

2003 Safety-Net Cost Recovery Adjustment Clause Final Proposal

Final Study

Chapter 7 – SN CRAC Design

SN-03-FS-BPA-01

June 2003



1 **CHAPTER 7: SN CRAC DESIGN**

2 **7.1 Introduction**

3 BPA is proposing a contingent, three-year variable SN CRAC adjustment to power rates. The
4 contingent mechanism will incorporate additional savings that have occurred, or are forecasted
5 with a high degree of certainty to occur, in a recalculation of the thresholds and caps in August
6 of 2003 and will also incorporate any Publics-IOU settlement prior to September 15, 2003, or
7 before the SN CRAC August calculations in 2004 and 2005. Under BPA’s proposal, in August
8 of each year the level of SN CRAC for the next fiscal year will be determined by comparing the
9 then-current forecast of PBL’s Accumulated Net Revenue (ANR) to the SN CRAC Threshold.
10 BPA’s SN CRAC proposal contains a cap on the amount of revenue collected annually. BPA’s
11 rate design produces expected values of SN CRAC percentages which, when added to FB CRAC
12 percentages, are constant over the balance of the rate period. BPA is also proposing a refund
13 mechanism in the SN CRAC design to rebate customers for previously collected SN CRAC
14 revenue if PBL ANR exceeds established threshold levels. The annual average expected value
15 for the SN CRAC is about 16 percent above May 2000 base rates. The adjustment in a particular
16 year could be as high as 33 percent or as low as zero, depending on PBL’s financial condition as
17 reflected in PBL’s forecasted ANR. These figures could be reduced in the August 2003
18 Contingent Recalculation or later if there is a Publics-IOU settlement. The SN CRAC is
19 intended to be a supplement to the FB CRAC. To avoid the possibility that the SN CRAC could
20 trigger in a year in which the FB CRAC did not trigger, the FB CRAC Thresholds will be reset to
21 be the same as the SN CRAC Thresholds. The FB CRAC Caps will not be adjusted.

22
23 **7.2 Description**

24 The SN CRAC design is similar to the existing FB CRAC as described in the 2002 General Rate
25 Schedule Provisions (GRSPs), but does not replace the existing FB CRAC. The SN CRAC is a
26

1 temporary, upward adjustment to posted power rates based on the level of forecasted end-of-year
2 ANR in the generation function, as it is defined in the 2002 GRSPs.

3
4 As in the existing FB CRAC, in August of FY 2003, 2004, and 2005, a forecast of end-of-year
5 ANR will be prepared, based on Third Quarter Review data. This forecast will include actual net
6 revenues, as accumulated since FY 1999, to the extent actual financial data is available, plus the
7 forecast of net revenue changes through the remainder of the fiscal year. If that forecast of
8 end-of-year ANR, adjusted for any forecasted FB CRAC revenue, falls below the threshold for
9 that year, the SN CRAC will be implemented in the following fiscal year, and the SN CRAC
10 revenues will be collected over the 12 months of the following fiscal year.

11
12 Because of the structure of BPA's contracts with the customers, each of the three CRACs
13 (LB CRAC, FB CRAC, and SN CRAC) applies to a different but overlapping subset of BPA's
14 customers. Some customers only participate in the LB CRAC, others in only the SN CRAC, and
15 still others in all three CRACs. The GRSPs define the products that are subject to the SN CRAC
16 and the FB CRAC, with additional specification coming from contractual language. The
17 products subject to these two CRACs are not the same. Had BPA proposed implementing an SN
18 CRAC only by modifying the FB CRAC parameters, the distinctions between the applicability of
19 each CRAC to individual products would be lost. BPA chose to implement an SN CRAC and
20 also modify the existing FB CRAC thresholds in order to eliminate this problem and avoid cost
21 shifts between products. The FB CRAC thresholds will be replaced with the thresholds set in the
22 Contingent SN CRAC calculation. Leaving the FB CRAC thresholds unchanged would
23 complicate the application of the FB and SN CRACs to the particular products.

24
25 The SN CRAC contingent mechanism will account for a defined set of future events in
26 August 2003. Through the contingent feature, BPA will include additional savings that have

1 occurred, or are forecasted with a high degree of certainty to occur, in a recalculation of the
2 thresholds and caps in August of 2003. At that time, BPA will also include changes to the
3 forecast of 2003 PBL net revenues due to changes in 2003 hydro conditions or market prices in
4 the recalculation. Any reductions in costs or increased revenues after the August 2003
5 recalculation will be reflected in the ANR calculation in FY 2004 or FY 2005, and will show up
6 as a reduction in the SN CRAC adjustment for the next fiscal year (FY 2005 or FY 2006). Under
7 BPA's proposal, at the time of the contingent recalculation, BPA will change the parameters of
8 the SN CRAC for decreases in the forecasted 2004-2006 O&M budgets for CGS, the Corp of
9 Engineers, Bureau of Reclamation and BPA's Fish and Wildlife program, for changes in
10 2003 PBL net revenue due to changes in hydro supply and/or market prices, an IOU settlement,
11 and for decreases in forecasts of BPA's internal operating expenses.

12
13 BPA also proposes that an IOU settlement that is reached too late to be included in the
14 Contingent Recalculation, but before September 15, 2003, will be incorporated by a final
15 recalculation of the Caps and Thresholds for the SN CRAC (and FB CRAC Thresholds).
16 Additionally, an IOU settlement reached after September 15, 2003, and before August 15, 2004,
17 will be incorporated by reducing the SN CRAC Thresholds (and FB CRAC Thresholds), for the
18 2005 SN CRAC by the amount of the reduction in cash outflow due to the settlement in
19 FY 2005, and by reducing the SN CRAC Thresholds (and FB CRAC Thresholds) for the 2006
20 SN CRAC by the total reduction in cash outflow due to the settlement in FYs 2005 and 2006.

21 22 **7.3 Standards**

23 BPA recognizes that the region's economy is fragile and that a significant rate increase could
24 cause further economic harm. BPA designed the SN CRAC rate to minimize the rate impact on
25 customers over the balance of the rate period. BPA originally introduced three standards in the
26 initial proposal to replace the traditional Treasury Payment Probability (TPP). Those standards

1 included the relaxing of the traditional TPP standard from 87.5 to 50 percent, a Treasury
2 Recovery Probability (TRP) of 80 percent and a requirement that PBL net revenues over the
3 FY 2002-2006 period be zero or greater. Relaxing the TPP standard from 87.5 to 50 percent and
4 bolstering it with the other two standards was reasonable at the time of the initial proposal to
5 ensure a balance between the competing objectives. Given the improvements in BPA's financial
6 condition, BPA believes the combination of the three financial standards tips the balance too
7 strongly in favor of improving BPA's financial condition. While the parties have supported
8 abandoning the zero net revenue and TRP financial standards, maintaining a 50 percent
9 TPP-only financial standard would tip the scales too far the other way and jeopardize BPA's
10 financial condition. BPA is making a smaller relaxation in the TPP standard, from 87.5 to
11 80 percent, and not using the other two financial standards from its initial proposal. Therefore, a
12 TPP financial standard of 80 percent is necessary to ensure BPA has a high probability of
13 making its Treasury payment as called for under the GRSPs. By proposing this relaxation, BPA
14 did not intend to abandon the traditional TPP standard. However, BPA recognizes that the state
15 of the regional economy may not support the size of the potential rate increase necessary to
16 achieve the traditional TPP standard.

