Operations Cost Allocation - Customer Presentation

Western Area Power Administration

September 19-20, 2011

Agenda

- OCP/OCI Update
- Interim Cost Allocation Methodology
- Proposed Cost Allocation
- Analysis of Proposed Allocation
- Discussion and Comments
- Contacts

OCP/OCI Update

- 2007 Strategic Initiative for RMR BA and DSW BA to operationally back each other up
- Drivers from planning
  - NERC compliance
  - Staffing
  - Cost avoidance of supporting two Alternate Control Centers (ACCs)
    - $2.1M for two ACCs
    - Potential of manning ACCs 24/7
  - Changes to industry
    - DSS, EDT, 15 minute scheduling

Strategic Planning Decision

- 2010 Operations, Transmission Business, SCADA, and Compliance reorganization
- Common SCADA, scheduling, and settlements systems and other computer applications
- Standard Operating Procedures (SOP)
- Phoenix and Loveland back each other up and shutdown the ACCs

Operations Consolidation Implementation

- Began January 2010
- Primary Goal: Shut down existing backup control centers
- Baseline Program Plan developed to implement common tools
  - Two SCADA systems into one
  - Communication system requirements and installation
  - Selection of one power scheduling system
  - Selection of one settlements system
  - Single historian
  - Common SOPs

Operations Consolidation Implementation

- Phase 1 – November 2011
  - Upgrade to Version 14 SCADA
  - Policy and Procedure Manager upgrade and SOP
  - Common switching and outage tool
- Phase 2 - CRSP Reconfiguration October 2012
  - CRSP move to WACM
  - Common scheduling tool: Phoenix - January; Loveland - June
- Phase 3 – Spring 2013
  - ACC shutdown
- Phase 4 - 2013
  - SCADA system merge complete
- Phase 5 – 2014
  - Dual porting of RTUs complete

Current Status

- SCADA upgrade scheduled for Fall 2011
- PPM complete and SOPs in process
- Switching and outage tool implemented and upgrade in process
- CRSP Reconfiguration – boundary meter list developed, contracts evaluated, customers notified
- Scheduling System – scheduled for January/June 2012

OCI Cost Savings/Avoidance

- Avoid new ACCs ~$2.1 million and temporarily retrofitting existing ~$85K each
- SCADA contract support ~$150K/year
  - Hardware and operating system migrating to Linux based
  - Future reduction of hardware
- Scheduling system savings ~$250K up front and ~$110K/year for FERC 890 tariff modifications
- Future replacement/upgrade savings

Interim Cost Allocation Methodology

Current Operations Cost Allocation

- Current cost allocation for Operations required
  - Compromise between RMR, DSW, and CRSP
  - Historically based on 5 year average of a combination of SCADA points, ETags, and reservations processed and not on actual work being done
- Resulting cost allocation:
  - Difficult data gathering work and not an accurate allocation over time
  - Average of 5 years expenses in both offices (FY06 to FY10)
    - RMR 48.3% and DSW 51.7%
    - Eventually will become an average of an average which would be meaningless
  - Western indicated we would develop a long term cost approach
  - Project specific costs were deducted from allocation pools
    - WECC Dues, Boulder Canyon line lease

Davis 05/06 69kv and 230kv Substation Upgrade Example

- 69kv upgrade to Breaker and a half and 230kv Double Breaker Double Buss
- Increased SCADA points by more than 4 times
- Operations work is actually less due to ease of switching of equipment
- System much more reliable

Proposed Cost Allocation

Metrics Criteria

- Metrics were correlated based on the tasks performed by each of the four Operations functions (generation related, transmission related, or both).
  - Applicability: Different projects will have contributing factor(s)
  - Simplicity: Less complicated
  - Relevance: Specific to individual power systems
  - Data Acquisition: Data widely available
  - Maintenance: Upkeep relatively easy
  - Cost: Easily derived each year
  - Defendable: Easily explained; scientific & engineering basis

Use of Metrics

- Disadvantages of using separate metric for each of the Operations functions:
  - Time consuming to gather and update the data
  - Complex tools would be required
  - Too many moving parts, maintenance issues
  - Tools will be costly and time consuming
- Each of these would increase costs to the customers

Automated Generation Control (AGC)

- For AGC, generation related factors were considered
  - MW generation value under control of Operator
  - Number of reserve sharing activations
  - Number of generation re-dispatch
  - Percent time spent on each project

Operations Support (OS)

- For OS, no metric was identified
- OS supports all aspects of Operations as well as other groups, in particular: AGC, TSO, and TSS
- Allocation of other functions/groups will determine what needs to be done for OS

Transmission and Switching (TSO)

- Factors considered for TSO
  - SCADA points
  - Number of substations
  - Number of circuit breakers
  - Number of transformers
  - Number of switching orders
  - Percent time spent on each project

Transmission Scheduling (TSS)

