

Northern California Power Agency

Cash Reserve Methodology Study

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Presentation Objectives

Review methodologies for the following:

- Operating Reserves
 - Hydroelectric Maintenance Reserve
 - Geothermal Maintenance Reserve
 - CT1 Maintenance Reserve
 - CT2 Maintenance Reserve
 - LEC Maintenance Reserve + O&M Reserve
- NCPA Working Capital
- Security Deposits
 - SCPA Balancing Account
 - Market Power Purchase Program
 - Gas Purchase Program

Operating Reserves

Components of Calculation for Each Resource

- Working Capital
 - Budget Expense – moved from NCPA WC calculation
- Fuel Expense / CAISO Charges
 - Max month of the budgeted fuel / CAISO expense
- Market Exposure – Outages / Variability
 - The incremental cost to purchase replacement power
- Contingency
 - To begin repairs if the unit goes down – higher risk for older units
- Five-Year Capital Improvements
 - To fund the current capital plan

CT 1 Working Capital and Operating Reserves

Description	2023
Minimum Cash Reserve Allocation	
Working Capital CT 1	8.2%
Fuel Expense	7.6%
Market Exposure - Outages	100.0%
Contingency	3.0%
Five Year Capital Improvements - Net of bond proceeds	20.0%
Calculated Minimum Cash Level	
Working Capital CT 1	\$ 280,450
Fuel Expense	105,845
Market Exposure - Outages	8,616
Contingency	1,232,000
Five Year Capital Improvements - Net of bond proceeds	455,140
Minimum Cash Reserve Levels	\$ 850,051
Minimum Days cash on hand (WITH contingency)	\$ 2,082,051
Current Reserve	\$ 3,035,456
Minimum Days cash on hand (no contingency)	59
Minimum Days cash on hand (WITH contingency)	145

30 days working capital	
CT 1 Incremental Cost Evaluation	
Variable Costs	
CT1 Calculation	
Monthly Incremental Gas Cost / mmbtu	\$ 2.00
Heat Rate	16,076
Max Month MWh 2021	3,292
Incremental Cost / kWh	\$ 0.0322
Max Cash on Hand	\$ 105,844.60
Budgeted Fuel Cost	\$ 1,389,424.00
Percent to Min Cash	7.6%
Units Constructed in 1984, 38 years old	

CT 2 Working Capital and Operating Reserves

Description	2023
Minimum Cash Reserve Allocation	
Working Capital CT 2 - to be moved to Working Capital	8.2%
Fuel Expense	9.1%
Decommissioning Costs	100.0%
Five Year Capital Improvements - Net of bond proceeds	20.0%
Calculated Minimum Cash Level	
Working Capital CT 2 - to be moved to Working Capital	\$ 240,163
Fuel Expense	194,194
Decommissioning Costs	12,600,000
Five Year Capital Improvements - Net of bond proceeds	67,000
Minimum Cash Reserve Levels	\$ 501,358
Minimum Days cash on hand (WITH Decomm)	\$ 13,101,358
Current Reserve	617,280
Minimum Days cash on hand (no contingency)	36
Minimum Days cash on hand (WITH Decomm)	933

CT 2 will not be repaired if it goes down. Therefore, there is no contingency or market exposure attributed to CT 2.

We have included the decommissioning costs to establish an upper boundary of cash to be held for this unit.

LEC Working Capital, Maintenance and O&M Reserves

Description	2023
Minimum Cash Reserve Allocation	
Working Capital LEC - to be moved to Working Capital	16.4%
Fuel Expense	4.2%
Market Exposure - Outages	0.0%
Contingency	2.0%
Five Year Capital Improvements - Net of bond proceeds	20.0%
Calculated Minimum Cash Level	
Working Capital LEC - to be moved to Working Capital	\$ 4,021,093
Fuel Expense	2,698,440
Market Exposure - Outages	-
Contingency	6,500,000
Five Year Capital Improvements - Net of bond proceeds	4,359,992
Minimum Cash Reserve Levels	\$ 11,079,526
Minimum Days cash on hand (WITH contingency)	\$ 17,579,526
Current Reserve	12,482,270
Minimum Days cash on hand	45
Minimum Days cash on hand (WITH contingency)	72

The working capital requirement is 60 days per the Bond Covenant.

LEC market exposure due to outages is accounted for in the SCPA balancing account.

Reserve calculation indicates the total cash between the existing maintenance reserve and O&M reserve.