17
18 BPA's financial situation could improve or worsen depending on water and market conditions
19 over the balance of the rate period. BPA has developed a variable rate that can ramp up or down
20 depending upon changes in BPA's financial condition. If, in spite of the revenue from the
21 FB CRAC and SN CRAC, BPA encounters another financial emergency, the Administrator will
22 assess the current situation and will have the option of retriggering a new 7(i) process if one of
23 the following criteria is met:

- 24
25 1. BPA forecasts a 50 percent or greater probability that it will nonetheless miss a payment
26 to the U.S. Treasury or other creditor sometime in the then-current fiscal year, or

1 2. BPA has missed a payment to the U.S. Treasury or has satisfied its obligation to the U.S.
2 Treasury but has missed a payment to any other creditor.
3

4 **7.4 Contingent Mechanism**

5 As proposed by BPA, in August of 2003 the parameters of the SN CRAC (the three annual
6 Thresholds and the three annual Caps) will be recalculated if there are:
7

- 8 1. Reductions in BPA's forecasted budgets for FY 2004-2006 for Internal Operations (sum
9 of PBL Internal Operations and Corporate Internal Services);
- 10 2. Reductions in BPA's forecasted O&M budgets for FY 2004-2006 for the Columbia
11 Generating Station;
- 12 3. Reductions in BPA's forecasted O&M budgets for FY 2004-2006 for the Corps of
13 Engineers;
- 14 4. Reductions in BPA's forecasted O&M budgets for FY 2004-2006 for the Bureau of
15 Reclamation;
- 16 5. Reductions in BPA's forecasted budgets for FY 2004-2006 for the BPA Fish and
17 Wildlife Program;
- 18 6. Actual and forecasted changes in PBL's net revenue for FY 2003 due to changes in hydro
19 conditions or market prices;
- 20 7. Negotiated reductions in the magnitude of benefits payments to be made by BPA to the
21 investor-owned utilities for FY 2004-2006.
22

23 Under BPA's proposal, the recalculation of the SN CRAC parameters will meet the 80 percent
24 TPP standard adopted for the SN CRAC. The recalculation of the SN CRAC parameters will
25 result in expected values of total rates (May 2000 base rates plus any applicable CRACs)
26

1 expressed as a percentage change from the total rates for 2003 that are as low as practical while
2 still meeting the 80 percent three-year TPP.

3
4 The contingent recalculation in August 2003 has been carefully designed and will be performed
5 in a very specific manner. Once the adjustments to the enumerated items listed above are
6 known, the recalculation will provide an arithmetic solution as follows.

7
8 1. Determining the size of the annual Caps.

9 A preliminary calculation of the SN CRAC adjustment will be made using the FB CRAC
10 Thresholds from the June 2001 Final Studies and data from the June 2003 Final Studies,
11 except for those items described above that are to be updated. This calculation will use
12 three fixed (deterministic) SN CRAC revenue amounts that yield a 3-year TPP of
13 80 percent and expected values of the sums of the FB CRAC and SN CRAC non-Slice
14 rate impacts, expressed as a percentage of May 2000 base rates, that are the same for each
15 of the 3 years.

16 The Caps for the SN CRAC will be set to be equal to the average of the three annual
17 SN CRAC revenue amounts from step 1, rounded to the nearest \$5 million, plus
18 \$100 million.

19 2. Synchronizing the SN CRAC, FB CRAC, and the Rebate.

20 The Thresholds for the FB CRAC will be set to be the same as the thresholds for the
21 SN CRAC. The Thresholds for the SN CRAC Rebate will be set to be \$15 million higher
22 than the SN CRAC threshold for each year.

23 3. Calibrating the Thresholds.

24 The Thresholds for the SN CRAC will be adjusted until the FY 2004-2006 3-year TPP is
25 80 percent and the expected value of the sums of the FB CRAC and SN CRAC non-Slice
26 rate impacts, expressed as a percentage of May 2000 base rates, are the same for each of

1 the 3 years. (The Thresholds for the FB CRAC and the SN CRAC Rebate are adjusted at
2 the same time.)
3

4 Because changes to the IOU benefits (item 7 above) would be critical to the overall rate level,
5 additional allowances must be made in order to incorporate the impact of a settlement if it occurs
6 sometime after mid-August 2003. The SN CRAC parameters and the thresholds for the
7 FB CRAC and the rebate will be recalculated if the Administrator, based on his sole
8 determination, receives sufficient assurance, such as the signing by the IOUs of unconditional
9 contracts, that the benefits payable to the IOUs during 2004 through 2006 will be either reduced
10 or deferred. The method by which such benefit reductions will be incorporated depends on the
11 timing of the agreement as outlined below.
12

13 1. Agreement Reached Before Approximately August 15, 2003.

14 If an Agreement is reached with sufficient time before the Contingent Recalculation
15 process described above, the cash impacts on BPA of the Agreement will be incorporated
16 through the Contingent Recalculation.

17 2. Agreement Reached After Approximately August 15, 2003, and by September 15, 2003.

18 If an agreement is reached in this time period, a separate recalibration of the Thresholds
19 for the SN CRAC, the FB CRAC, and the Rebate will be made. In this recalibration, the
20 cash impacts on BPA of the Agreement for FY 2004-2006 will be incorporated and the
21 Thresholds adjusted following the methodology described above for use in the
22 Contingent Recalculation (steps 2 and 3 from the description of the Recalculation above).
23 The 2003 ANR projection from the second August workshop will then be used to
24 recalculate the 2004 SN CRAC rate increases. The Administrator will release the revised
25 rates on September 15, 2003, or as soon as practical thereafter, but no later than
26 September 22, 2003.

- 1 3. Agreement Reached After September 15, 2003, and by August 15, 2004, or After
2 August 15, 2004, and by August 15, 2005.

3 If an agreement is reached in one of these time periods, the Thresholds for the SN CRAC,
4 the FB CRAC and the Rebate for the remaining year(s) of the SN CRAC rate period will
5 be adjusted downward by the cumulative total of the cash impacts on BPA. For an
6 agreement reached by August 15, 2004, the SN CRAC, FB CRAC and Rebate Thresholds
7 for 2005 will be reduced by the BPA cash impacts for FY 2005, and the Thresholds for
8 2006 will be reduced by the sum of the BPA cash impacts for FYs 2005 and 2006; for an
9 agreement reached by August 15, 2005, the SN CRAC, FB CRAC and Rebate Thresholds
10 for 2006 will be reduced by the BPA cash impacts for FY 2006. The Cap(s) will be
11 reduced by the change in cash flow for each year (not cumulative change in cash flow).
12 The Recalibrated Thresholds will be released to Parties at the first of the two workshops
13 described below in August of 2004 or 2005.

