goals regarding rate stability. This illustrative CRAC design set a threshold of $300 million, and a cap of $100 million, for each of the five years in the rate period.

During the time between the technical workshops and the filing of the initial proposal all of the models involved in the rate development process--RiskMod, the NORM, the Rates Analysis Model (RAM), and ToolKit--were significantly updated and recalibrated to reflect the most recent historical data and forecasts. The PNRR and CRAC levels presented in the initial proposal represented levels that would meet BPA's rate goals. As it turned out, given the specific set of modeling assumptions made for the initial proposal, the maximum PNRR BPA could bear without a rate increase was $127 million. To meet the 88 percent TPP standard using the CRAC thresholds and caps used during the technical workshops, however, would have required an additional $30 million per year in PNRR. To keep the rate goals, CRAC thresholds and annual caps were increased.

The PPC is correct in its assertion (*see* Hansen, *et al.*, WP-02-E-PP-06, at 10-11) that this higher CRAC is equivalent in TPP value to a total of $150 million in PNRR over the five-year rate period. However, attributing this to the impacts of the DSI Compromise Approach based simply because the $150 million value is "quite close to the $165 million BPA identifies as the cost of additional DSI service" is unwarranted given the magnitude of modeling changes made between the time the "$300 million threshold-$100 million cap" was offered for illustration purposes at the technical workshops and the release of the initial proposal. Revenue and expenses forecasts, risk modeling, starting reserves, PNRR, and CRAC were all revised and/or recalibrated as BPA moved toward the initial proposal to fulfill the Fish and Wildlife Funding Principles (Principles), meet the rate stability pledge, and meet the 88 percent TPP goal.

Q. *Koehler, et al., state at WP-02-E-HL-01, at 39, line 1, that BPA should apply the CRAC to the internal transfer price for Operating Reserves. Do you agree?*

A. This issue is addressed in the testimony of DeClerk, *et al.*, WP-02-E-BPA-51.

Q. The IOUs argue that the CRAC should not be capped. This would allow BPA to use the CRAC if necessary, to collect costs from power customers that are wrongly functionalized to transmission. Alternatively, if the cap is not removed, power sales contracts should contain a specific provision permitting a rate adjustment if necessary to collect any costs functionalized to transmission that Federal Energy Regulatory Commission determines are not transmission costs. Eakin, et al., WP-02-E-AC/GE/IP/MP/PL/PS-01, at 15, lines 8-13. Please respond.

A. For reasons described earlier in this section of testimony, BPA does not believe the cap on CRAC should be eliminated. However, there is potential merit in their argument regarding potential changes in functionalization. BPA will explore the risk, and ensure that any such risk is included in the risk analysis in the final proposal.

Q. The DSIs argue that the Target Adjustment Charge (TAC) component of the Industrial Firm Power (IP)-02 rate should not be subject to the CRAC. Wilcox and Waddington, WP-02-E-DS-03, at 5. Do you agree?

A. No. The IP TAC rate is being set in advance of binding contract load commitments by the DSIs and completion of the system augmentation. It is fixed in the rate case to recover the costs BPA forecasts it will incur to serve the DSIs. However, actual costs incurred to serve the DSIs may differ from forecasts. Therefore, as with any other rate where cost assumptions are set in the rate case, the IP TAC should be subject to adjustment if actual accumulated net revenues fall below the CRAC threshold.

The TAC portion of the Priority Firm Power (PF) rate will be set to recover the actual costs of serving a new PF load at the time the load is placed on BPA. It will be set by contract with the customer after the size of the load and cost of service are known. Therefore, it is not necessary to apply a CRAC to the TAC portion of the PF rate for that load since the TAC rate will be set when we know what actual costs need to be recovered.

Section 4. Starting Financial Reserves

Q. Both the PPC and NRU contend that the expected value of starting reserves is too low. Hansen, et al., WP-02-E-PP-03, at 11 and Saven, WP-02-E-NI-01, at 7. Can you summarize these parties' positions?

A. Yes. The PPC and NRU refer to comments made by BPA's Vice President of Power Marketing, at the PPC Executive Committee meeting in October 1999, that BPA's reserves at the end of FY 1999 were anticipated to be $700 million, which is substantially higher than the $657 million that BPA assumed in its initial proposal. The PPC also states that FY 2000 is expected to be another La Niña year, which implies good hydro conditions, and that BPA's reserves should continue to grow. *See* Hansen, *et al.*, WP-02-E-PP-03, at 11.

