

Chapter 7 Documentation (Errata)

Detailed Explanation of Inputs and Outputs on ToolKit Main Page

A General Comment The ToolKit was set up to handle 6 fiscal years - a five-year rate period (years 2 through 6) and the year preceding it (year 1). For the 2003 SN CRAC rate case, we are modeling 4 years - the remainder of 2003 (year 3) and the 3-year period covered by the SN CRAC, 2004 through 2006 (years 4 through 6). ToolKit years 1 & 2 are not part of these runs, and therefore data entered for these years have no impact.

Inputs vs. **Outputs** The inputs are in black here; **the outputs are in blue.**

Cell	Name	Description
A8	Start in TK Year	Determines which of the 6 years should be used as the first year in the run; A8 should be set to 3 , meaning 2003.
A11	Start TPP in TK Yr	The first year of the period over which the main TPP figure is calculated, and reported in cell G3. Should be set to 4 to calculate 2004-6 TPP.
B8	Stop in TK Year	Determines when the ToolKit run should stop; this should be 2006, so B8 should be set to 6.
B11	"Small" Def. Size	[Does not affect TPP.] Defines how small a deferral must be to be counted as small - purely for the user's curiosity. Reported in D33:D36.
C3	PBL Data	Enter the name of the file containing the PBL risk data here. The path to the file is optional. If a file is open with the same name as that specified (with or without a path), the ToolKit will use that file. If not, the ToolKit will attempt to open the file specified, looking in the specified directory if a path was included, or looking in the current default directory if not. If it cannot find the file, it will open a dialog box asking the user to find it.
C41:C46	TBL Data	Enter the name of the file containing the TBL risk data. See notes for C3 for more details on file and path specifying.
C8	Random St. Rsrv.	Use Random Starting Reserves? Since the current runs start at a known point, the end of FY 2002, cell C9 should be unchecked , meaning don't use Random St. Reserves.
C11	No. of Iterations	Number of Iterations should match the number of iterations in the RiskMod and TBL files. Set this to 3000 for a regular run ; to see quickly what happens in fewer iterations, you can set it smaller, but be sure to reset it to 3000 for calculating whole-run outputs.
C14:C19	Probabilistic?	Separate switches for each of the 6 years that the ToolKit can run; years 1 & 2 (2001 & 2002) aren't being run, and their switches are irrelevant; switches for years 3 through 6 (2003 through 2006) should be set to TRUE.
C22:C27	Other Cash Adj.	Values entered here will be added to the PBL cash flow (or subtracted if negative) for the respective years. These values will not affect net revenue. To reflect an event that will affect both revenue and cash accounts, use "Other NR & Csh Adj" (cells H22:h27). The -56.7 entered for 2004 represents the payment from BPA to the IOUs that was deferred from 2003. The assumption in the Net Rev file from RiskMod: the NRs on all 4 years, 03 through 06, include a \$55M expense; cashflow for 03 has NOT been reduced by \$55M, since that amount has been deferred as follows. If there is an SN CRAC, the payment must be made in 04 (a 3.01% interest, that amounts to \$56.7M); if there is no SN

Cell	Name	Description
		CRAC, the amount is deferred until after 06, and will not affect this rate case. Change the value in this cell according to whether or not your run assumes an SN CRAC.
C31:C36	No. of Deferrals	The number of games (out of No. of Iterations (C11)) in which there was a deferral, for this fiscal year of the simulation.
C41:C46	FB CRAC Accesses	Number of games in which the FB CRAC triggered. (See Note 1 below.)
C51:C56	PBL Inputs	Expected value per year of the PBL file (from RiskMod). These values are net revenue values. They were calculated in RiskMod under the assumption that the FB CRAC would trigger at maximum, and then those deterministic amounts (from I22:I27) were backed out. These values - with LB CRAC revenues but without FB CRAC revenues - are shown here.
D7:D8	RunType: PBL/TBL	Does this run model just PBL, or all of BPA? If PBL only, PBL reserves, net revenues and accrual-to-cash adjustments will be used, and the result will be probabilities that PBL will generate enough cash to meet the PBL portion of BPA's Treasury payments. If RunType = BPA, then TBL figures will be added in, and the results will reflect probabilities that BPA will have enough cash to make all of BPA's Treasury payments.
D11	PBL Strt Rsrv Bal	PBL Starting Reserves Balance for beginning of run - FY 2003. Figure based on BPA reserves, from the First Quarter Review for FY 2003, less TBL reserves, from the TBL 2003 Rate Case Settlement Proposal.
D14:D19	Treasury Int. Rate	The Treasury Interest Rate is the rate the U.S. Treasury gives BPA on BPA's cash, maintained in the Bonneville Fund. This interest rate is the weighted average of the interest BPA pays on its outstanding Federal debt. Users should not change this except to enter updates from BPA's Finance staff.
D22:D27	Back Out FB CRAC	These numbers back out the cash lag impact of the maximum FB CRAC assumptions in the PBL NR distribution. See I22:I19. These values should not be changed unless the FB CRAC assumptions in RiskMod change.
D31:D36	"Small" Deferrals	The number of games (out of No. of Iterations (C11)) in which there was a deferral for this fiscal year of the simulation that was .
D41:D46	FB CRAC Ave/ea.	The average FB CRAC access per each gives an indication of how big the FB CRAC collections are <i>when they occur</i> . It is the sum of all FB CRAC amounts per year divided by the number of FB CRAC accesses for that year. It's not the expected value - that is FB CRAC Ave/Yr (E31:E36). (See Note 1 below.)
D47	"	The sum of the averages of the FB CRAC amounts per FB CRAC access has no meaning.
D48	"	Average size of FB CRAC collections over all three years. This is the sum of all FB CRAC amounts over all years and all games, divided by the total number of FB CRAC accesses.
D51:D56	TBL Inputs	Expected value per year of the TBL inputs (from TBL risk model). These values are in annual cash flow.
E8	Access FCCF?	Turns on logic for the Fish Cost Contingency Fund (FCCF). The FCCF is now modeled in RiskMod, so cell E8 should be unchecked.
E11	TBL Strt Rsrv Bal	TBL Starting Reserves Balance for beginning of run - FY 2003. Figure based on TBL 2003 Rate Case Settlement Proposal. Only used if RunType = BPA.