- 14 4. Conditions Occurring After September 15, 2003, and by August 15, 2004, or After
15 August 15, 2004, and by August 15, 2005

16 If conditions occur in one of these time periods that eliminate reductions or deferrals of
17 benefits payable to the IOUs during 2004 through 2006, that have been used to
18 recalibrate SN CRAC parameters, then the Thresholds for the SN CRAC, the FB CRAC
19 and the Rebate for the remaining year(s) of the SN CRAC rate period will be increased
20 by the cumulative total of the cash impacts on BPA. For benefit reductions for conditions
21 occurring by August 15, 2004, the SN CRAC, FB CRAC and Rebate Thresholds for 2005
22 will be increased by the BPA cash impacts for FY 2005, and the Thresholds for 2006 will
23 be increased by the sum of the BPA cash impacts for FY 2005 and 2006; for benefit
24 reductions occurring after August 15, 2005, the SN CRAC, FB CRAC and Rebate
25 Thresholds for 2006 will be increased by the BPA cash impacts for FY 2006. The Cap(s)
26 will be increased by the change in cash flow for each year (not cumulative change in cash

1 flow). The Recalibrated Thresholds will be released to Parties at the first of the two
2 workshops in August of 2004 or 2005.

3 The variable nature of the rate design will adjust rate levels if BPA reduces costs below the
4 established levels. This fact coupled with the refund mechanism that is adopted as part of the
5 final ROD, will insure that BPA is not increasing revenues unnecessarily at the expense of the
6 region.

7 8 **7.5 Specific Parameters**

9 **7.5.1 Thresholds and Annual Caps**

10 The level of planned SN CRAC revenue collection is limited to the lower of: (1) the amount by
11 which ANR plus forecasted FB CRAC revenue under-runs the threshold; or (2) the maximum
12 amount of the annual cap. The threshold levels for the SN CRAC in this proposal differ from the
13 FB CRAC thresholds in the WP-02 GRSPs because it was not possible to meet the design goals
14 using the WP-02 FB CRAC thresholds for the SN CRAC thresholds. The ANR threshold levels
15 for the remaining three years of the rate period are -\$378 million for FY 2004, -\$204 million for
16 FY 2005, and -\$161 million for 2006. *See* documentation for SN-03 Study, SN-03-FS-BPA-02,
17 chapter 7, in Case “FS #3 BPA’s Proposal.” The annual cap is \$320 million for each of the
18 three years.

19
20 For both the FB CRAC and the proposed SN CRAC, ANR is defined to be the PBL net revenues
21 accumulated from the end of FY 1999, with three modifications: (1) May 2000 Rate Proposal
22 debt service for ENW is used in place of actual ENW debt service levels, (2) net revenue
23 adjustments required by FAS 133 are excluded. *See* Lefler, *et al.*, SN-03-E-BPA-06, and
24 (3) actual and forecasted BPA expenses associated with payments of benefits to the
25 Investor-Owned Utilities as forecasted in the SN-03 initial proposal.
26

Table 7-1 FB CRAC Thresholds and Caps (Maximum Recovery Amounts)

\$ in Millions

FB CRAC for Fiscal Year	ANR Calculated at End of Fiscal Year	FB CRAC Threshold (ANR)	SN CRAC Caps
2004	2003	-\$378	\$150
2005	2004	-\$204	\$150
2006	2005	-\$161	\$175

Table 7-2 SN CRAC Thresholds and Caps (Maximum Recovery Amounts)

\$ in Millions

SN CRAC for Fiscal Year	ANR Calculated at End of Fiscal Year	SN CRAC Threshold (ANR)	SN CRAC Caps
2004	2003	-\$378	\$320
2005	2004	-\$204	\$320
2006	2005	-\$161	\$320

7.5.2 Cost Recovery Adjustment Clause Rebate

While the variable design responds to improvements in BPA’s overall financial condition, given the magnitude of the economic problems in the region, the balance between improving BPA’s finances and mitigating the impacts to the regional economy calls for an additional response. If BPA’s ANR rises to the point that BPA no longer needs to collect the SN CRAC or FB CRAC, it is reasonable for BPA to provide some additional rate relief to its regional customers. BPA will provide a refund mechanism in the SN CRAC design to rebate to customers previously collected SN CRAC revenue if PBL ANR exceeds established threshold levels. The Thresholds for the

1 Rebate are \$15 million above the Thresholds for the FB and SN CRAC. If PBL ANR exceeds
2 the Rebate Thresholds, BPA will rebate half of the amount by which ANR exceeds the
3 Thresholds or the total amount of SN CRAC revenue received, whichever is lower. If this
4 amount is below \$5 million, no Rebate will be distributed.

6 **7.6 Models**

7 The central model used in the Rate Design study is the ToolKit. Detailed explanations of the
8 major inputs and outputs on the main page of the ToolKit can be found in the documentation for
9 SN-03 Study, SN-03-E-BPA-02, chapter 7. The ToolKit is a simulation that runs 3,000 games to
10 determine impacts of rate design. Each game begins with FY 2003 starting reserves of
11 \$197 million for TBL, and -\$9 million for PBL, making a total BPA starting reserve level of
12 \$188 million. It then adds in the net cash flow from the two business lines for 2003, and
13 compares the ending 2003 cash against the BPA working capital level of \$70 million (the sum of
14 the working capital levels for the two business lines). If the ending reserves are less than the
15 working capital level, a deferral is noted; if not, there is no deferral for that year in that game.
16 The ToolKit then goes through the same process for FY 2004, then for 2005, and finally for
17 2006. The process is then reinitialized and repeated for the next game, and then for the other
18 2,998 games after that. TPP is the percentage of games where there is no deferral in any of the
19 years of the rate period (FY 2004 through 2006 is considered to be the SN CRAC rate period).
20 TPP, TRP and net revenue outputs from ToolKit are discussed in greater detail below.

21
22 Two other models play major roles in the Rate Design study by providing input files for the
23 ToolKit. These are RiskMod, which models PBL net revenue risk, and the TBL risk model,
24 which both models TBL net revenue risks and translates TBL net revenues into cash flow. *See*
25 documentation for SN-03 Study, SN-03-FS-BPA- 02, chapter 6. For more information on the
26 TBL risk model, see the Revenue Requirement study documentation for the 2004 Final

1 Transmission Proposal, TR-04-FS-BPA-01A. The names of the files containing the PBL and
2 TBL input files are entered into the ToolKit (cells C3 and C4).

3 4 **7.6.1 Tool Kit Modifications**

5 **7.6.1.1 Changes to ToolKit.** There are five main categories of changes made since the WP-02
6 supplemental proposal. They are (1) transitioning to a post-2002 rate case world; (2) modeling
7 the SN CRAC; (3) changes to the TPP logic; (4) general updates and clean up; and (5) changes to
8 make the ToolKit more useful for this rate case.

9
10 **7.6.1.2 Transition to Post 2002 - Rate Case World.** First, BPA is not using the 13 Fish and
11 Wildlife Alternatives used in the development of the Fish and Wildlife Funding Principles. The
12 2002 Biological Opinion (BiOp) determined BPA's wildlife obligations. This removed the need
13 to use the multiple flow and program regimes. Second, the amount of Slice load is now known.
14 Third, BPA adopted a specific LB CRAC design in the 2002 rate case, so all other LB CRAC
15 options were removed.