- Factors considered for TSS
  - Number of tags
  - Number of OASIS reservations
  - Path management activities, unscheduled flow mitigations, curtailments, outage postings
  - Percent time spent for each project

Cost Breakout

- AGC – Generation
- TSO – Transmission
- TSS and OS
  - 50% Generation
  - 50% Transmission

Task Analysis

Task Analysis Worksheet

	Trans Weight	Gen Weight	FTE (Position)
Generation (G)	0	1	1
Transmission (T)	1	0	1
Generation & Transmission (B)	0.5	0.5	1

		No. of FTE	Role (G, T, B)	Transmission Impact	Generation Impact	Check
J4000 (OPS)	North (Loveland)	2	B	1	1	2
	South (Phoenix)	0		0	0	0
J4100 (TSO)	North (Loveland)	12	T	12	0	12
	South (Phoenix)	11	T	11	0	11
J4200 (OS)	North (Loveland)	10	B	5	5	10
	South (Phoenix)	4	B	2	2	4
J4800 (TSS)	North (Loveland)	16	B	8	8	16
	South (Phoenix)	16	B	8	8	16
J4900 (AGC)	North (Loveland)	9	G	0	9	9
	South (Phoenix)	8	G	0	8	8
Total		88		47	41	88
	FTE Task Ratio (%)			53%	47%	

Proposed Cost Allocation

- Metrics
  - Nameplate MVA capacity of all Federal projects’ generation
  - Line miles of all Federal transmission systems or projects
  - Correlated by the tasks performed under each Operations function
- Exclude Trust Projects
  - Net Operating Cost = Total Operating Cost - Revenues from Trust projects
- Complexities
  - Parker/Davis Operationally integrated with Boulder Canyon, but fiscally separate
  - CAWCD moving to WALC BA

Features of Proposed Methodology

- Fact-based (generation MVA & transmission miles)
- Counts all projects
- Task oriented
- Simple (no complicated data gathering/algorithm)
- Easy & inexpensive to maintain
- Can work going forward

Analysis of Proposed Allocation

Cost Allocation Proposal

FTE Task Ratio (Generation)	46.59%	
FTE Task Ratio (Transmission)	53.41%	
Total Cost in Pool - FY13 Workplan	16,990,298	
Less attributable to Non-Federal Advances	(1,524,030)	8.97% of Total Cost
	15,466,268	Available for Allocation

			Proposed - Cost Allocation				
			System Impact		Available		
			Generation	Transmission	for Allocation		
Generation (Nameplate MW)	***Transmission System (Miles)***	**Power System**	46.59% ***7,205,875***	53.41% ***8,260,393***	100.00% ***15,466,268***	Pool Cost %	Federal %
752	3,445	Pick-Sloan WD	933,944	3,561,912	4,495,856	26.46%	29.07%
200	7	Fryingpan-Arkansas	248,327	7,445	255,772	1.51%	1.65%
1,833	2,324	CRSP	2,275,352	2,403,008	4,678,360	27.54%	30.25%
565	275	Central Arizona	701,525	284,349	985,874	5.80%	6.37%
2,079	53	Boulder Canyon	1,523,364	54,802	1,578,165	9.29%	10.20%
375	1,541	Parker Davis	1,523,364	1,593,389	3,116,753	18.34%	20.15%
0	278	Intertie	0	287,244	287,244	1.69%	1.86%
0	22	Front & Levee	0	22,748	22,748	0.13%	0.15%
0	44	Salinity Control	0	45,496	45,496	0.27%	0.29%
5,804	7,989	**Total**	**7,205,875**	**8,260,393**	**15,466,268**	91.03%	100.00%
				Non-Federal Advances		8.97%	
						100.00%	

Shared Generation Component - BC and PD

Cost Allocation Proposal With Additional Non-Federal Advance

FTE Task Ratio (Generation)	46.59%
FTE Task Ratio (Transmission)	53.41%

Total Cost in Pool - FY13 Workplan	16,990,298	
Less attributable to Non-Federal advances	(1,857,040)	10.93% of Total Cost
	15,133,258	Available for Allocation

			Proposed - Cost Allocation					
			System Impact		Available			
			Generation	Transmission	for Allocation			
Generation	***Transmission System***		46.59%	53.41%	100.00%	Pool Cost	Prior to	
(Nameplate MW)	***(Miles)***	**Power System**	***7,050,722***	***8,082,536***	***15,133,258***	%	Dry Fork	Change
752	3,445	Pick-Sloan WD	913,835	3,485,219	4,399,054	25.89%	26.46%	-0.57%
200	7	Fry-Ark	242,980	7,284	250,265	1.47%	1.51%	-0.03%
1,833	2,324	CRSP	2,226,360	2,351,268	4,577,629	26.94%	27.54%	-0.59%
565	275	Central Arizona	686,420	278,227	964,646	5.68%	5.80%	-0.12%
2,079	53	Boulder Canyon	1,490,563	53,622	1,544,185	9.09%	9.29%	-0.20%
375	1,541	Parker Davis	1,490,563	1,559,081	3,049,645	17.95%	18.34%	-0.39%
0	278	Intertie	0	281,060	281,060	1.65%	1.69%	-0.04%
0	22	Front & Levee	0	22,258	22,258	0.13%	0.13%	0.00%
0	44	Salinity Control	0	44,516	44,516	0.26%	0.27%	-0.01%
5,804	7,989	**Total**	***7,050,722***	***8,082,536***	***15,133,258***			