Cell	Name	Description
E14:E19	Amort Sched	Scheduled amounts of Federal amortization by year: the total amount of amortization of Federal debt (bonds and appropriations), from the 2002 rate case. See "New Def. Logic?" in M8.
E22:E27	PBL Acc. to Cash	PBL Accrual to Cash adjustment: the PBL inputs to the ToolKit are in net revenue, as are the triggers for the FB CRAC and the SN CRAC. TPP is calculated in terms of cash. Annual net revenue and cash flow can be different for many reasons. For example, Federal debt affects the two accounts differently: net revenues contain an expense for depreciation, which has no cash impact; cash flow is decremented by amortization of principle (cash payments to Treasury) which are not part of the net revenue accounting. The figures here represent the sum of the adjustments that must be made in translating PBL annual net revenue into PBL annual cash flow. These figures should not be changed except to make updates per BPA's Finance staff.
E31:E36	1-year Probab.	The probability for a specific year that PBL or BPA (see Run Type, D7:D8) will have enough cash to make its Treasury payments that year and still have at least as much cash as the Working Capital amount (I8 and maybe J8, if RunType = BPA). This probability is equal to $1 - \frac{[\text{No. of Deferrals}]}{[\text{No. of Iterations}]}$ (C31:C36/C11). These calculations are affected by New Def. Logic? (M8).
E37	"	The total of probabilities has no meaning.
E38	"	The average of the probabilities is not a metric BPA has tracked or imputed any meaning to.
E41:E46	FB CRAC Ave/Yr	The average amount of FB CRAC revenue per year is the expected value per year of FB CRAC revenue. It is the sum of FB CRAC amounts over all games for that year divided by the number of games. (See Note 1 below.)
E51:E56	Risk IP Totals	The totals of the PBL and TBL expected value numbers (from C51:C56 and D51:D56).
F8	Random St. FCCF	Uses random starting levels for the FCCF?. Makes no difference when E8 is unchecked, as it should be for 2003 - 2006 runs.
F11	Debug level	If set above 0, turns on various debugging outputs presented on sheet "Debugging". Will slow down a run.
F14:F19	Interest Sched	Total amount of scheduled payment to the Treasury of interest on Federal debt (bonds and appropriations), from the 2002 rate case. See "New Def. Logic?" in M8.
F22:F27	TBL Acc. to Cash	TBL Accrual to Cash adjustment: since the input file for TBL data used in the SN CRAC rate case actually contains cash flows, not net revenues, no accrual-to-cash adjustments are needed. These values should be blank or zero.
F31:36	Cumul. Deferrals	Cumulative Deferrals counts the number of games in which there has been one or more deferrals, starting with the first year for which TPP is being calculated, Start TPP in TK Yr (A11). For the 2003 SN CRAC rate case, we are starting the TPP calculations in 2004, the 4th TKK year. There will not be a cumulative deferrals number for 2003. For 2004, cumulative deferrals will be equal to the number of deferrals. For 2005, cumulative deferrals will count all of the games in which there was a deferral in either 2004 or 2005. For years over which TPP is being calculated, the cumulative deferral number for a later year will always be at least as large as for earlier years.
F37	"	The sum of cumulative deferrals has no meaning.
F38	"	The average of cumulative deferrals has no meaning.
F41:F46	FB CRAC Ann. Lim.	The number of times per year that the annual limit (cap) on FB CRAC amounts was reached. (See Note 1 below.)