16
17 **7.6.1.3 Modeling the SN CRAC.** To model the SN CRAC, BPA enhanced the ToolKit logic
18 and provided cells on the ToolKit's main page for entering the SN CRAC parameters. The
19 choice between a fixed and variable design is entered in cell L11. If the design is fixed, then the
20 entries in the *SN CRAC Planned array* (cells M25:M27) determine the amount of SN CRAC
21 revenue that will be collected in each year. *Choosing Fixed* and *Planned = 0* turns off the
22 SN CRAC. If a variable design is chosen (cell L11 unchecked), then annual caps and thresholds
23 need to be entered (cells N25:N27 and M25:M27). At the beginning of each ToolKit year, the
24 FB CRAC is calculated. Then the starting PBL ANR (adjusted upwards for any FB CRAC
25 revenue already calculated for that year) is compared to the threshold values. If ANR is below
26 the threshold, an SN CRAC is calculated. This amount is the smaller of the gap between the

1 threshold and ANR (adjusted for FB CRAC revenue), and the annual cap. Optional parameters
2 for a variable SN CRAC are the *Deadband* and the *Slope*. BPA's proposal does not use the
3 *Deadband* or the *Slope* parameters. See documentation for SN-03 Study, SN-03-E-BPA-02,
4 chapter 7.

5
6 Another change in the ToolKit made to model the FB CRAC and SN CRAC better was to add
7 logic to track PBL accumulated net revenue (ANR) in addition to tracking reserves. Since the
8 CRAC trigger calculations are made on the basis of ANR, not cash, this is a more accurate way
9 to model the operation of the CRACs.

10
11 In addition to the input and logic changes, BPA made several changes in the outputs reported on
12 the ToolKit's main page. BPA added statistical reports that describe the operation of the
13 SN CRAC design chosen by the user. Some of these output statistics will only be calculated if
14 input variable *CRAC Stats On?* is checked (checked = yes); the ToolKit will run faster if this
15 feature is turned off. These include the expected value of the amount of FB CRAC and
16 SN CRAC revenue per year (separately and combined), the expected value of the FB CRAC and
17 SN CRAC rate increases as a percent of May 2000 base rates (separately and combined), the
18 expected value of the total rate level as a percent change from total 2003 rate level, and the
19 standard deviation of the FB CRAC percentage, the SN CRAC percentage, and of the sum of the
20 FB CRAC, SN CRAC and LB CRAC percentages.

21
22 **7.6.1.4 TPP Calculations.** As explained in Keep, *et al.*, SN-03-E-BPA-04 BPA has used two
23 Treasury payment standards for this rate case. One of them, the Treasury Recovery Probability
24 (TRP), required a change in the Treasury payment logic in ToolKit. With the new logic, the
25 1-year TPP calculation for 2006 will indicate the probability that BPA will be able to make its
26 2006 Treasury payment including the repayment of any previous misses from FY 2003-2005.

1 In the traditional deferral logic, each year starts with the ending reserves from the previous year.
2 Net revenues are then added, and the translation from net revenue to cash is then made. Interest
3 credit is calculated on both the starting reserves and on the net cash flow for the year. These
4 figures are based on the assumption that the entire payment to Treasury is made. The total is
5 calculated and compared to the level of working capital assumed for the run. If the ending cash
6 balance is below the level of working capital, this indicates that making the full Treasury
7 payment would leave BPA short of working capital, and a deferral is made. First Federal
8 amortization is deferred (rescheduled) out of the rate period. Interest is calculated on this
9 deferred amount, and is payable annually. If deferring the entire amount of amortization is not
10 sufficient to leave BPA with its (input) working capital, then interest payments are deferred.
11 These payments become due the next year, along with one year of interest. (All interest
12 calculations use the interest rate BPA receives on the Bonneville Fund, which is the weighted
13 average interest for BPA's Federal debt.) A year cannot end with reserves lower than the
14 working capital amount under the traditional logic.

15
16 Under the new logic, the year-end cash balance is calculated as before, and compared to the
17 working capital level. If the cash balance is below the working capital level, a deferral is noted
18 for later reports, but the ending reserves are allowed to go negative. This is essentially the same
19 as deferring all of the missed payments, amortization as well as interest, until the next year. A
20 Treasury payment can only be made successfully under this logic if any misses from previous
21 years have been made up.

22
23 Including TBL data does not change the fundamental TPP logic. Previously, ToolKit started
24 with PBL cash, added in PBL net revenue, translated to PBL cash, and compared the ending
25 reserve balance to the PBL working capital of \$50 million. Now ToolKit starts with PBL and
26 TBL cash, adds in PBL net revenue, translates it to PBL cash, adds in the TBL cash flow, and

1 compares the ending reserve balance to the total BPA working capital level of \$70 million.
2 While the basic logic is the same, BPA has not updated the “traditional deferral logic” since
3 adding separate tracking of TBL and PBL reserves, and it is not fully functional. However, this
4 does not affect the calculation of the 3-year 2004-2006 TPP. The only differences in the TPP
5 calculations in the two versions of deferral logic come after a year in which there is a deferral.
6 There are no deferrals in 2003 in the final study data. If there is a deferral in 2004 or 2005, that
7 game will be consigned to the non-success category, and whether or not there is deferral later in
8 that game will have no effect on the 3-year TPP results.

9
10 **7.6.1.5 General Updates.** BPA made some miscellaneous changes to improve the interface of
11 the ToolKit. For example, there are several new “switches” on the ToolKit’s main page that turn
12 features on or off. Many of these previously required entering “TRUE” or “FALSE” in certain
13 cells. These have been changed to use Excel checkboxes.

14
15 BPA added a worksheet (“Cell_Notes”) that has a description of each of the important cells on
16 the “TK_Main” worksheet where the main input parameters go and the output statistics appear.
17 BPA also updated the *OnTheFly* logic that can reduce the time it takes to iterate to a particular
18 solution. None of the changes affect the TPP results, but they make some runs more efficient for
19 the user.

20
21 **7.6.1.6 Changes Specifically for this Rate Case.** Several outputs have been added to supply
22 statistics specifically for this rate case. BPA added a calculation of the approximate total net
23 revenue for the four years FY 2003-2006. Since current runs of the ToolKit do not include fiscal
24 year 2002, the net revenue for 2002 needs to be added to the 4-year total the ToolKit reports to
25 produce a rate period total. The actual 2002 PBL FB CRAC net revenue was negative
26 \$390.5 million.

1 ToolKit reports the expected value of several SN CRAC statistics. It also includes a report of the
2 total rate level for each year. The 2003 total includes both the LB CRAC and the FB CRAC.
3 The total for the later years also includes any SN CRAC increase. If this statistic is 3 percent,
4 this indicates that the 2004 rate with all three CRACs is 3 percent higher than the 2003 rate with
5 all of the CRACs for 2003 (that is, the LB and FB CRAC).

6
7 **7.6.2 RiskMod.** The RiskMod model generates the file of risk data for PBL used by the
8 ToolKit. This model is described in chapter 6 of the SN-03 Study, SN-03-E-BPA-01.

9
10 **7.6.3 Transmission Risk Analysis.** To quantify the effects of risk on the finances of BPA's
11 transmission function, TBL analyzes the effects of uncertainty in costs and revenues on
12 transmission cash flows using a Monte Carlo simulation model. For ToolKit purposes, the TBL
13 risk analysis model is run for 3,000 iterations, which provides 3,000, 4-year sets of net cash
14 flows for FY 2003-2006. These 3,000 sets of net cash flows are inputs to ToolKit for purposes
15 of calculating BPA net cash flows and TPP. *See* chapter 8 of the Revenue Requirement study
16 documentation of the 2004 Final Transmission Proposal, TR-04-FS-BPA-01A.