NRU (Saven, WP-02-E-NI-01, at 7), also states that "there are no current indications that this positive trend will abate," and that "keeping all other planning assumptions the same, it is reasonable to anticipate a beginning level of reserves of $750 million rather than $685.5 million by October 1, 2001." NRU goes on to say, "there is no reason not to use the most accurate and best starting reserve estimates available."

Q. Does BPA plan to update starting reserves?

A. As BPA stated in DeWolf, *et al.*, WP-02-E-BPA-13, page 34, it plans to update the forecast for FY 2002 starting reserves attributable to power in final proposal studies.

Q. What are the key factors that will drive the final forecast of reserves?

A. The final forecast of reserves will be driven by actual reserves for FY 1999 ($665 million), updated program budgets for FY 2000 and FY 2001, and an updated revenue forecast based on an "early bird" snow pack estimate for water year 2000. This "early bird" snow pack estimate may reflect the La Niña weather pattern referred to by PPC; however, BPA will not be relying on La Niña. The final reserve forecast will be

risk-adjusted using the process described in our initial proposal. Lovell, *et al.*, WP-02-E-BPA-14, at 4, lines 1-13.

Q. What was the vintage of the FY 1999 forecast, and what will be the vintage of the FY 2000 forecast used in the final proposal studies?

A. The initial proposal used the forecast for ending reserves for FY 1999 from the FY 1999 Second Quarter Review (April 1999). That forecast was $657 million. The final proposal studies will use actual reserves for FY 1999 ($685 million) and a forecast of reserves from the FY 2000 First Quarter Review (February 2000).

Q. Columbia River Inter-Tribal Fish Commission (CRITFC)/Yakama Indian Nation (Yakama) and NWEC contend that the forecast of starting reserves is too high. Lothrop, WP-02-E-CR/YA-02, at 8-9, and Weiss, WP-02-E-NA-01, at 19, lines 1-3. Can you summarize their position?

A. CRITFC/Yakama and NWEC state that BPA should not include in starting reserves the carry-forward balance from the 1996 MOA covering BPA's financial commitment for Columbia River Basin Fish and Wildlife (F&W) costs MOA. They argue that the MOA carry-forward balance BPA is being double-counted, because BPA has counted unexpended F&W funding as part of the reserves, and starting reserves are being treated as a risk mitigation tool. *See* Lothrop, WP-02-E-CR/YA–02, at 9, lines 4-7, and Weiss, WP-02-E-NA-01, at 17, lines 7-9.

Q. What are the requirements of the MOA regarding carry-forward balances?

A. The MOA for BPA's F&W budget established a methodology for calculating the carry-forward balance. Below is the provision of the MOA that established the concept of carry-forward balances, and defined its calculation and use at the end of the MOA period. (Section VII, h.)

> **h. Carry-forward balance**. At the beginning of each fiscal year a cumulative total of all previous carry over and carry under amounts shall be calculated by category. Also included in the carry-forward balance shall be the net effect of any interest credits and interest charges. In determining the interest credits or charges for the direct program category, the calculation of the carry-forward balance shall be based on accrual accounting. In determining the amount of funding available for obligation in the direct program category after the first fiscal year of this agreement, the calculation of the carry-forward balance shall be based on obligation accounting. Any funds remaining in these accounts after close of Fiscal Year 2001 will not be reprogrammed for any non-fish and wildlife use, but will remain available for expenditure for the benefit of fish and wildlife.

Q. Has BPA complied with provisions of this clause that guide the calculation of the carry-forward balance?

A. Yes. BPA calculates a cumulative carry-forward balance at the beginning of each year. BPA has also included an interest credit on these carry-forward balances.

Q. Does the MOA provide for a reallocation of the carry-forward balance?

A. Yes. The MOA does provide for a process to reallocate the carry-forward balance among the non-operational categories. Below is the contract clause of the MOA regarding reallocation among categories (Section VIII, l).

> **1. Reallocation among categories**. The "Expenditures Amount Available" the carry-forward balance, and the interest credits or charges pertaining to a category may not be reallocated to another category without the agreement of the parties in consultation with the Council and the Tribes. The parties to this Agreement understand that they and others, including the Council, may develop a more specific process for considering and agreeing upon reallocations of amounts among categories. The Annex describes procedures for allocation of funds to be followed by the Parties.