Cell	Name	Description
F51:F56	No. of DivDists	Number of games in which a dividend distribution was made.
G8	St. FCCF Balance	The deterministic starting level for the FCCF if FCCF logic is on and Random FCCF is off. Makes no difference when E8 is unchecked, as it should be for 2003 - 2006 runs.
G11	Reserves Graph	If checked, the worksheet named "RsrvsGrph" will have a graph of the ending reserves balances for all years in the run and the beginning reserves level for the first year of the run. For each year, all percentiles are shown from 0% to 100% in 10% increments.
G14:G19	PBL Int. Cr. Sched.	Amounts of interest credit on PBL reserves assumed in the distributions of net revenues; must be backed out in the ToolKit in order to let the ToolKit calculate the proper, game-specific interest on reserves. These numbers should not be changed except as directed by BPA Finance staff.
G22:G27	Calibration	Annual calibrations may be needed when attempting to calibrate the ToolKit results to some other results. None are need for the 2003 SN CRAC rate case. These cells could be used to reflect other events or 'what ifs' whose effects on PBL cash and effects on PBL net revenue are the same.
G31:G36	Cumul. Probab.	The cumulative probability is the probability that there will not have been any deferrals in the time from the start of TPP calculations (Start TPP in TK Yr, A8) through the current year. Thus, for the last year of the TPP calculations, the cumulative probability IS the TPP - the probability of making all Treasury payments over a defined period of years. Cumul. Probab. = 1 - [Cumul. Deferrals]/[No. of Iterations] (F31:F36/C11).
G37	"	The sum of cumulative probabilities has no meaning.
G38	"	The average of cumulative probabilities has no meaning.
G41:G46	FB CRAC Tot. Lim.	Number of times the total rate-period limit for FB CRAC revenue was reached. This is left over from previous design work; since the current design of the FB CRAC does not have a "total limit", these values should all be zero. If not, the value in FB CRAC Lim./Total (J11) has been set too low and should be reset to over 500.
G51:G56	Ave. DvD. per DvD.	The average Dividend Distribution per Dividend Distribution indicates the average size of the Dividend Distribution when they are made. It is the total over all games of the Dividend Distribution amounts per year divided by the number of Dividend Distributions.
H8	Access 4h10C?	Turns on ToolKit logic for modeling the 4(h)(10)(C) credits; these are modeled in RiskMod, so cell H8 should be unchecked.
H11	AutoPrint Res Grph	Automatically print the Reserves Graph at the end of the run to your default printer? Checked = yes.
H16:H19	TBL Int. Cr. Sched.	Amounts of interest credit on TBL reserves assumed in the distributions of cash flows; must be backed out in the ToolKit in order to let the ToolKit calculate the proper, game-specific interest on reserves. These numbers should not be changed except as directed by BPA Finance staff.
H22:H27	Other NR & Csh Adj	These cells allow the user to enter values that will increase (or decrease if negative) the PBL cash and PBL net revenue equally. For example, to model a one-time event in 2004 of increased sale of surplus firm power that was not included in the PBL input file, enter a positive number in the cell for 2004. Both PBL cash and PBL net revenue would be increased. However, to model an event with cash impact but no NR impact, such as a prepayment by a customer, use the cash-only adjustments in cells C22:C27. (Prepayment affects only cash