17
18 **7.6.4 Accrual-To-Cash Adjustment.** In the 2002 Power Rate Case BPA argued that the
19 triggers for the CRAC (which became the FB CRAC in the three-component design of the
20 supplemental proposal) should be accrual or net revenue-based rather than reserves-based. *See*
21 Lovell, *et al.*, WP-02-E-BPA-14, at 7. Although modeled in terms of cash values in the ToolKit
22 model, a relatively simple conversion formula was used to set the FB CRAC trigger thresholds
23 based on ANR (supplemental proposal, WP-02-E-BPA-69, Appendix 1, pp. 5-20 through 5-22).
24 Since the publication of the supplemental proposal, BPA's financial situation has become a
25 source of concern and, accordingly, a more precise specification of the relationship of net
26 revenues to cash is needed to support SN CRAC analysis.

1 Part of the inputs to the revised ToolKit are accrual to cash adjustments for each of the business
2 lines. The spreadsheet presented in Table 7-5, ToolKit Net Revenue to Cash Adjustments,
3 provides a detailed crosswalk between net revenue values from PBL's Income Statement
4 combined with values from TBL's cash flow statement (*see* Table 7-4, Statement of Cash
5 Flows – Transmission Business) and cash reserves and TPP calculations made in the ToolKit
6 model. In particular, it calculates the values of the annual *Accrual to Cash* adjustment inputs
7 used by ToolKit. It performs these calculations in several steps.

8
9 **7.6.4.1 Step One: Determine Agency Net Revenues.** Agency net revenues (line 3) are
10 determined by adding PBL (line 1) and TBL (line 2) net revenues. The calculations of TBL Net
11 Revenues are found in Table 7-3. The TBL net revenues are the same as those contained in the
12 2004 Final Transmission Proposal, with one change described below.

13
14 For BPA's 2nd Quarter Review and the SN CRAC final proposal, interest income for PBL was
15 calculated to be \$10 million for FY 2003, based on a more accurate methodology for tracking
16 PBL's and TBL's monthly contributions to Agency reserves. The new methodology lowered the
17 interest income credit for TBL, resulting in a forecast loss of \$25.2 million for the TBL.
18 Therefore, the FY 2003 interest income credit in Table 7-3 was lowered by \$7.6 million to get
19 the TBL net revenue for FY 2003 to match the 2nd Quarter Review forecast. For the SN CRAC
20 final proposal, the sum of the TBL and PBL interest income credits is \$20.8 million, compared to
21 an Agency total of \$21 million from the 2nd Quarter Review. Without the change, total interest
22 income would total \$28.3 million, and FY 2003 net revenue would be over-stated by
23 \$7.6 million.

24
25 **7.6.4.2 Step Two: Adjust for Other Sources of Cash Provided by Operating Activities.** The
26 Net Revenues reported in line 3 need to be adjusted to reflect a number of other sources of cash

1 reported in the Income Statement in order to yield the amount of Cash Provided by Operating
2 Activities (line 9). These adjustments are found in five line items on the spreadsheet.
3 Adjustments are made for *Depreciation/Amortization* (line 4) and *Interest Adjustments* (line 5)
4 because they are included in the net revenues but do not affect cash. The remaining adjustments
5 made in this step - for *ENW Net Billing Prepaid Expense* (line 6), *Residential Exchange Deferral*
6 (line 7), and miscellaneous other (the values of lines 26-31 summed in line 8) - account for
7 timing differences between when these items are included in the Income Statement and when
8 they are received or paid in cash.

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TABLE 7-3: Statement of Revenues and Expenses - Transmission Business

	(\$ millions)	2002	2003	2004	2005	2006
Operating Revenues						
1.	Transmission Revenues	505.341	471.666	516.507	540.985	549.029
2.	Ancillary Services Revenues	136.773	130.135	137.148	143.237	145.945
3.	Delivery Segment Revenues	11.962	9.481	6.104	6.221	6.337
4.	Fiber & PCS Revenues	16.365	11.630	11.802	11.983	12.163
5.	TBL Services Revenues	10.247	10.000	10.000	10.000	10.000
6.	Other Revenues & Credits	39.692	30.381	36.863	37.059	37.353
7.	Total Operating Revenues	720.380	663.294	718.424	749.485	760.826
Operating Expenses						
8.	Transmission G&A	19.221	16.000	17.481	17.918	18.366
9.	CSRS Pension Expense	27.600	17.600	15.450	13.250	11.600
10.	Transmission Marketing	15.003	15.000	15.373	15.758	16.152
11.	Transmission Scheduling	8.826	8.200	8.368	8.578	8.792
12.	Transmission System Operations	35.161	36.300	37.455	38.391	39.351
13.	Transmission System Maintenance	75.061	73.700	79.996	81.996	84.045
14.	Transmission System Development	16.181	10.817	12.824	13.144	13.473
15.	Wheeling/Leases	5.769	5.883	6.030	6.181	6.335
16.	Environment	5.005	4.500	4.495	4.607	4.722
17.	Transmission Support Services	16.280	16.000	17.634	18.075	18.527
18.	TBL Services Expenses	8.713	10.000	10.000	10.000	10.000
19.	Between Business Line Expenses	80.705	84.275	80.303	80.303	80.303
20.	Corporate Expenses	50.988	53.801	61.498	63.978	62.659
21.	Total Transmission Operating Expense	364.512	352.076	366.907	372.178	374.325
22.	Federal Projects Depreciation	161.042	170.354	178.813	190.746	199.884
23.	Total Operating Expense & Depreciation	525.553	522.430	545.720	562.924	574.209
24.	Net Operating Revenue	194.826	140.864	172.704	186.561	186.617
Interest Expense						
25.	Interest on Appropriated Funds	66.902	65.279	63.484	60.790	61.497
26.	Interest on Long-Term Debt Issued to Treasury	133.814	145.159	162.990	174.795	188.710
27.	Interest Credit on Cash Reserves	(20.589)	(10.771)	(19.983)	(20.279)	(23.932)
28.	Amortization of Capitalized Bond Premiums	3.914	3.914	3.914	3.451	3.220
29.	Capitalization Adjustment	(19.618)	(19.786)	(19.752)	(18.968)	(20.115)
30.	AFUDC	(13.639)	(17.750)	(24.493)	(23.500)	(23.889)
31.	Net Interest Expense	150.784	166.045	166.160	176.289	185.491
32.	Total Operating & Net Interest Expenses	676.337	688.475	711.880	739.213	759.700
33.	Net Revenues	44.043	(25.181)	6.544	10.272	1.126

1 **7.6.4.3 Step Three: Update Estimates of Non-Federal Debt Service Values.** BPA has revised
2 its estimates of debt service from the values presented in the Supplemental Proposal. To reflect
3 BPA's current financial position the following adjustments were made. The values for
4 *non-Federal debt service* presented in BPA's Income Statement (that correspond to those used in
5 the Supplemental Rate Case) are added in line 10. Current estimates that reflect BPA's active
6 refinancing and restructuring of the principal payments of the ENW portion of this debt service
7 are subtracted in line 11. Additionally, the values of *Planned Advanced Amortization of Federal*
8 *Debt*, a use of cash not included in the Income Statement, are subtracted in line 12. The total
9 impact of these three adjustments appears in line 13.

