Bonneville Power Administration
Power Business Line

2003 Safety-Net Cost Recovery Adjustment Clause Initial Proposal

Study

Chapter 7 – SN CRAC Design

SN-03-E-BPA-01

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BONNEVILLE
POWER ADMINISTRATION

CHAPTER 7: SN CRAC DESIGN

7.1 Introduction

BPA is proposing a three-year variable SN CRAC adjustment to power rates. Under BPA's proposal, in August of each year, the level of SN CRAC for the next fiscal year will be determined, based on the then-current forecast of PBL's Accumulated Net Revenue (ANR). BPA's SN CRAC proposal contains a cap on the amount of revenue collected annually. The annual average expected value for the SN CRAC is about 30 percent above May 2000 base rates. The adjustment in a particular year could be as high as 41 percent or as low as zero, depending on PBL's financial condition as reflected in BPA's forecasted ANR.

7.2 Basic Description

The SN CRAC design is similar to the existing FB CRAC as described in the 2002 General Rate Schedule Provisions (GRSP), but does not replace the existing FB CRAC. The SN CRAC is a temporary, upward adjustment to posted power rates based on the level of forecasted end-of-year ANR in the generation function, as it is defined in the 2002 GRSPs.

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

Because of the structure of BPA's contracts with the customers, each of the three CRACs (LB CRAC, FB CRAC, and SN CRAC) applies to a different but overlapping subset of BPA's customers. Some customers only participate in the LB CRAC, others in only the SN CRAC, and still others in all three CRACs. The GRSPs define the products that are subject to the SN CRAC and the FB CRAC, with additional specification coming from contractual language. The products subject to these two CRACs are not the same. Had BPA proposed implementing an SN CRAC by modifying the FB CRAC parameters, the distinctions between the applicability of each CRAC to individual products would be lost. BPA chose to leave the existing FB CRAC unchanged in order to eliminate this problem and avoid cost shifts between products. Leaving the FB CRAC unchanged also simplifies the application of the FB and SN CRACs to the particular products.

7.3 Standards

BPA recognizes that the region's economy is fragile and that a significant rate increase could cause further economic harm. BPA designed the SN CRAC rate to minimize the rate impact on customers over the balance of the rate period. As a consequence, BPA is relaxing the traditional standard 80 to 88 percent 5-year Treasury Payment Probability (TPP) adopted in the Fish and Wildlife Funding Principles for the current rate period and introducing three standards for maintaining a sufficiently high probability of meeting U.S. Treasury obligations and achieving financial stability by the conclusion of this rate period. By proposing these standards BPA does not intend to abandon the traditional TPP standards. However, BPA recognizes that the state of the regional economy may not support the size of the potential rate increase necessary to achieve the traditional TPP standard.

First, BPA is proposing a 50 percent probability (TPP) that BPA can make each of its annual Treasury payments in the FY 2004 through 2006 3-year period on time and in full. This is

relaxed from 87.5 percent, which is the 3-year probability that corresponds to 80 percent TPP for a 5-year period. Second, BPA is adopting a new metric called the Treasury Recovery Probability (TRP). This metric requires BPA to meet or exceed an 80 percent probability that BPA will be able to make all of its FY 2006 payments to the U.S. Treasury, including repayment of any amounts missed in years FY 2003-2005. Third, BPA requires that net revenues over the FY 2002-2006 period are zero or greater.

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

1. BPA forecasts a 50 percent or greater probability that it will nonetheless miss a payment to the U.S. Treasury or other creditor, or
2. BPA has missed a payment to the U.S. Treasury or has satisfied its obligation to the U.S. Treasury but has missed a payment to any other creditor.

7.4 Specific Parameters

The level of planned SN CRAC rate increase is limited to the lower of: (1) the amount by which ANR plus forecasted FB CRAC revenue under-runs the threshold; or (2) the maximum amount of the annual cap. The threshold levels and the annual caps for the SN CRAC in this proposal differ from the FB CRAC because it was not possible to meet the design goals using the FB CRAC thresholds for the SN CRAC thresholds. The ANR threshold levels for the remaining 3 years of the rate period are: -$400 million for FY 2004, -$140 million for FY 2005, and

$5 million for 2006. *See* Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7, in Case "Initial Proposal." The annual cap is $470 million for each of the 3 years.