Cell	Name	Description
		- the revenue would continue to be booked in the year of the delivery of the product.)
H31:H36	Ave. Def. per Year	The average amount of deferral per year is the expected value per year of Treasury payment deferred. It is the sum of deferred amounts over all games for that year divided by the number of games.
H41:H46	SN CRAC Accesses	Number of games in which the SN CRAC triggered. (See Note 2 below.)
H51:H56	Ave. DvD. per Year	The average Dividend Distribution per year is the expected value of the Dividend Distribution. It is the total over all games of the Dividend Distribution amounts divided by the number of games.
I8	PBL Wrkg Capital	PBL Working Capital: the minimum amount of cash (financial reserves) that must be kept on hand at the end of a fiscal year to provide liquidity in early parts of the next year. In the ToolKit, this means that if ending cash would be below PBL working capital in a PBL-only run, a deferral will occur. See also M8, New Deferral Logic.
I11	AutoPrint This Page	Automatically print worksheet "TK_Main" at the end of the run to your default printer? Checked = yes.
I14:I19	FB CRAC Threshold	The FB CRAC Thresholds are used to determine whether the FB CRAC will trigger. About six weeks prior to the start of a fiscal year, BPA makes a forecast of the ending ANR (Accumulated Net Revenue) for the previous year. If this ANR value is below the FB CRAC Threshold, an FB CRAC amount is calculated equal to the lesser of the threshold less the ANR and the annual cap ("FB CRAC Lim/Year", J14:J19). From this amount an FB CRAC surcharge percentage is calculated that will be applied to eligible rate schedules starting October 1. These numbers were set in the 2002 Rate Case, and should not be changed unless you want to model a change in the parameters of the FB CRAC.
I22:I27	Back Out FB CRAC	The file containing PBL NR (the RiskMod file) is based on the assumption that the FB CRAC will trigger at its maximum value each year 2003 through 2006. In some of the games modeled by the ToolKit, ANR increases enough that the FB CRAC for 2004, 5 or 6 would not trigger maximally (especially when an SN CRAC is available). So these cells back out the FB CRAC revenue, allowing the ToolKit to calculate the proper game-specific FB CRAC revenue (which is shown in output cells E41:E46. These values should not be changed unless the FB CRAC assumptions in RiskMod change.
I31:I36	Ave. Def. per Def.	The average deferral per deferral gives an indication of how big deferrals are <i>when they occur</i> . It is the sum of all deferred amounts per year divided by the number of deferrals for that year. It's not the expected value - that is Ave. Def. per Year (H31:H36).
I37	"	The sum of the averages of the deferrals per deferral has no meaning.
I38	"	Average size of deferrals over all years. This is the sum of all deferral sizes, over all years and all games, divided by the total number of deferrals
I41:I46	SN CRAC Ave/ea.	The average SN CRAC access per each gives an indication of how big the SN CRAC collections are <i>when they occur</i> . It is the sum of all SN CRAC amounts per year divided by the number of SN CRAC accesses for that year. It's not the expected value - that is SN CRAC Ave/Yr (J31:J36). (See Note 2 below.)
I47	"	The sum of the averages of the SN CRAC amounts per SN CRAC

Cell	Name	Description
		access has no meaning.
I48	"	Average size of SN CRAC collections over all three years. This is the sum of all SN CRAC amounts over all years and all games, divided by the total number of SN CRAC accesses.
I51:I56	Interest Credit	This is the average (expected value) of the interest credit earned on reserves (PBL reserves if RunType (D7:D8) = PBL only; BPA reserves otherwise). This is calculated game by game and then averaged.
J8	TBL Wrkg Capital	TBL Working Capital: if RunType = BPA, then the BPA working capital will be the sum of the PBL working capital and the TBL working capital. See I8, and M8.
J11	FB CRAC Lim/Total	Restricts the total FB CRAC collections to this amount. This is left over from previous FB CRAC design work and is no longer needed. Therefore, this figure should be set to at least 500 to keep it from erroneously affecting the run.
J14:J19	FB CRAC Lim/Year	The FB CRAC Lim/Year is the annual cap on the size of the FB CRAC amount that can be calculated in determining the FB CRAC surcharge percentage. These numbers were set in the 2002 Rate Case, and should not be changed unless you want to model an FB CRAC different from the one in the current rates.
J22:J27	FB CRAC 1st Month	The first month of a fiscal year in which an FB CRAC would take effect. Useful only when considering design or redesign of the FB CRAC. Since there is a design now - in the GRSPs - these figures should be set to 1.
J31:J36	Ave. 1st Def./Def.	The average size of the first deferral in the period (per first deferral) gives an indication of how large a deferral might be before emergency actions are taken, like triggering the SN CRAC. The average deferral per deferral, on the other hand, includes deferrals that follow deferrals; these are likely to be large, since there will be no available reserves (only working capital) available after the first deferral. With the SN CRAC available as an emergency tool, actions would be taken that would reduce the size of the second deferral, so the Ave. Def. per Def. probably overstates the magnitude of the average deferral; Ave. 1st Def./Def. may be a better indication of that size.
J37	"	The total of the average size of 1st deferrals does not have any meaning.
J41:J46	SN CRAC Ave/Yr	The average amount of SN CRAC revenue per year is the expected value per year of SN CRAC revenue. It is the sum of SN CRAC amounts over all games for that year divided by the number of games. (See Note 2 below.)
J51:J56	FCCF Credit	The annual amount of FCCF credit earned. This is not used anymore; FCCF credits are calculated in RiskMod.
K8	PBL Strt. ANR	Starting level of PBL ANR (Accumulated Net Revenue): ANR is the variable on which the FB CRAC and SN CRAC trigger.
K11	Enable OnTheFly	If this is checked, a dialog box appears before the end of each run showing the TPP for the run and allowing the user to change the amount of PNRR (or any other assumed source of cash) that will be used in re-calculating TPP. Enter incremental amounts (changes up or down from the value shown in dialog box). Amount applied to each year is equal to the OnTheFly amount times the fraction in OnTheFlyShape (N22:N27). Simply a time-saver compared to doing a whole run, changing numbers in cells on a worksheet. Difficult to use for variable SN CRAC work, but can save time if modeling a fixed SN CRAC. At the end of a run, verify that the OnTheFly adjustments meet your criteria by putting fixed amounts into the appropriate cells (for exapmle, for SN