10
11 **7.6.4.4 Step Four: Account for Cash Elements Not Included in Income Statement.** Several
12 additional items not reported in BPA's Income Statement have an effect on cash and are
13 identified and adjusted for in lines 14-17. These include the addition of *Cash from Reserve Fund*
14 *Free-ups and the Bank of America Settlement* (line 14) and the subtraction of *Scheduled Federal*
15 *Debt Amortization* (line 15), *Transmission Revenue Financed Capital Investments* (line 16), and
16 *Accelerated Repayment of long-term Debt* from the sale of TBL delivery facilities (line 17). The
17 *Annual Change in Cash Balance* reported in line 18 is the result of adding these four adjustments
18 to the sum of lines 9 and 13, the cash provided by operating activities adjusted for revised debt
19 service values.

20
21 **7.6.4.5 Step Five: Isolate Changes in Cash Exclusive of Net Revenues.** After determining the
22 annual change in cash balance (line 18), the spreadsheet calculates the *Accrual to Cash*
23 adjustment for PBL that is used by ToolKit. ToolKit receives 3,000 sets of net revenue values as
24 inputs from RiskMod. This *Accrual to Cash* adjustment transforms those net revenues into cash,
25 allowing the estimation of both ending reserves and TPP. The size of this adjustment (line 21) is
26 determined through two calculations. The first ascertains the size of the total agency change in

1 cash exclusive of net revenues (line 22) by subtracting total agency net revenues (line 3) from the
2 *Annual Change in Cash Balance* (line 18). The second calculation nets out the PBL portion by
3 subtracting the TBL increase in cash exclusive of net revenue (line 20) from the total agency
4 change reported in line 22.

5
6 Thus, the *Accrual to Cash* input variable in ToolKit represents the PBL portion of the adjustment
7 that converts net revenues into cash (line 21 of Table 7-4). The values of the *TBL Acc to Cash*
8 input fields in ToolKit are all zero because the 3,000 sets of inputs developed by the
9 Transmission risk analysis for use in ToolKit are cash, not net revenue, values, and correspond to
10 line 23 in Table 7-4. These values correspond to those in the *TBL Inputs* field in the ToolKit
11 output.

TABLE 7-4: Statement of Cash Flows - Transmission Business

	(\$ millions)	2002	2003	2004	2005	2006
Cash Provided by Current Operations						
1.	Net Revenues	44.0	(25.2)	6.5	10.3	1.1
Expenses not Requiring Cash						
2.	Depreciation/Amortization	161.0	170.4	178.8	190.7	199.9
3.	Amort of Capitalized Bond Premiums	3.9	3.9	3.9	3.5	3.2
4.	Capitalization Adjustment	(19.6)	(19.8)	(19.8)	(19.0)	(20.1)
5.	Revenue Recognition (Third AC)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)
6.	Revenue Recognition (Fiberoptics)	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)
7.	Proceeds from Sale of Assets	6.8	6.3	3.9	4.3	3.7
8.	Payments for Stranded Investments/Defaults	4.1				
9.	AFUDC	(13.6)				
10.	Clark Settlement					
11.	Materials & Supplies	0.1				
12.	Cash Provided by Current Operations	181.4	130.3	168.1	184.5	182.5
Cash Used for Capital Investments						
Investment in						
13.	Gross Utility Plant and CWIP	(261.7)	(322.6)	(335.0)	(284.7)	(428.3)
14.	Cash Used for Capital Investments	(261.7)	(322.6)	(335.0)	(284.7)	(428.3)
Cash From Borrowing and Appropriations						
15.	Cash from Borrowing & Appropriations	297.3	355.2	320.0	269.7	408.3
16.	Debt Reassignment (from Corporate)		219.0			
17.	Repayment of Long-term Debt	(107.8)	(116.6)	(115.9)	(153.5)	(110.0)
18.	Accelerated Repayment of Debt (Debt Mgt.)		(219.0)			
19.	Accelerated Repayment of Debt (Asset Sales)		(9.9)	(7.6)	(3.9)	(4.3)
20.	Repayment of Capital Appropriations	(23.9)	(26.2)	(38.3)	(1.5)	(38.6)
21.	Subtotal Cash from Borrowing & Approp	165.6	202.4	158.2	110.8	255.4
22.	Annual Change in Cash Balance	85.4	10.2	(8.7)	10.7	9.6
23.	Plus Beginning Cash Balance	79.2	164.6	174.7	166.0	176.7
24.	Year End Cash Balance	164.6	174.7	166.0	176.7	186.3
25.	Deferred Borrowing	32.6	0.0	0.0	0.0	0.0
26.	Total Reserves	197.2	174.7	166.0	176.7	186.3
27.	Annual Change in Reserves	\$118.0	(\$22.4)	(\$8.7)	\$10.7	\$9.6

Table 7-5: TOOLKIT NET REVENUE TO CASH ADJUSTMENTS

(\$ MILLIONS)		FY 2003	FY 2004	FY 2005	FY 2006
Net Revenues					
1	Power	\$23.333	\$8.894	(\$116.489)	(\$124.637)
2	Transmission	(\$25.181)	\$6.544	\$10.272	\$1.126
3	Total	(\$1.848)	\$15.438	(\$106.217)	(\$123.511)
4	Depreciation/Amortization	\$348.654	\$355.655	\$375.631	\$391.059
5	Interest Adjustments	(\$63.176)	(\$63.061)	(\$60.841)	(\$62.219)
6	ENW Net Billing Prepaid Expense	(\$25.914)	(\$41.104)	(\$6.015)	\$5.091
7	Res. Exch. Deferral	\$55.000	\$0.000	\$0.000	\$0.000
8	All Other	(\$30.298)	\$26.542	(\$22.700)	(\$26.143)
9	Cash provided by operating Activities	\$282.418	\$293.470	\$179.858	\$184.277
10	Add: ENW Debt Service in Income Stmt.	\$565.829	\$557.479	\$505.215	\$539.804
11	Less: Current Estimated ENW Debt Service	(\$208.973)	(\$300.752)	(\$540.275)	(\$542.982)
12	Less: Planned Advanced Amortization of Federal Debt	(\$315.400)	(\$346.000)	(\$40.000)	(\$60.000)
13	Total	\$41.456	(\$89.273)	(\$75.060)	(\$63.178)
14	Add: Cash from Reserve Fund Free-ups + B of A Settlement	\$85.744	\$0.000	\$0.000	\$0.000
15	Less: Scheduled Federal Debt Amortization	(\$216.586)	(\$246.508)	(\$303.098)	(\$277.113)
16	Less: Transmission Revenue Financed Capital Investments	\$0.000	(\$15.000)	(\$15.000)	(\$20.000)
17	Less: Accelerated Repayment of long-term Debt (Asset Sales)	(\$9.900)	(\$7.600)	(\$3.867)	(\$4.300)
18	Annual Change in Cash Balance	\$183.133	(\$64.911)	(\$217.167)	(\$180.314)
19	Net revenue to cash Increase (decrease)				
20	TBL (from TBL Statement of Cash Flows)	\$2.733	(\$15.242)	\$0.400	\$8.458
21	PBL TOOLKIT INPUT (line 22 - line 20)	\$182.248	(\$65.107)	(\$111.350)	(\$65.261)
22	TOTAL (line 18 - line 3)	\$184.981	(\$80.349)	(\$110.950)	(\$56.803)
23	TBL INCREMENTAL CASH FLOW (line 2 + line20)	(\$22.448)	(\$8.698)	\$10.672	\$9.584
24	Line 8: All Other by major elements				
25	TOTAL	(\$30.298)	\$26.542	(\$22.700)	(\$26.143)
26	Slice True-up	\$33.219	(\$35.337)	(\$17.416)	\$1.845
27	Misc. revenue and expense lags	(\$65.924)	\$33.021	\$1.046	(\$7.530)
28	Terminated contracts	(\$8.589)	\$2.332	\$2.311	(\$1.731)
29	Proceeds from Asset Sales-TBL only	\$6.259	\$3.867	\$4.300	\$3.667
30	Enron	\$12.129	\$22.659	(\$12.941)	(\$22.394)
31	Other	(\$7.392)	\$0.000	\$0.000	\$0.000

1 **7.7 Outputs**

2 Results from TPP Analysis of BPA’s Proposal

3 2004 to 2006 three-year TPP: 80 percent.