Table 7-1 SN CRAC Threshold and Maximum Recovery Amount

$ in Millions

SN CRAC for Fiscal Year	ANR Calculated at End of Fiscal Year	SN CRAC Threshold (ANR)	Maximum Planned Recovery Amount (Beginning October)
2004	2003	-$ 400	$470
2005	2004	-$ 140	$470
2006	2005	$ 5	$470

For both the FB CRAC and the proposed SN CRAC, ANR is defined to be the PBL net revenues accumulated from the end of FY 1999, with two modifications: (1) May 2000 Rate Proposal debt service for ENW is used in place of actual ENW debt service levels, and (2) net revenue adjustments required by FAS 133 are excluded. *See* Lefler, *et al.,* SN-03-E-BPA-06.

7.5 Models

The central model used in the Rate Design Study is the ToolKit. Detailed explanations of the major inputs and outputs on the main page of the ToolKit can be found in the Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7. The ToolKit is a simulation that runs 3000 games to determine impacts of rate design. Each game begins with FY 2003 starting reserves of $135 million for TBL, and $53 million for PBL, making a total BPA starting reserve level of $188 million. Then it adds in the net cash flow from the two business lines for 2003, and compares the ending 2003 cash against the BPA working capital level of $70 million (the sum of the working capital levels for the two business lines). If the ending reserves are less than the working capital level, a deferral is noted; if not, there is no deferral for that year in that game. Then the ToolKit goes through the same process for FY 2004, then for 2005, and finally for 2006. Then the process is reinitialized and repeated for the next game, and for the other 2,998 games after that. TPP is the percentage of games where there is no deferral in any the

remaining years of the rate period. TPP, TRP and net revenue outputs from ToolKit are discussed in greater detail below.

Two other models play major roles in the Rate Design Study by providing input files for the ToolKit. These are RiskMod, which models PBL net revenue risk, and the TBL risk model, which both models TBL net revenue risks and translates TBL net revenues into cash flow. *See* Chapter 6 in the SN-03 Study, SN-03-E-BPA-02. For more information on the TBL risk model, see the Revenue Requirement Documentation of the 2004 Initial Transmission Proposal, TR-040E-BPA-01A. The names of the files containing the PBL and TBL input files are entered into the ToolKit (cells C3 and C4).

7.5.1 Tool Kit Modifications

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

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

7.5.1.3 Modeling the SN CRAC. To model the SN CRAC, BPA enhanced the ToolKit logic, and provided cells on the ToolKit's main page for entering the SN CRAC parameters. The

choice between a fixed and variable design needs to be entered (cell L11). If the design is fixed, then the entries in the *SN CRAC Planned array* (cells M25:M27) determine the amount of SN CRAC revenue that will be collected in each year. *Choosing Fixed* and *Planned = 0* turns off the SN CRAC. If a variable design is chosen (cell L11 unchecked), then annual caps and thresholds need to be entered (cells N25:N27 and M25:M27). At the beginning of each ToolKit year, the starting PBL ANR (adjusted upwards for any FB CRAC revenue already calculated for that year by ToolKit) is compared to the threshold values. If ANR is below the threshold, an SN CRAC is calculated. This amount is the smaller of the gap between the threshold and ANR, and the annual cap. Optional parameters for a variable SN CRAC are the *Deadband* and the *Slope*. BPA's proposal does not use the *Deadband* or the *Slope* parameters. *See* Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7.

In addition to the input and logic changes, BPA made several changes in the outputs reported on the ToolKit's main page. BPA added statistical reports that describe the operation of the SN CRAC design chosen by the user. Some of these output statistics will only be calculated if input variable *CRAC Stats On?* is checked (checked = yes); the ToolKit will run faster if this feature is turned off.

7.5.1.4 TPP Calculations. As explained in Keep, *et al.*, SN-03-E-BPA-04 BPA is using two Treasury payment standards for this rate case. One of them, the TRP, required a change in the Treasury payment logic in ToolKit. With the new logic, the 1-year TPP calculation for 2006 will indicate the probability that BPA will be able to make its 2006 Treasury payment including the repayment of any previous misses from FY 2003-2005.