Cell	Name	Description
		CRAC work, SN CRAC Planned (M25:M27); or for PNRR analyses, Other NR & Csh Adj (H22:H27)).
K14:K19	Div. Dist. Threshold	Threshold for the Dividend Distribution: If the ending ANR is above the Div. Dist. Threshold, the amount by which ANR exceeds the threshold is divided to eligible customers. These numbers were set in the 2002 Rate Case, and should not be changed unless you want to model a change in the Dividend Distribution Clause.
K22:K27	FB CRAC Thr. Type	Specifies whether the FB CRAC will be calculated partway through the year, or (essentially) at the beginning of the year - useful only when contrasting alternative FB CRAC designs. The actual design of the FB CRAC in the GRSPs calls for a calculation to be made in August as if the end-of-year data were known, which means the calculation is "essentially" as if made at the start of the year. These values should be set to 0.
K31:K36	Ave. End. Reserves	Average (expected value) ending reserves for that year. These calculations are affected by New Def. Logic? (M8): with traditional logic, reserves cannot fall below the working capital level. Under the New Deferral Logic, reserves can fall below working capital and can go negative. This means that a non-deferral in the next year requires making up the "deferred" part of the payment AND making the scheduled payment for the next year.
K37	"	The total of the expected value of ending reserves has no meaning.
K38	"	The average of the expected value of ending reserves has no meaning.
K41:K46	SN CRAC Ann. Lim.	The number of times per year that the annual limit (cap) on SN CRAC amounts was reached. (See Note 2 below.)
K51:K56	FCCF Use %	The annual frequency of access to the FCCF. This is not used anymore; FCCF credits are calculated in RiskMod.
L11	SN CRAC Fixed?	["Fixed = predetermined.] If checked, the amounts in M25:M27, SN CRAC Planned, are collected no matter what. The parameters for a variable SN CRAC (25O27 -:SN CRAC Threshold, SN CRAC Lim/Year, SN CRAC Deadband, SN CRAC Slope) make no difference.
L14:L19	Div. Dist. Lim/Year	Dividend Distribution Limit per Year: annual cap on the amount of rebate to customers under the Div. Dist. Clause. Left over from design work on the DDC. Since the DDC established in the 2002 Rate Case does not include any annual cap on DDC amounts, these cells should contain very high values (e.g., 20,000 [million]) in order to keep them from having any erroneous impacts.
L22:L27	FB CRAC Slice Frc.	The Slice fraction for the FB CRAC calculations: the FB CRAC rate percentage is calculated as if Slice sales also contribute to raising the calculated amount of the FB CRAC. Since Slice sales are not subject to the FB CRAC, the FB CRAC will raise only a fraction of the calculated amount. Slice customers will contribute their share of risk protection through the Slice True-Up. The Slice fraction is equal to the forecast of revenues subject to the FB CRAC divided by the sum of those revenues and Slice revenues. The values shown are based on the most current forecast of Slice and Non-Slice FB CRACcable revenues. These values should be changed only when there are changes to the forecast of either Slice revenues or FB CRACcable revenues.
L31:L36	Ave. End.	The average (expected value) of PBL's accumulated net revenues

Cell	Name	Description
	PBL ANR	(ANR). ANR is the metric on which the FB CRAC and SN CRAC can trigger.
L37	"	The total of the expected value of ending ANR has no meaning.
L38	"	The average of the expected value of ending ANR has no meaning.
L41:L46	SN CRAC Tot. Lim.	Number of times the total rate-period limit for SN CRAC revenue was reached. The current design of the SN CRAC does not have a "total limit", these values will all be zero.
L51:L56	4h10C Credit	The average annual amount of 4(h)(10)(C) credit earned, from a look-up table calculated exogenously. This is not used anymore; 4(h)(10)(C) credits are calculated in RiskMod.
M8	New Def. Logic?	Use the new deferral logic (checked) or the traditional logic (unchecked)? For the 2003 SN CRAC rate case, BPA is proposing a revised way to model deferrals. If ending reserves would be below the working capital amount, a deferral occurs (under new or traditional logic). Under the new logic, the deferral is noted, but reserves are allowed to fall below the working capital level. This means that a Treasury payment success next year will only happen if reserves improve enough to make up for the deferral just noted and to make the next year's payment. Under the traditional logic, if reserves would fall below working capital, the amount of the shortfall (reserves minus working capital) is deferred, and reserves are set at the level of working capital. If the amount of the deferral is equal to or less than the scheduled Federal amortization, the principle is rescheduled for repayment in the next rate period. Any portion of the deferral beyond the size of the scheduled Federal amortization is deferred only to the next year.
M11	CRAC Stats On?	Calculate statistics for the FB CRAC and SN CRAC? If checked, the ToolKit will calculate the standard deviation, maximum and minimum values for the FB CRAC and SN CRAC percentages. These calculations will slow down the ToolKit, so if you are iterating a lot, you may want to leave this off until you have settled on the parameters for your run. The optional stats show up in cells P34:P36, R34:R36, P44:R46.
M14:M19	SN CRAC Threshold	Threshold for the SN CRAC. See worksheet "SN CRAC Dox". Values for ToolKit years 1 through 3 have no impact.
M22:M27	SN CRAC Planned	Planned amounts for SN CRAC collection. If SN CRAC Fixed (L11) is checked, these amounts of annual revenue will be assumed by the ToolKit to be collected. If SN CRAC Fixed (L11) is unchecked, then if either the SN CRAC Deadband value (O17:O19) or the SN CRAC Slope (P17:P19) value is non-negative, the Planned amount will affect the SN CRAC calculations (see worksheet "SN CRAC Dox"). If SN Fixed is off and the Deadband and Slope values are blank or zero, the Planned amount has no effect on the SN CRAC calculations. Only values for the last three years, ToolKit years 4 -6, fiscal years 2004 - 6, have any effect.
M31:M36	OnTheFly Adjustmt.	The On-The-Fly adjustment can be turned on in cell K11. It saves time if you are iterating to find out how much additional cash must be added to all years of the study in order to achieve a particular TPP result. For example, you could use it to dial in the right amount of PNRR to meet a TPP standard, or the amounts of a fixed SN CRAC. These cells report the final value of the additional cash per year chosen through use of On-The-Fly. See Enable On-The-Fly (K11).
M41:M46	FB CRAC Freqncy	The frequency of the FB CRAC triggering per year = FB CRAC Accesses (C41:C46) divided by No.of Iterations (C11). (See Note 1