4 2006 TRP: 85 percent.

5 Approximate PBL net revenue 2002-2006: -\$139 million.

6
7 **Table 7-6 – CRAC Revenues and Ending Reserves**

1	Expected Values	2004	2005	2006	2004-6 Total
2	SN CRAC revenue	141.0M	164.6M	154.7M	460.3M
3	FB CRAC revenue	86.9M	74.0M	85.5M	246.4M
4	Ending BPA reserves	408M	361M	351M	n/a

12
13 **Table 7-7 – CRAC Percentages and Frequencies**

1	Expected Values	2004	2005	2006	2004-2006 Average
2	SN CRAC rate percentage	15.0 percent	17.0 percent	15.7 percent	15.9 percent
3	FB CRAC rate percentage	11.1 percent	9.1 percent	10.3 percent	10.1 percent
4	Total rate percentage	51.4 percent	54.0 percent	54.3 percent	53.2 percent
5	Total rate above 2003 total	3.6 percent	5.4 percent	5.5 percent	4.8 percent
6	FB CRAC trigger frequency	99 percent	86 percent	88 percent	90 percent
7	SN CRAC trigger frequency	99 percent	86 percent	88 percent	90 percent

1 **7.8 Analyses Supporting Rate Design Decisions**

2 The following discussion regarding eight ToolKit runs is summarized in Table 7-8.

3
4 **7.8.1 FS#1, Final Study Data with No SN CRAC.** ToolKit run

5 “TK_187_SN-03_FS#1_No_SNN_24-Jun-03.xls” shows that without an SN CRAC, BPA’s
6 projected 2006 ending reserves are -\$48 million, and the 3-year TPP is 41 percent.

7
8 **7.8.2 FS#2, Fixed, Flat SN CRAC.** The first step in calculating the SN CRAC parameters is
9 to determine the amount of SN CRAC revenue that would be needed in each of the 2004-2006
10 years to meet the 80 percent TPP standard if the revenue is assumed to be a fixed amount, not
11 dependent on ANR calculations. This corresponds to Step 1, Determining the Size of the Caps,
12 in the August 2003 Contingent Recalculation. Since there are no relevant Thresholds for the
13 SN CRAC, the FB CRAC Thresholds from the WP-02 rate case are used for the FB CRAC. The
14 ToolKit is set to use a Fixed SN CRAC, and the Planned Amounts are adjusted until the
15 three-year TPP is 80 percent and the sum of the FB CRAC and SN CRAC percentages (above
16 May 2000 base rates) is constant across the 3 years. The average amount of SN CRAC revenue
17 required is \$218 million per year. The average rate increase above 2003 total rates is 7.6 percent.
18 See ToolKit run “TK_187_SN-03_FS#2 Fixed_Flat_SNN_24-Jun-03.xls.”

19
20 **7.8.3 FS#3, BPA’s Proposal – A Variable, Flat SN CRAC.** The SN CRAC Caps have been
21 set to \$320 million, which is the average annual amount of SN CRAC revenue required in the
22 previous run (FS#2), rounded to the nearest \$5 million, plus \$100 million. The average change
23 from the 2003 total rates is 4.8 percent. The average FB CRAC and SN CRAC percentage
24 increases are 10.1 percent and 15.9 percent respectively (above May 2000 base rates).

1 **7.8.4 FS#4, Variable, Flat SN CRAC Meeting Traditional, 87.5 percent TPP Standard.**

2 This run shows the rate increase level that would be needed to meet BPA’s traditional TPP
3 standard, 80-88 percent for a 5-year period, translated into 87.5 percent for the three-year
4 period 2004 – 2006. These two TPPs are considered to be equivalent because they would result
5 in the same probability of making all of the Treasury payments on time in a series of independent
6 rate periods. In this comparison, five 3-year periods are compared to three 5-year periods.
7 BPA’s traditional standard would result in a probability of 80 percent x 80 percent x 80 percent =
8 51.2 percent, and 87.5 percent x 87.5 percent x 87.5 percent x 87.5 percent x 87.5 percent =
9 51.29 percent. The average change from the 2003 total rates is 6.5 percent, considerably higher
10 than the 4.8 percent in BPA’s Proposal. This rate design was derived by first determining the
11 fixed amounts of SN CRAC revenue that would be needed to meet the 87.5 percent TPP
12 standard, adding \$100 million to the rounded average of the fixed amounts, and then calibrating
13 the Thresholds until the 3-year TPP was 80 percent and the sum of the FB CRAC and SN CRAC
14 percentages (above May 2000 base rates) was constant across the 3-year SN CRAC period.

15
16 **7.8.5 FS#5, SN CRAC Meeting the Three Financial Standards of the Initial Proposal.**

17 This run shows the rate levels needed to meet the three financial standards BPA described in
18 BPA’s initial proposal (3-year TPP of at least 50 percent, 2006 TRP of at least 80 percent, and
19 total PBL net revenue for 2002 through 2006 of at least zero). The average rate levels would be
20 7.6 percent above the total 2003 rate level, and the average FB CRAC and SN CRAC percentage
21 increases would be 11.0 percent and 19.3 percent respectively (above May 2000 base rates).
22 This run uses the Caps from BPA’s Proposal, \$320 million each year, and therefore differs from
23 FS#4, where the Caps were derived separately, and are \$370 million each year. Both cases
24 achieve a 3-year TPP of 87.5 percent, but FS#4 does not meet the zero net revenue standard.

1 **7.8.6 FS#6, \$50 Million of Shaped Improvement in BPA's Financial Condition,**

2 **Recalculated as in the August Contingent Recalculation.** This run shows the results of a
3 recalculation of the SN CRAC Parameters and the FB CRAC Thresholds as if improvements in
4 BPA's financial condition eventuated by August. Specifically, this run uses the 2003 PBL net
5 revenue has improved \$20 million due to changes in hydro conditions and market prices, and that
6 reductions in O&M budgets of \$7.5 million for 2004, \$10 million for 2005, and \$12.5 million for
7 2006 are forecasted. A fixed, flat SN CRAC was calibrated, requiring an average of
8 \$200 million per year to achieve an 80 percent TPP. This set the SN CRAC Cap size at \$200 +
9 \$100 = \$300 million in each year. After calibrating the Thresholds to meet the 80 percent TPP
10 standard, the average rate increase above 2003 total rates is 3.6 percent; the average FB CRAC
11 and SN CRAC percentages are 9.8 percent and 14.3 percent respectively (above May 2000 base
12 rates).