BPA added a switch so that either the traditional or the new logic can be used, and introduced code to reflect the new logic. In the traditional logic, each year starts with the ending reserves

from the previous year. Then net revenues are added, and then the translation from net revenue to cash is made. Interest credit is calculated on both the starting reserves and on the net cash flow for the year. These figures are based on the assumption that the entire payment to Treasury is made. The total is calculated, and compared to the level of working capital assumed for the run. If the ending cash balance is below the level of working capital, this indicates that making the full Treasury payment would leave BPA short of working capital, and a deferral is made. First Federal amortization is deferred (rescheduled) out of the rate period. Interest is calculated on this deferred amount, and is payable annually. If deferring the entire amount of amortization is not sufficient to leave BPA with its (input) working capital, then interest payments are deferred. These become due the next year, along with one year of interest. (All interest calculations use the interest rate BPA receives on the Bonneville Fund, which is the weighted average interest for BPA's Federal debt.)

Under the new logic, the year-end cash balance is calculated as before, and compared to the working capital level. If the cash balance is below the working capital level, a deferral is noted for later reports, but the ending reserves are allowed to go negative. This is essentially the same as deferring all of the missed payments, amortization as well as interest, until the next year.

Including TBL data does not change the TPP logic. Previously, ToolKit started with PBL cash, added in PBL net revenue, translated to PBL cash, and compared the ending reserve balance to the PBL working capital of $50 million. Now ToolKit starts with PBL and TBL cash, adds in PBL net revenue, translates it to PBL cash, adds in the TBL cash flow, and compares the ending reserve balance to the total BPA working capital level of $70 million.

7.5.1.5 General Updates. BPA made some miscellaneous changes to improve the interface of the ToolKit. For example, there are several new "switches" on the ToolKit's main page that turn

features on or off. Many of these previously required entering "TRUE" or "FALSE" in certain cells; these have been changed to use Excel checkboxes.

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

7.5.1.6 Changes Specifically for this Rate Case. Several outputs have been added to supply statistics specifically for this rate case. BPA added a calculation of the approximate total net revenue for the four years FY 2003-2006 to facilitate checking to see that an SN CRAC design meets not only the two treasury payment standards but also net revenue standard. This standard requires that an SN CRAC solution provide that PBL net revenue for the FY 2002-2006 rate period is at least zero. Since current runs of the ToolKit do not include fiscal year 2002, the net revenue for 2002 needs to be added to the four-year total the ToolKit reports to produce a rate period total. The actual 2002 PBL FB CRAC net revenue was negative $390.5 million.

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

A major change made for this rate case is the addition of a tracking system for ANR. The earlier versions of the ToolKit operated only in the cash world, and BPA translated back and forth

between the cash world of the ToolKit and the ANR world of the FB CRAC. With the addition of the SN CRAC also keying off ANR, it made sense to model ANR explicitly in the ToolKit. ToolKit now uses the FB CRAC thresholds from the GRSPs, denominated in ANR, instead of cash figures. This also benefits the modeling of the SN CRAC, as BPA has proposed that the SN CRAC thresholds be denominated in ANR rather than cash.

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

7.5.3 Transmission Risk Analysis. To quantify the effects of risk on the finances of BPA's transmission function, TBL analyzes the effects of uncertainty in costs and revenues on transmission cash flows using a Monte Carlo simulation model. *See* Transmission Risk Analysis Testimony in Section 3 of the 2004 Initial Transmission Proposal, TR-04-E-BA-05.

For ToolKit purposes, the TBL risk analysis model is run for 3,000 iterations, which provides 2,000, 4-year sets of net cash flows for FY 2003 through 2006. These 3,000 sets of net cash flows are inputs to ToolKit for purposes of calculating BPA net cash flows and TPP. *See* Chapter 8 of the Revenue Requirement Documentation of the 2004 Initial Transmission Proposal, TR-04-E-BPA-01A.

7.5.4 Accrual-To-Cash Adjustment. In the 2002 Power Rate Case BPA argued that the triggers for the CRAC (which became the FB CRAC in the three-component design of the Supplemental Proposal) should be accrual or net revenue-based rather than reserves-based. *See* Lovell, *et al*., WP-02-E-BPA-14, at 7. Although modeled in terms of cash values in the ToolKit model, a relatively simple conversion formula was used to set the FB CRAC trigger thresholds based on ANR (Supplemental Proposal, WP-02-E-BPA-69, Appendix 1, pp. 5-20 through 5-22).