Cell	Name	Description
		below.)
M48	"	This is not the average of the FB CRAC frequencies; it is the three-year frequency (total number of accesses (C47) / total number of games (three times No. of Iterations (C11))).
M52:M53	LB C	Average annual LB CRAC rate increases already calculated for FY 2002 & 2003 (as a percentage of the May 2000 base rates).
M54:M56	LB C	Current forecast of LB CRAC rate increases for FY 2004 through 2006 (as a percentage of the May 2000 base rates).
N14:N19	SN CRAC Lim/Year	Limit per year is the annual cap on how much revenue the SN CRAC can generate. See worksheet "SN CRAC Dox". Setting the value for a year to zero turns off the SN CRAC for that year.
N22:N27	OnTheFlyShape	These cells contain shaping factors for use with the OnTheFly adjustment for faster iteration over PNRR or Fixed SN CRAC amounts when solving for, e.g., TPP values. See Enable OnTheFly (K11).
N31	BPA Strt Bal	This cell reports the expected value of the starting reserve balance, either a BPA figure if RunType = BPA, or a PBL-only figure. The ToolKit is currently set up to handle only deterministic starting reserve balances, not random starting balances, so it's not very informative at the moment.
N38	FCCF Strt Bal	The starting balance in the FCCF (Fish Cost Contingency Fund) is not relevant to current runs, since FCCF is modeled in RiskMod and is embedded in the RiskMod output file that the ToolKit reads in.
N41:N46	SN CRAC Freqncy	The frequency of the SN CRAC triggering per year = SN CRAC Accesses (H41:H46) divided by No.of Iterations (C11). (See Note 2 below.)
N48	"	This is not the average of the SN CRAC frequencies; it is the three-year frequency (total number of accesses (H47) / total number of games (three times No. of Iterations (C11))).
N53	FB C	The FB CRAC rate increase percentage for FY 2003 as calculated in August 2002 and applied to bills starting Oct 1, 2002, the start of FY 2003 (as a percentage of May 2000 base rates).
N54:N56	FB C	The expected value of the FB CRAC rate increase percentage for FYs 2004 through 2006 as calculated over 3000 games (as a percentage of May 2000 base rates).
O16:O19	SN CRAC Deadband	Parameters for a complex variable SN CRAC; see worksheet "SN CRAC Dox". Only values for the last three years, ToolKit years 4 -6, fiscal years 2004 - 6, have any effect.
O22:O27	SN CRAC Rev Basis	The revenue basis for the SN CRAC is the forecast of the total, unCRACced revenue for sales subject to the SN CRAC. This means without any LB CRAC, FB CRAC, or SN CRAC revenues. These numbers should not be changed except at the direction of the BPA Rates staff or if you are modeling an SN CRAC applying to a different set of rates than specified in the 2002 Rate Case GRSPs.
O32:O36	Total PBL Net Revenue w/ CRACs	These are the annual sums of 1) the PBL net revenue from RiskMod with FB CRAC revenue assumptions backed out (C53:C57); 2) the expected value of FB CRAC revenues (E44:E46); 3) the expected value of SN CRAC revenue (J44:J46); and 4) and user-added adjustments that affect both cash and net revenue (G25:H27).
O37	"	The four-year total of the expected values of annual PBL net revenue. To translate to a five-year total, add in the net revenue for 2002, negative \$390.5 million.
O38	"	The mean of the four-year total in O37.
O41:O46	Ave. FB + SN	The expected value of the sum of the FB CRAC revenue and the SN CRAC revenue = E41:E46 + J41:J46. (See Notes 1 & 2 below.)