Q. Does BPA expect any reallocation of the carry-forward balance among MOA budget categories?

A. BPA anticipates that a Regional Plan that addresses funding priorities would need to be in place before funds are reallocated among MOA budget categories. However, as

explained in a question and answer (Q&A) below, BPA will be modeling uncertainty regarding reallocations in its risk analysis for the final proposal.

Q. Do you agree with CRITFC/Yakama and NWEC's position that BPA should not include the carry-forward balance in starting reserves?

A. No. BPA is not double-counting the carry-forward, and consistent with the MOA, it is making an equivalent amount to the carry-forward available for F&W expenditure after FY 2001.

Q. Please explain.

A. BPA has included in annual revenue requirements for FY 2002 - 2006 the weighted average annual expenses of the 13 Alternatives in the Principles. These expenses are reflected in BPA F&W operations and maintenance (O&M), U.S. Army Corps of Engineers (COE) O&M, and the Bureau of Reclamation O&M, capital recovery expenses, and balancing and system augmentation purchases. *See* DeWolf, *et al.*, WP-02-E-BPA-13, at 8. Rates are being set to generate annual revenues sufficient to recover these and other annual expenses in revenue requirements, plus planned net revenues. In this way, annual revenues are set to cover the weighted average of F&W costs in the 13 Alternatives without a reliance on the carry-forward balance.

The forecast of starting reserves includes all projected cash in the BPA fund, a portion of which is attributable to the carry-forward balance. Starting reserves, together with PNRR, CRAC, and access to the Fish Cost Contingency Fund, are treated in the rate proposal as tools to mitigate risks, including F&W costs, such that all costs are recovered on time and in full.

As we explain in a Q&A below, some activities that were assumed in the MOA to be funded in FY 1996-2001 have been rolled forward and included in costs projections for some of the 13 Alternatives for the FY 2002-2006 rate period. Further, an amount of funding equivalent to the carry-forward balance is projected to be available post-2001 by

reason of the fact that F&W costs in revenue requirements are substantially greater than the carry-forward balance. Indeed, F&W costs for the first two years of the new rate period are greater than the carry-forward estimate.

The Principles make no mention of BPA assuming that the F&W costs in FY 2002-2006 will be augmented by the amount of the carry-forward balance, even if funded by the carry-forward balance. In fact, BPA may be prevented from doing so legally.

BPA has a single account at the U.S. Treasury, the BPA Fund, into which all revenues are deposited and from which all expenditures are made. Cash may not be held out or segregated in the Fund without risk of violating priority of payments and other requirements. The MOA does not specify the disposition of carry-forward funds post FY 2001, expect to say that the carry-forward funds will not be reprogrammed to purposes other than F&W recovery and they will remain available for fish.

BPA would have a double-counting problem if it withheld the carry-forward balance from starting reserves because funding for FY 2002-2006 F&W costs is already provided by reason of the weighted average expenses of the 13 Alternatives in annual revenue requirements and by reason of our risk mitigation tools (including starting reserves).

Q. Are there F&W investments that were expected in the MOA to be completed before FY 2002 that are now included in the 13 Alternatives for FY 2002-2006?

A. Yes. In the assumptions for the MOA, surface bypass collectors were to be put into service by FY 2001. Several of the 13 Alternatives have surface bypass investment for the FY 2002-2006 rate period. Another capital investment assumed in the MOA was engineering and design for drawdown on the lower Snake River projects. Of the 13 Alternatives, seven incorporate various levels and combinations of drawdown at the Lower Snake River and John Day projects.

Q. Is BPA reprogramming some of the carry-forward to non-F&W uses and making the carry-forward balance available for expenditure? Lothrop, WP-02-E-CR/YA-02, at 8-9.

A. No, as explained above, BPA is not reprogramming the carry-forward balance to non-F&W uses. The carry-forward balance is being made available for F&W expenditure after FY 2001.

Q. What was the projection of the carry-forward balance for FY 2001 when the initial proposal was prepared?

A. At the time of the initial proposal the projected carry-forward balance for FY 2001 was $203 million. Of this amount, $182 million was related to capital fixed expenses (capital recovery expenses, that is, interest and depreciation).

Q. What is BPA's projected carry-forward balance for ending FY 2001?

A. The current projection is $227 million. We expect this projection to change again before FY 2001. The final proposal forecast is expected to reflect actual plant in service for FY 1999, and an updated forecast of investment to be completed and transferred to plant for FY 2000 and FY 2001.