Since the publication of the Supplemental Proposal, BPA's financial situation has become a source of concern and, accordingly, a more precise specification of the relationship of net revenues to cash is needed to support SN CRAC analysis.

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

7.5.4.1 Step One-Determine Agency Net Revenues. Agency net revenues (line 3) are determined by adding PBL (line 1) and TBL (line 2) net revenues. The calculations of TBL Net Revenues are found in Table 7-2.

7.5.4.2 Step Two- Adjust for Other Sources of Cash Provided by Operating Activities. The Net Revenues reported in line 3 need to be adjusted for a number of other sources of cash reported in the Income Statement to yield the amount of cash provided by operating activities (line 9). These adjustments are found in five line items on the spreadsheet. An adjustment is made *Depreciation/Amortization* (line 4) and *Interest Adjustments* (line 5) because they are included in the net revenues but do not affect cash. The remaining adjustments made in this step - for *ENW Net Billing Prepaid Expense* (line 6), *Residential Exchange Deferral* (line 7), and miscellaneous other (the values of lines 28-34 summed in line 8) - account for timing differences between when these items are included in the Income Statement and when they are received or paid.

TABLE 7-2: Statement of Revenues and Expenses – Transmission Business

	($ millions)	2001	2002	2003	2004	2005	2006
	Operating Revenues	(Actuals)					
1.	Transmission Revenues	506.8	497.1	504.4	516.5	541.0	549.0
2.	Ancillary Services Revenues	65.0	132.9	133.9	137.1	143.2	145.9
3.	Delivery Segment Revenues	11.3	12.2	8.1	6.1	6.2	6.3
4.	Fiber & PCS Revenues	18.0	15.9	14.3	14.5	8.2	8.4
5.	TBL Services Revenues	10.6	7.2	10.0	10.0	10.0	10.0
6.	Other Revenues & Credits	35.0	46.4	36.5	36.9	37.1	37.4
7.	**Total Operating Revenues**	**646.7**	**711.7**	**707.3**	**721.1**	**745.7**	**757.1**
	Operating Expenses						
8.	Transmission G&A	17.2	16.6	17.1	17.5	17.9	18.4
9.	CSRS Pension Expense	4.0	27.6	17.6	15.5	13.3	11.6
10.	Transmission Marketing	10.7	15.0	14.8	15.4	15.8	16.2
11.	Transmission Scheduling	5.3	8.8	8.2	8.4	8.6	8.8
12.	Transmission System Operations	30.9	34.4	36.5	37.5	38.4	39.4
13.	Transmission System Maintenance	67.1	73.6	78.0	80.0	82.0	84.0
14.	Transmission System Development	12.2	16.2	12.5	12.8	13.1	13.5
15.	Wheeling/Leases	0.0	5.8	5.9	6.0	6.2	6.3
16.	Environment	4.6	5.0	4.4	4.5	4.6	4.7
17.	Transmission Support Services	13.2	16.3	17.2	17.6	18.1	18.5
18.	TBL Services Expenses	10.6	8.7	10.0	10.0	10.0	10.0
19.	Between Business Line Expenses	63.4	80.7	77.3	80.3	80.3	80.3
20.	Corporate Expenses	43.7	52.7	59.7	61.5	64.0	62.7
21.	**Total Transmission Operating Expense**	**282.9**	**361.4**	**359.1**	**366.9**	**372.2**	**374.3**

(Table 7-2 continues on next page)

TABLE 7-2: (continued from previous page) Statement of Revenues and Expenses – Transmission Business