13
14 **7.8.7. FS#7, SN CRAC Meeting 80 percent TPP with PBL-Only reserves.** Run FS#7 shows
15 the rate levels necessary to meet the 80 percent TPP standard using only PBL reserves. This run
16 was begun by setting the Cap sizes to \$100 million above the average amount of fixed SN CRAC
17 revenue needed to meet an 80 percent PBL-only TPP standard. The Thresholds were then
18 adjusted, and the resulting average rate increase above 2003 total rates is 10.4 percent. The
19 average FB CRAC and SN CRAC percentages are 11.3 percent and 23.6 percent respectively
20 (above May 2000 base rates).

21
22 **7.8.8 FS#8, SN CRAC Meeting Two Treasury Probability Standards (Not Meeting the**
23 **Zero Net Revenue Standard).** This run shows the rate levels required to meet the two Treasury
24 probability standards from BPA's initial proposal (TPP of at least 50 percent and TRP of at least
25 80 percent) but not meeting the requirement that PBL net revenue for the 2002 through 2006
26 period be at least zero. The average rate increase above 2003 total rates is 3.7 percent. The

1 3-year TPP is 75 percent. The 5-year period PBL total net revenue is -\$195 million. Average
2 FB CRAC and SN CRAC percentages are 9.8 percent and 14.4 percent respectively (above
3 May 2000 base rates).

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Table 7-8: ToolKit Summary of Analysis for Final Studies

FS #1: No SN CRAC									
File Name: TK_187_SN-03_FS#1_No_SNN_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	41.4%	Thresh	Cap	
2004	95	0	95	342	84%	'04-06 TPP	n/a	n/a	
2005	76	0	76	125	57%		n/a	n/a	
2006	93	0	93	-48	43%	-609	n/a	n/a	
Avg./Tot	263	0	263		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	12.1%	0.0%	12.1%	38.8%	-5.04%				
2005	9.3%	0.0%	9.3%	38.8%	-5.05%				
2006	11.1%	0.0%	11.1%	40.8%	-3.67%				
Avg./Tot	10.8%	0.0%	10.8%	39.5%	-4.59%				

FS #2: Fixed, Flat SN CRAC (TPP=80%)									
File Name: TK_187_SN-03_FS#2_Fixed_Flat_SNN_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	80.0%	Thresh	Cap	
2004	95	174	269	447	93%	'04-06 TPP	n/a	n/a	
2005	54	233	287	455	85%		n/a	n/a	
2006	47	247	294	512	84%	30	n/a	n/a	
Avg./Tot	196	654	850		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	12.1%	18.5%	30.5%	55.6%	6.44%				
2005	6.6%	24.0%	30.6%	58.0%	8.07%				
2006	5.6%	25.0%	30.6%	58.1%	8.17%				
Avg./Tot	8.1%	22.5%	30.6%	57.2%	7.56%				

FS #3: Variable, Flat SN CRAC using BPA Proposal (TPP=80%)									
File Name: TK_187_SN-03_FS#3_BPA-Prop_Variable_Flat_SNN_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	80.0%	Thresh	Cap	
2004	87	141	228	408	94%	'04-06 TPP	-378	320	
2005	74	165	239	361	87%		-204	320	
2006	86	155	240	351	85%	-139	-161	320	
Avg./Tot	246	460	707		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	11.1%	15.0%	26.0%	51.4%	3.57%				
2005	9.1%	17.0%	26.0%	54.0%	5.35%				
2006	10.3%	15.7%	25.9%	54.3%	5.52%				
Avg./Tot	10.1%	15.9%	26.0%	53.2%	4.81%				

FS #4: Variable, Flat SN CRAC using Traditional TPP Standard (TPP=87.5)									
File Name: TK_187_SN-03_FS#4_Variable_Flat_SNN_87-5%_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	87.5%	Thresh	Cap	
2004	90	162	252	431	96%	'04-06 TPP	-354	370	
2005	76	187	263	411	91%		-158	370	
2006	90	177	266	432	93%	-55	-87	370	
Avg./Tot	256	526	781		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	11.4%	17.2%	28.6%	53.8%	5.22%				
2005	9.4%	19.2%	28.6%	56.4%	6.98%				
2006	10.8%	17.9%	28.7%	56.8%	7.24%				
Avg./Tot	10.5%	18.1%	28.6%	55.7%	6.48%				

FS #5: Variable, Flat using Initial Proposal Standards (TPP, TRP and NR Standards)									
File Name: TK_187_SN-03_FS#5_Variable_Flat_SNN_3Stds_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	87.5%	Thresh	Cap	
2004	92	176	267	445	96%	'04-06 TPP	-337	320	
2005	81	198	279	443	91%		-94	320	
2006	94	188	282	485	91%	0	4	320	
Avg./Tot	267	561	828		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	11.6%	18.6%	30.3%	55.3%	6.26%				
2005	9.9%	20.4%	30.3%	58.0%	8.08%				
2006	11.3%	19.0%	30.3%	58.3%	8.31%				
Avg./Tot	11.0%	19.3%	30.3%	57.2%	7.55%				

FS #6: Variable, Flat SN CRAC w/ \$50M Improvement (TPP=80%)									
File Name: TK_187_SN-03_FS#6_Variable_Flat_SNN_Shaped50Imp_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	80.0%	Thresh	Cap	
2004	84	126	211	422	95%	'04-06 TPP	-375	300	
2005	71	149	220	365	88%		-215	300	
2006	82	141	223	349	85%	-143	-180	300	
Avg./Tot	238	416	654		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	10.7%	13.4%	24.1%	49.7%	2.37%				
2005	8.8%	15.3%	24.1%	52.2%	4.12%				
2006	9.9%	14.2%	24.1%	52.5%	4.35%				
Avg./Tot	9.8%	14.3%	24.1%	51.5%	3.61%				

FS #7: Variable, Flat SN CRAC using PBL Reserves (TPP=80%)									
File Name: TK_187_SN-03_FS#7_Variable_Flat_SNN_PBL_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	80.0%	Thresh	Cap	
2004	94	217	311	301	86%	'04-06 TPP	-295	425	
2005	83	240	323	320	87%		-27	425	
2006	98	229	327	390	91%	148	113	425	
Avg./Tot	275	685	960		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	12.0%	23.0%	35.0%	59.6%	9.18%				
2005	10.2%	24.7%	34.9%	62.2%	10.93%				
2006	11.8%	23.1%	34.9%	62.6%	11.22%				
Avg./Tot	11.3%	23.6%	34.9%	61.5%	10.44%				

FS #8: Variable, Flat SN CRAC (TPP, TRP Standards Only)									
File Name: TK_187_SN-03_FS#8_Variable_Flat_SNN_2stds_24-Jun-03.xls									
	FB\$	SN\$	FB+SN\$	End Rsvs	1-Yr TPP	74.6%	Thresh	Cap	
2004	84	128	212	393	92%	'04-06 TPP	-394	295	
2005	72	150	221	327	84%		-239	295	
2006	83	141	224	296	80%	-195	-214	295	
Avg./Tot	239	418	657		TRP	'02-06 NR			
	FB%	SN%	FB+SN%	FB+SN+LB%	Rate% over 2003				
2004	10.7%	13.5%	24.3%	49.8%	2.47%				
2005	8.8%	15.4%	24.2%	52.3%	4.20%				
2006	9.9%	14.3%	24.2%	52.6%	4.42%				
Avg./Tot	9.8%	14.4%	24.2%	51.6%	3.70%				