Q. Do the capital recovery expenses necessarily require cash?

A. No, the depreciation portion does not require cash.

Q. How much of the projected carry-forward balance will be in BPA's reserves?

A. Only the portion of the carry-forward balance that is the difference between the projected and actual cash expenditure is in the "bank" right now (*i.e.*, cash reserves). The current carry-forward balance forecast for the end of FY 1999 is $203 million, of which $175 million is cash that is "in the bank" now. The depreciation amount is not in reserves, because depreciation is a non-cash expense. Incurring depreciation does not mean sending anyone a check. Therefore, an underrun in depreciation expense does not mean that cash has been saved.

Q. What has contributed to the carry-forward balance?

A. The capital recovery expense category is underrunning the projection in the MOA. Two factors are causing this underrun: first Congress has not appropriated the level of funds need to meet the projected construction and installation; and second, COE, the agency responsible for the actual construction of the projects has been unable to accomplish the installation on the schedule originally projected when the MOA was established. BPA incurs a repayment obligation for the power share of appropriations once a facility goes into service. Congress has not authorized appropriations at the levels that were estimated in 1996.

The table below displays Congress' appropriations and the appropriations levels projected by the COE at the time the MOA was being formulated (1995). The first row of the table represents the amount actually appropriated by Congress for Columbia River Fish Mitigation. The second row displays the appropriations forecast needed by the COE for the period to support the MOA.

	1996	1997	1998	1999	2000	Total
Congressional Appropriations	79.9	89.4	98.2	90.0	70.0	427.5
Appropriations per MOA	110.0	130.0	202.00	219.0	78.5	739.5

Q. How has the actual level of investment compared with the estimates in the MOA?

A. The COE has placed less investment in service than was projected with the MOA. Indeed, in FY 1997, the COE removed plant from service, and in FY 1998 transferred no investment into service from construction work in progress, although this plant is still expected to be completed during this rate period. The following table shows the 1996 Rate Case Plan and actual amounts through FY 1998. The amounts in the second row for FY 1999 and FY 2000 are still estimates that are based on projections made at the end of the FY 1998.

	1996	1997	1998	1999	2000	Total
Rate Case Plan – Plant In Service	52.8	68.6	137.1	37.3	41	336.8
Actual Plant in service	45.1	-32.9	0	106.5	18.9	137.6

Q. What effect does this lower level of investment going into service have on the capital recovery expenses?

A. The capital recovery expenses, interest and depreciation, are lower than forecast in the MOA because there is a lower amount of repayable appropriations being charged interest and a lower level of assets being depreciated.

Q. Does the fact that there is a carry-forward balance indicate that BPA is over-collecting revenue in relation to total program levels as argued by Speer et al., WP-02-E-AL/VNEG-02, at 12, lines 16-21?

A. No, it does not indicate that BPA is over-collecting. BPA set rates in 1996 to carry out the terms of the MOA in order to make the funding available for expenditure. The source of the carry-forward is documented above. The carry-forward is not being held out from starting financial reserves, which is to say the carry-forward is being treated as available to mitigate risk.

Q. Did any of the parties suggest that BPA model the probability that the MOA carry-forward balance should be reallocated?

A. Yes. The NWEC recommended that BPA model the uncertainty that some of the carry-forward balance will be reallocated. *See* Weiss, WP-02-E-NA-01, at 19, lines 1-3 and lines 7-9.

Q. In its initial proposal, did BPA model the uncertainty that the MOA carry-forward balance would be reallocated and expended prior to 2002?

A. BPA did not model such an uncertainty in the initial proposal, but does intend to do so in the final proposal. Risk distributions will be added to the NORM for FY 2000 and FY 2001 to determine the risk-adjusted beginning reserves for FY 2002. We expect to model the following probabilities in NORM: a 50 percent chance that none of the carry-forward balance will be reallocated, a 25 percent chance that $5 million will be reallocated, and a 25 percent chance that $10 million will be reallocated. As mentioned earlier, the Administrator has indicated that BPA anticipates that a Regional Plan would need to be in place in order to address funding priorities before proceeding with a reallocation between budget categories.

Q. What types of uncertainty will you be modeling?

A. We will be modeling some probability of the carry-forward balance being reallocated and spent during the remainder of the current rate period. Reallocation would have the effect of reducing both the carry-forward balance and the beginning reserves.

Q. Does this conclude your testimony?

A. Yes.