	($ millions)	2001	2002	2003	2004	2005	2006
		(Actuals)					
22.	**Net Operating Margin**	**363.8**	**350.3**	**348.2**	**354.2**	**373.5**	**382.7**
23.	Federal Projects Depreciation	154.9	161.0	163.0	176.5	188.4	199.9
24.	**Total Operating Expense & Depreciation**	**437.7**	**522.5**	**522.1**	**543.4**	**560.6**	**574.2**
25.	**Net Operating Revenue**	**208.9**	**189.2**	**185.2**	**177.8**	**185.1**	**182.8**
	Interest Expense						
26.	Interest on Appropriated Funds	71.6	66.9	65.3	63.5	61.5	61.5
27.	Interest on Long-Term Debt Issued to Treasury	102.8	133.8	147.2	162.2	173.0	188.7
28.	Interest Credit on Cash Reserves	0.0	(20.6)	(21.4)	(23.1)	(23.1)	(23.9)
29.	Amortization of Capitalized Bond Premiums	0.0	3.9	3.9	3.9	3.5	3.2
30.	Capitalization Adjustment	0.0	(19.7)	(20.2)	(19.7)	(20.1)	(20.1)
31.	AFUDC	0.0	(13.5)	(16.4)	(23.6)	(22.5)	(23.9)
32.	Net Interest Expense	174.3	150.9	158.4	163.2	172.3	185.5
33.	**Total Operating & Net Interest Expenses**	**612.1**	**673.4**	**680.5**	**706.5**	**732.9**	**759.7**
34.	**Net Revenues**	**34.6**	**38.3**	**26.8**	**14.6**	**12.8**	**(2.6)**

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

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

7.5.4.5 Step Five- Isolate Changes in Cash Exclusive of Net Revenues. After determining the annual change in cash balance (line 18), the spreadsheet calculates the *Accrual to Cash* adjustment for PBL that is used by ToolKit. ToolKit receives 3000 sets of net revenue values as inputs from RiskMod. This *Accrual to Cash* adjustment transforms those net revenues into cash, allowing the estimation of both ending reserves and TPP. The size of this adjustment (line 21) is determined through two calculations. The first ascertains the size of the total agency change in cash exclusive of net revenues (line 22) by subtracting total agency net revenues (line 3) from the *Annual Change in Cash Balance* (line 18). The second calculation nets out the PBL portion by subtracting the TBL increase in cash exclusive of net revenue (line 20) from the total agency change reported in line 22.

Thus, the *Accrual to Cash* input variable in ToolKit represents the PBL portion of the adjustment that converts net revenues into cash (line 21 of Table 7-4). The values of the *TBL Acc to Cash* input fields in ToolKit are all zero because 3000 sets of inputs developed by the Transmission risk analysis for use in ToolKit are cash, not net revenue, values, and correspond to line 23 in Table 7-4. These values correspond to those in the *TBL Inputs* field in the ToolKit output.

TABLE 7-3: Statement of Cash Flows - Transmission Business

	($ millions)	2001	2002	2003	2004	2005	2006
	Cash Provided by Current Operations	(Actuals)					
1.	Net Revenues	34.6	38.3	26.817	14.6	12.8	(2.6)
	Expenses not Requiring Cash						
2.	Depreciation/Amortization	154.9	161.0	163.0	176.5	188.4	199.9
3.	Amort of Capitalized Bond Premiums	3.9	3.9	3.9	3.9	3.5	3.2
4.	Capitalization Adjustment	0.0	(19.7)	(20.2)	(19.7)	(20.1)	(20.1)
5.	Revenue Recognition (Third AC)	(2.6)	(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	10.0	6.8	5.4	3.9	4.3	3.7
8.	Payments for Stranded Investments/Defaults		2.1	12.0	(10.0)		
9.	Clark Settlement	0.7					
10.	Cash Provided by Current Operations	201.5	187.2	185.7	163.8	183.6	178.7
	Cash Used for Capital Investments						
	Investment in						
11.	Gross Utility Plant and CWIP	(182.7)	(240.3)	(338.9)	(340.0)	(289.7)	(428.3)
12.	Cash Used for Capital Investments	(182.7)	(240.3)	(338.9)	(340.0)	(289.7)	(428.3)
	Cash From Borrowing and Appropriations						
13.	Cash from Borrowing & Appropriations	182.7	240.3	338.9	320.0	269.7	408.3
14.	Debt Reassignment (from Corporate)			219.0			
15.	Repayment of Long-term Debt	(12.3)	(88.7)	(142.8)	(126.9)	(153.5)	(110.0)
16.	Accelerated Repayment of Debt (Debt Mgt.)			(219.0)			
17.	Accelerated Repayment of Debt (Asset Sales)			(17.5)	(7.6)	(3.9)	(4.3)
18.	Repayment of Capital Appropriations	(46.8)	(42.9)	0.0	(28.6)	(0.0)	(38.6)
19.	Subtotal Cash from Borrowing & Approp	123.6	108.7	178.6	157.0	112.3	255.4
20.	**Annual Change in Cash Balance**	142.4	55.6	25.383	(19.2)	6.2	5.8
21.	Plus Beginning Cash Balance	(12.8)	79.2	134.8	160.2	140.9	147.2
22.	Year End Cash Balance	129.6	134.8	160.2	140.9	147.2	153.0
23.	Deferred Borrowing	(50.4)	0.0	0.0	0.0	0.0	0.0
24.	Total Reserves	79.2	134.802	160.185	140.9	147.2	153.0