Non-Federal Advances	10.93%	8.97%	1.96%
	100.00%	100.00%	0.00%

Shared Generation Component - BC and PD

RMR Project Impacts	27.36%	27.97%	-0.60%
CRSP Project Impacts	26.94%	27.54%	-0.59%
DSW Project Impacts	34.76%	35.53%	-0.76%
Non-Federal Impacts	10.93%	8.97%	1.96%
	100.00%	100.00%	0.00%

Estimated Allocation Percentage and Dollar Impact

Power Systems	FY11 Historical 5-Year %	New %	Change	Amount Based on FY13 Work Plans: Historical % ($)	New % ($)	Change
Pick-Sloan WD	27.61%	26.46%	-1.15%	4,691,021	4,495,856	(195,165)
Fryingpan Arkansas	0.93%	1.51%	0.58%	158,010	255,772	97,762
	28.54%	27.97%	-0.57%	4,849,031	4,751,628	(97,403)
Colorado River Storage	27.05%	27.54%	0.49%	4,595,876	4,678,360	82,485
Central Arizona	2.98%	5.80%	2.82%	506,311	985,874	479,563
Boulder Canyon	3.07%	9.29%	6.22%	521,602	1,578,165	1,056,563
Parker Davis	25.05%	18.34%	-6.71%	4,256,070	3,116,753	(1,139,317)
Intertie	3.55%	1.69%	-1.86%	603,156	287,244	(315,911)
Front & Levee	0.27%	0.13%	-0.14%	45,874	22,748	(23,126)
Salinity Control	0.52%	0.27%	-0.25%	88,350	45,496	(42,854)
	35.44%	35.52%	0.08%	6,021,362	6,036,280	14,918
Non-Federal Advances						
Mead-Phoenix	3.33%			565,777		
Independent Power Producers	2.92%			496,117		
Laramie River Station	2.25%			382,282		
Rapid City DC Tie	0.47%			79,854		
	8.97%	8.97%	0.00%	1,524,030	1,524,030	0
	100.00%	100.00%	0.00%	16,990,298	16,990,298	0

Estimated Allocation Percentage and Dollar Impact With Additional Non-Federal Advance

Power Systems	FY11 Historical 5-Year %	New %	Change	Amount Based on FY13 Work Plans: Historical % ($)	New % ($)	Change
Pick-Sloan WD	27.61%	25.89%	-1.72%	4,691,021	4,399,054	(291,967)
Fryingpan Arkansas	0.93%	1.47%	0.54%	158,010	250,265	92,255
	28.54%	27.36%	-1.18%	4,849,031	4,649,319	(199,712)
Colorado River Storage	27.05%	26.94%	-0.11%	4,595,876	4,577,629	(18,247)
Central Arizona	2.98%	5.68%	2.70%	506,311	964,646	458,336
Boulder Canyon	3.07%	9.09%	6.02%	521,602	1,544,185	1,022,583
Parker Davis	25.05%	17.95%	-7.10%	4,256,070	3,049,645	(1,206,425)
Intertie	3.55%	1.65%	-1.90%	603,156	281,060	(322,096)
Front & Levee	0.27%	0.13%	-0.14%	45,874	22,258	(23,616)
Salinity Control	0.52%	0.26%	-0.26%	88,350	44,516	(43,833)
	35.44%	34.76%	-0.68%	6,021,362	5,906,310	(115,051)
Non-Federal Advances						
Mead-Phoenix	3.33%	3.33%		565,777	565,777	
Independent Power Producers	2.92%	2.92%		496,117	496,117	
Dry Fork		1.96%			333,010	
Laramie River Station	2.25%	2.25%		382,282	382,282	
Rapid City DC Tie	0.47%	0.47%		79,854	79,854	
	8.97%	10.93%	1.96%	1,524,030	1,857,040	333,010
	100.00%	100.00%	0.00%	16,990,298	16,990,298	0

Discussion and Comments

Next Steps

- Customers have 30 days to provide comments/feedback on proposed Cost Allocation Methodology
  - Due by October 20, 2011
  - Submit comments to Cathy Castle, Cost_Allocation_Project@wapa.gov
- Western to review comments and issue responses and final Cost Allocation Decision by November 30, 2011

Points of Contact

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