Geothermal Working Capital and Operating Reserves

Description	2023
Minimum Cash Reserve Allocation	
Working Capital Geo	8.2%
CAISO Charges	4.9%
Variability in costs due to market changes	100.0%
Contingency	1.0%
Five Year Capital Improvements - Net of bond proceeds	20.0%
Calculated Minimum Cash Level	
Working Capital Geo	\$ 2,478,496
CAISO Charges	29,793
Variability in costs due to market changes	1,837,299
Contingency	3,713,385
Five Year Capital Improvements - Net of bond proceeds	2,835,325
Minimum Cash Reserve Levels	\$ 7,180,913
Minimum Days cash on hand (WITH contingency)	\$ 10,894,299
Current Reserve	4,672,257
Minimum Days cash on hand (no contingency)	85
Minimum Days cash on hand (WITH contingency)	129

CAISO percentage determined based on 90-day true up and 20% variation between prebill + actual

Contingency percent is based on the risk of earthquakes, erosion, and corrosion.

Hydro Working Capital and Operating Reserves

Description	2023
Minimum Cash Reserve Allocation	
Working Capital Hydro	8.2%
CAISO Charges	4.9%
Variability in costs due to market changes	100.0%
CDR	0.0%
Contingency	0.5%
Five Year Capital Improvements - Net of bond proceeds	20.0%
Calculated Minimum Cash Level	
Working Capital Hydro	\$ 1,503,047
CAISO Charges	60,997
Variability in costs due to market changes	1,044,508
CDR	-
Contingency	1,938,125
Five Year Capital Improvements - Net of bond proceeds	2,287,000
Minimum Cash Reserve Levels	\$ 4,895,552
Minimum Days cash on hand (With Contingency)	\$ 6,833,677
Current Reserve	4,490,363
Minimum Days cash on hand (no contingency)	92
Minimum Days cash on hand (WITH contingency)	128

CDR account is held separately for large capital projects

FERC

NCPA Working Capital

Components of Calculation

- **Generation Resources and Transmission will now have working capital reserves maintained through each resource**
- NCPA Working Capital is for NCPA-specific management services
- A 30-day capital lag is used to calculate working capital needs

Description	2023
Minimum Cash Reserve Allocation	
Management Services	8.2%
Calculated Minimum Cash Level	
Management Services	\$ 1,484,233
Minimum Cash Reserve Levels	\$ 1,484,233
Current Reserve	\$ 10,121,552
Days Cash on Hand	30

NCPA Operating Reserves Summary

Resource	Minimum Reserve Requirement	Reserve Requirement with Contingencies	Current Reserve	Difference - Current to Reserve with Contingencies	
CT - 1	\$ 850,051	\$ 2,082,051	\$ 3,035,456	\$ 953,405	
CT - 2	501,358	501,358	617,280	115,922	<i>Decomissioning Costs Removed</i>
LEC	11,079,526	17,579,526	12,482,270	(5,097,255)	
GEO	7,180,913	10,894,299	4,672,257	(6,222,041)	
Hydro	4,895,552	6,833,677	4,490,363	(2,343,313)	<i>Additional reserves required for CDR</i>
NCPA Working Capital	1,484,233	1,484,233	10,121,552	8,637,319	<i>WC included in resource reserves</i>
Total	\$ 25,991,632	\$ 39,375,142	\$ 35,419,178	\$ (3,955,964)	

Security Deposits

Components of Calculation for Each Resource

- SCPA Account
 - 2 Max months of the gross budgeted cost by member
 - Justification: necessary to cover NCPA float days between CAISO payment date and Prebill and to mitigate the risk of a member not paying or paying late
 - Lodi Energy Market Risk – LEC participants only
- MPP and GPP Accounts
 - Max Budgeted Contract Month by Member
 - 3 Max months Mark to Market by Member
 - Justification: necessary to cover the risk of a member not paying or paying late plus the risk of variance between real-time market pricing and budget

SCPA Total Reserves

Description	2023 Gross Budget
Minimum Cash Reserve Levels Determinants	
Load Aggregation Risk	\$ 467,468,943
Lodi Energy Market Risk	517,775
Minimum Cash Reserve Allocation	
Load Aggregation Risk	7.0%
Lodi Energy Market Risk	100.0%
Calculated Minimum Cash Level	
Load Aggregation Risk	32,877,276
Lodi Energy Market Risk	517,775
Minimum Cash Reserve Levels	\$ 33,395,051
Current Reserve	\$ 34,261,105
Minimum days cash on hand (function of gross)	26

The LA risk of 7.0% is determined by summing the member's two max months and taking the sum as a percent of the gross budget.