Table 7-4: TOOLKIT NET REVENUE TO CASH ADJUSTMENTS

	($ MILLIONS)	FY 2003	FY 2004	FY 2005	FY 2006
	Net Revenues				
1	Power	($191.2)	($123.8)	($116.8)	($98.6)
2	Transmission	$26.8	$14.6	$12.8	($2.6)
3	Total	($164.4)	($109.2)	($104.0)	($101.3)
4	Depreciation/Amortization	$340.3	$356.0	$371.6	$386.8
5	Interest Adjustments	($63.2)	($63.1)	($60.8)	($61.1)
6	ENW Net Billing Prepaid Expense	($91.7)	$26.4	($9.2)	$5.9
7	Res. Exch. Deferral	$55.0	$0.0	$0.0	$0.0
8	All Other	$26.854	($49.902)	($17.775)	$2.708
9	**Cash provided by operating Activities**	$102.8	$160.2	$179.8	$233.0
10	Add: Non-federal Debt Service in Income Stmt.	$593.5	$584.8	$532.2	$566.4
11	Less: Current Estimated Non-federal Debt Service	($322.1)	($594.6)	($567.6)	($551.8)
12	Less: Planned Advanced Amortization of Federal Debt	($315.4)	($55.0)	($40.0)	($60.0)
13	**Total**	($43.9)	($64.8)	($75.4)	($45.4)
14	Add: Cash from Reserve Fund Free-ups	$60.6	$0.0	$0.0	$0.0
15	Less: Scheduled Federal Debt Amortization	($216.5)	($247.8)	($301.6)	($277.1)
16	Less: Transmission Revenue Financed Capital Investments	$0.0	($20.0)	($20.0)	($20.0)
17	Less: Accelerated Repayment of long-term Debt (Asset Sales)	($17.5)	($7.6)	($3.9)	($4.3)
18	**Annual Change in Cash Balance**	($114.6)	($180.0)	($221.1)	($113.9)
19	**Net revenue to cash Increase (decrease)**				
20	TBL (from TBL Statement of Cash Flows)	($1.43)	($33.82)	($6.61)	$8.46
21	**PBL TOOLKIT INPUT** (line 22 - line 20)	**$51.30**	**($36.97)**	**($110.48)**	**($21.07)**
22	TOTAL (line 18 - line 3)	$49.87	($70.79)	($117.08)	($12.61)
23	**TBL INCREMENTAL CASH FLOW** (line 2 + line20)	**$25.38**	**($19.24)**	**$6.23**	**$5.81**
24	Line 8: **All Other** by major elements				
25	**TOTAL**	**$26.9**	**($49.9)**	**($17.8)**	**$2.7**
26	Slice True-up	$25.3	($33.2)	($17.0)	$8.5
27	Misc. revenue and expense lags	($5.3)	($12.9)	($7.3)	($7.8)
28	Terminated contracts	($8.6)	$2.3	$2.3	($1.7)
29	Proceeds from Asset Sales-TBL only	$5.4	$3.9	$4.3	$3.7
30	Other	$10.0	($10.0)	$0.0	$0.0

Line 8 'All Other' corrected to include changes in Sept Revenue lag and purchased power lag for TRIGGER FY 2003.

7.6 Outputs

Results from TPP Analysis of BPA's Initial Proposal

2004 to 2006 three-year TPP: 50.1%.

2006 TRP: 87.7%.

Approximate PBL net revenue 2002-2006: $25 million.