Cell	Name	Description
O54:O56	SN C	The expected value of the SN CRAC rate increase percentage for FYs 2004 through 2006 as calculated over 3000 games (as a percentage of May 2000 base rates).
P16:P19	SN CRAC Slope	Parameters for a complex variable SN CRAC; see worksheet "SN CRAC Dox". Only values for the last three years, ToolKit years 4 -6, fiscal years 2004 - 6, have any effect.
P22:P27	FB CRAC Rev Basis	The revenue basis for the FB CRAC is the forecast of the total, unCRACced revenue for sales subject to the FB CRAC. This means without any LB CRAC, FB CRAC, or SN CRAC revenues. These numbers should not be changed except at the direction of the BPA Rates staff.
P34:P36	Max Tot Rate	The total rate (including LB CRAC, FB CRAC, SN CRAC) expressed as a percentage above the total (CRACced) rate for 2003: these values are the maximum values observed in the set of games (usually 3,000 games).
P38	Max Tot Rate - Ave.	This figure is the maximum of the (3000) 3-year averages; it is not the average of the three one-year maxima.
P41:P46	SN CRAC Std Dev.	The standard deviation of the SN CRAC (expressed as a percentage above May 2000 base rates). (See Note 2 below.)
P48	"	The average of the three standard deviations in P44:P46.
P54:P56	FB+LB+SN	The expected value of the sum of the three CRAC rate increase percentage for FYs 2004 through 2006 as calculated over 3000 games (as a percentage of May 2000 base rates).
Q34:Q36	E.V. Tot. Rate	The expected value of the total (CRACced) rate as a percentage above the total (CRACced) 2003 rate.
Q38	E.V. Tot Rate - Ave.	The expected value of the average three-year rate increase. (This figure is equal to the average of the three one-year expected values.)
Q41:Q46	FB CRAC Std Dev.	The standard deviation of the FB CRAC (expressed as a percentage above May 2000 base rates). (See Note 1 below.)
Q48	"	The average of the three standard deviations in Q44:Q46.
Q53:Q56	DDC	The expected value of the Dividend Distributions for FYs 2003 through 2006 as calculated over 3000 games (as a percentage of May 2000 base rates).
R34:R36	Min Tot Rate	The total rate (including LB CRAC, FB CRAC, SN CRAC) expressed as a percentage above the total (CRACced) rate for 2003: these values are the minimum values observed in the set of games (usually 3,000 games).
R38	Min Tot Rate - Ave	This figure is the minimum of the (3000) 3-year averages; it is not the average of the three one-year minima.
R41:R46	SN + FB Std Dev.	The standard deviation of the combined SN & FB CRACs (expressed as a percentage above May 2000 base rates). This is different from the sum of the two standard deviations. (See Notes 1 & 2 below.)
R48	"	The average of the three standard deviations in R44:R46.
R53:R56	Net	The sum of the total CRAC percentage (P53:P54) and the DDC percentage (Q53:Q54) (expressed as a percentage of the May 2000 base rates).
	Notes	
	1	Since the FB CRAC triggered in August, 2002, for FY 2003, the FB CRAC stats for 2003 are hard-wired. The FB CRAC percentage is an input from PBL's rate staff, not a calculation made in the ToolKit. The stats for the FB CRAC in 2004 through 2006 are ToolKit calculations. (There was no FB CRAC in 2001, and it did not trigger for 2002.)

5/12/2003

<i>Cell</i>	<i>Name</i>	<i>Description</i>
	2	The SN CRAC cannot apply to 2001 through 2003, so there will be no values for these years.

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How the SN CRAC Logic Works in the ToolKit

SN CRAC Logic

The SN CRAC logic has 6 control parameters:

1. Annual Thresholds [SN CRAC Thresholds]
2. Planned SN CRAC amounts [SN CRAC Planned]
3. Annual limits (caps) on SN CRAC amounts [SN CRAC Lim/Yr]
4. Annual "dead bands" [SN CRAC Deadband]
5. Annual "slopes" [SN CRAC Slope]
6. Toggle for "fixed" (vs. variable) [SN CRAC Fixed (checkbox; check=fixed)]

General Features

FB CRAC is calculated first: if ANR is below the FB CRAC threshold, the preliminary amount is calculated = minimum of (threshold - ANR) and the annual cap), and then this amount is

1 multiplied by the FB CRAC Slice Fraction. Then the SN CRAC logic runs. For variable SN
 2 CRACs, the comparison between ANR and the SN CRAC threshold assumes that the prorated
 3 FB CRAC amount will be collected first. The parameters for the three years need not be the
 4 same. Deadbands and planned SN CRAC amounts cannot be negative. Planned amounts cannot
 5 exceed annual caps if Fixed = FALSE. The thresholds are the ending ANR for the previous year.
 6 The parameters are shown on rows corresponding to the year of collection of the CRAC revenue,
 7 not the year whose ending ANR is the trigger. CRAC amounts are calculated one game at a time,
 8 one year at a time within each game.