LEC compliance cash (market risk) is determined using the incremental cost of replacement power should the LEC experience an unplanned outage. This is only applied to the outage prior to scheduling through Load Aggregation, therefore an average day / max month factor is used to determine the total risk.

SCPA Minimum Security Deposit by Member and Participant

Members	Max Month 2 (2023 Budget)		Total Load Aggregation	LEC		Total SCPA Deposit	Current SCPA Balance	NCPA Budgeted June 2023 Balance						
				Allocation	LEC Deposit									
ALA	\$	1,208,803	\$	2,563,587	0.0%	\$	-	\$	2,563,587	\$	2,610,855	\$	3,405,310	
BART		1,647,892		3,333,912	6.6%		34,173		3,368,085		2,808,300		4,483,583	
BIG		66,288		151,434	0.3%		1,387		152,821		118,555		190,661	
GRI		72,675		161,879	2.0%		10,171		172,050		238,895		218,629	
HEA		243,884		502,251	1.6%		8,506		510,757		583,623		649,663	
LOD		2,033,209		4,151,086	9.5%		49,189		4,200,275		3,606,709		5,222,411	
LOM		432,156		910,053	2.0%		10,540		920,593		1,076,108		1,214,258	
PAL		2,985,292		5,995,180	0.0%		-		5,995,180		6,551,438		8,095,627	
PLU		560,469		1,130,095	0.8%		4,068		1,134,163		903,506		1,481,177	
POR		547,516		1,097,228	0.0%		-		1,097,228		1,180,022		1,447,570	
SNCL		5,933,225		11,942,664	25.8%		133,327		12,075,991		13,665,423		16,128,247	
UKI		414,791		937,907	1.8%		9,246		947,153		917,671		1,186,408	
Subtotal Member Deposits			\$	32,877,276					\$	33,137,883	\$	34,261,105	\$	43,723,541
Other Participants														
TID	\$	-	\$	-	0.0%	\$	-		-					
CDWR		-		-	33.5%		173,455		173,455					
Azusa		-		-	2.8%		14,424		14,424					
PWRPA		-		-	2.7%		13,814		13,814					
MID		-		-	10.7%		55,476		55,476					
Subtotal Other			\$	-					\$	257,168				
Total SCPA Security Deposits									\$33,395,051					

MPP Minimum Security Deposit

The methodology for the MPP Security Deposit is to collect the maximum budgeted contract month plus the highest three months of budgeted mark to market cost by member. This deposit may be reevaluated per the same specifications outlined in the original agreement.

Member	Max Contract Month	Max 1 Mark to Market	Max 2 Mark to Market	Max 3 Mark to Market	Total Deposit	Current MPP Balance
ALA	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,536
BART	352,764	22,635	17,308	-	392,707	2,593,495
BIG	21,224	-	-	-	21,224	62,856
GRI	22,306	-	-	-	22,306	68,610
HEA	-	-	-	-	-	30,654
LOD	476,155	-	-	-	476,155	305,466
LOM	89,746	-	-	-	89,746	33,296
PAL	820,096	-	-	-	820,096	2,372,192
PLU	-	-	-	-	-	-
POA	34,186	-	-	-	34,186	157,601
POH	31,262	-	-	-	31,262	-
UKI	22,306	-	-	-	22,306	107,176
Total	\$1,870,045	\$ 22,635	\$ 17,308	\$ -	\$ 1,909,988	\$5,756,882

GPP Minimum Security Deposit

The methodology for the GPP Security Deposit is to collect the maximum budgeted contract month plus the highest three months of budgeted mark to market cost by member. This deposit may be reevaluated per the same specifications outlined in the original agreement.

Member	Max Contract Month	Max 1 Mark to Market	Max 2 Mark to Market	Max 3 Mark to Market	Total Deposit	Current GPP Balance
BART	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 699,525
BIG	5,293	-	-	-	5,293	23,504
GRI	28,437	-	-	-	28,437	78,875
HEA	43,562	-	-	-	43,562	99,012
LOD	265,515	-	-	-	265,515	761,719
LOM	99,484	-	-	-	99,484	87,474
UKI	56,311	-	-	-	56,311	107,993
Total	\$498,602	\$ -	\$ -	\$ -	\$498,602	\$ 1,858,102

Questions?



Thank you!