Table 7-5 – CRAC Revenues and Ending Reserves

	Expected Values	2004	2005	2006	2004-6 Total
2	**SN CRAC revenue**	336.8M	363.2M	318.4M	1018.5M
3	**FB CRAC revenue**	99.3M	90.7M	57.9M	247.9M
4	**Ending BPA reserves**	95.0M	205.5M	347.8M	n/a

Table 7-6 – CRAC Percentages and Frequencies

	Expected Values	2004	2005	2006	2004-2006 Average
2	**SN CRAC rate percentage**	29.5%	31.7%	27.5%	29.6%
3	**FB CRAC rate percentage**	11.2%	10.0%	6.3%	9.2%
4	**Total rate percentage**	71.1%	71.7%	64.3%	69.0%
5	**Total rate above 2003 total**	17.0%	17.5%	12.4%	15.6%
6	**FB CRAC trigger frequency**	100%	97%	66%	88%
7	**SN CRAC trigger frequency**	100%	100%	97%	99%

7.7 Preliminary Analyses Supporting Rate Design Decisions

7.7.1 BPA TPP versus PBL TPP. BPA compared the SN CRAC levels required to meet BPA Treasury payment standards with SN CRAC levels required to meet PBL-only TPP standards. First, the 5-year TPP standard of 80 to 88 percent was converted to a 3-year standard (for use with the FY 2004-2006 period covered by the SN CRAC). This conversion assumed that five 3-year rate periods should have the same aggregate TPP as three 5-year rate periods, assuming the rate periods are statistically independent, unlike the years within a rate period. The 15-year

TPP from three 5-year rate periods would be 80% * 80% * 80% = 51.2%. The 15-year TPP from five 3-year rate periods, each having a three-year TPP of 87.5 percent, is also 51.2 percent. Thus, the 3-year TPP that is equivalent to the 5-year TPP of 80 percent is 87.5 percent. Using a fixed, flat SN CRAC (*i.e.*, the same deterministic SN CRAC revenue amounts collected in each of 3 years), BPA compared the SN CRAC percentages required to meet the 87.5 percent TPP standard for PBL with the levels needed to meet the 87.5 percent TPP standard for BPA. (*See* Cases M3 and N3 respectively in the Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7) The results show that the average 2004-2006 total rate level (including all CRACs), expressed as a percentage above the 2003 total rate level (including LB CRAC and FB CRAC), would be 31.3 percent for the design meeting the PBL TPP standard, and only 26.0 percent for the design meeting the BPA TPP standard, demonstrating that using a BPA TPP instead of a PBL-only TPP will cost customers less. (These two studies assume $20 million in cost cuts beyond what was modeled in BPA's initial proposal [$10 million in each of FYs 2003 and 2004] these are cuts that BPA has already committed to achieving, but that had not been reflected in the data for the Initial Proposal. Since both studies include the same $20 million, the comparison between the two studies can be validly applied to BPA's proposal.)

7.7.2 One-Year versus Three-Year TPP

BPA considered what difference in the SN CRAC rate it would make to use a 1-year rate period instead of the 3-year rate period BPA is proposing. For this comparison, BPA calculated that the 1-year TPP that would be equivalent to the 80 percent 5-year TPP standard would be 95.635 percent, since .95635 ** 5 = .80. With the 3-year SN CRAC, the 2004 total rate expressed as a percentage above the total 2003 rate (all applicable CRACs included in both rates), would be 29.8 percent (*see* Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7, Case N3), while the 2004 rate increase under a 1-year SN CRAC would be 36.7 percent above the total 2003 rates (*see* Documentation for SN-03 Study, SN-03-E-BPA-02,

Chapter 7, Case N), demonstrating that using the 3-year rate period allows the same assurance of making Treasury payments at a lower cost to customers. (These two studies assume $20 million in cost cuts beyond what was modeled in BPA's initial proposal [$10 million in each of fiscal years 2003 and 2004] these are cuts that BPA has already committed to achieving, but that had not been reflected in the data for the Initial Proposal. Since both studies include the same $20 million , the comparison between the two studies can be validly applied to BPA's Proposal.)

7.7.3 Fixed SN CRAC versus Variable SN CRAC. BPA assessed the expected value rate increase of its Initial Proposal, a variable SN CRAC design, against the expected value rate increase of a fixed SN CRAC design that meets the same TPP criteria. The fixed-design SN CRAC is case P (*see* Documentation for SN-03 Study, SN-03-E-BPA-02, Chapter 7, Case P). The expected value total rate increase for 2004 through 2006, expressed as a percentage above the total 2003 rates, is 15.6 percent for the variable design, and the expected value total rate increase for FY 2004-2006 under the fixed SN CRAC design is 16.6 percent.