9 If you want to make a lot of runs and print them, you can check the Autoprint This Page box. If
 10 the Reserves Graph box is checked, there will be a tab showing the distribution of ending
 11 reserves for the run period.

12 Three-year TPP (2004 AND 2005 AND 2006 payments made) is in G2. 2003 TPP is in E33.
 13 2006 TPP is in E36 - only counts as a success if all prior missed amounts in this game have been
 14 repaid.

16 Hints

17 The ToolKit runs faster with Debug = 0, ReservesGraph = unchecked; CRAC Stats on =
 18 unchecked.

19 Three types of SN CRAC designs:

20 A. Fixed: three annual amounts of money are scheduled to be collected. Set SN CRAC Fixed =
 21 TRUE. No other parameters affect this design - thresholds, caps, etc. are irrelevant. FB CRAC
 22 frequency and ave. amount collected will probably decrease.

23 B. Simple Variable: Operates like the FB CRAC - if ANR is below the threshold, the SN CRAC
 24 is set at the minimum of [the gap between ANR and the threshold] and [the cap]. Set planned
 25 amounts, deadbands and slopes to zero.

26 C. Complex Variable: By using planned amounts, deadbands, and slopes you can design an SN
 27 CRAC in which some of any "good luck" revenues will be directed to BPA reserves instead of
 28 automatically serving to reduce the planned SN CRAC amount. In bad luck years (i.e., ANR is
 29 below the projected amounts), complex variable SN CRACs work just like simple variables: bad
 30 luck causes the SN CRAC amount to be increased, up to the annual cap. If there is good luck, the
 31 SN CRAC is not necessarily reduced. First, there is a deadband: the good luck (amount ANR
 32 exceeds projected levels) by at least the size of the deadband before the SN CRAC is reduced
 33 below the planned amount. (If deadband = 0, it has no effect.) Second, if the good luck amount
 34 exceeds the deadband, some fraction (the "slope" percentage) of the good luck revenue is
 35 directed to reserves, and the SN CRAC is reduced from the planned amount by (1-slope)% of the
 36 good luck revenue.

39 Examples

40 A. 1. Fixed = TRUE. Planned = {308, 308, 308}. At the beginning of 2004, 5, and 6, the FB
 41 CRAC logic runs. Then \$308M of SN CRAC revenue is added in. The SN CRAC revenue does
 42 not affect the 2004 FB CRAC, but the 2004 SN will affect the calculation of the 2005 FB.

43 A. 2. Try setting the planned amounts to {462, 462, 0} to see the impact of timing of the SN
 44 CRAC revenue.

45 B. 1. Fixed = FALSE. Deadband = Planned = Slope = 0. Thresholds = {-300, -200, -100}, caps =
 46 {400, 400, 400}. At the beginning of 2004, the FB CRAC is calculated. It probably always

5/12/2003

1 triggers (your input data may not be exactly the same as mine), but it probably won't always be
2 for the maximum amount (check stats for FB CRAC Ann Lim). Then ANR + FB CRAC revenue
3 is compared against the SN CRAC threshold of -300. If this augmented ANR is equal to or
4 greater than -300, there is no SN CRAC amount for 2004. Otherwise, the SN CRAC for 2004 is
5 set to the minimum of [annual cap] and [threshold - augmented ANR].
6 C. 1. Fixed = FALSE. Deadband = Slope = 0. Planned = {300, 300, 300}; thresholds = {-300, -
7 200, -100}. Results should be identical to ex. B. 1. There are planned amounts, but they are
8 adjusted up or down from there, not going above the annual caps, not going below 0.
9 C. 2. Same as C. 1., but put in deadbands = {100, 100, 100}. Now if the calculated SN CRAC is
10 at or above 300, it will not be modified by the deadband, but if the calculated amount is below
11 300, the deadband has an impact. If the calculated amount is between 200 and 300, the SN
12 CRAC will still be 300. The SN CRAC is reduced from \$300M by \$1M for each \$1M the
13 calculated SN CRAC amount is below \$200M.
14 C. 3. Same as C. 1. but put in Slopes = {50%, 50%, 50%}. As in C. 2., cases where the SN
15 CRAC amount would be 300 or greater are unaffected. But where the calculated amount is below
16 300, the SN CRAC amount is reduced by only \$.5M for each \$1M the calculated amount is
17 below 300.