California ISO
Shaping a Renewed Future

Operations Highlights Report

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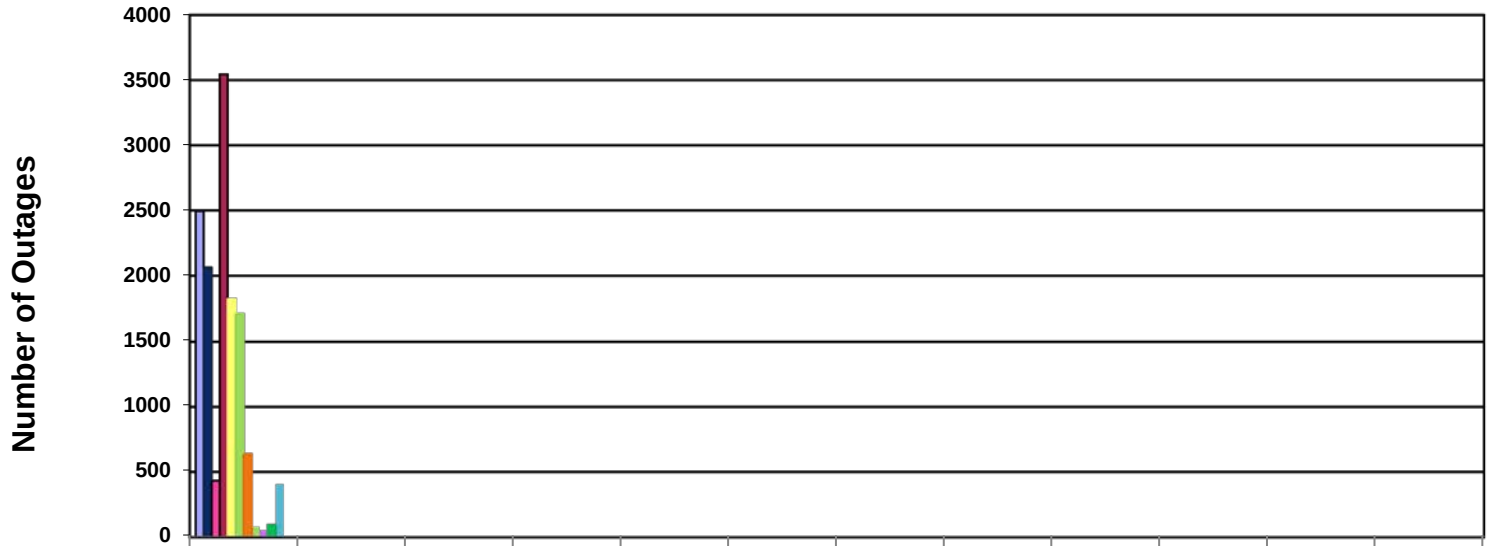
Vice President, Operations

Board of Governors Meeting
General Session
March 20-21, 2013

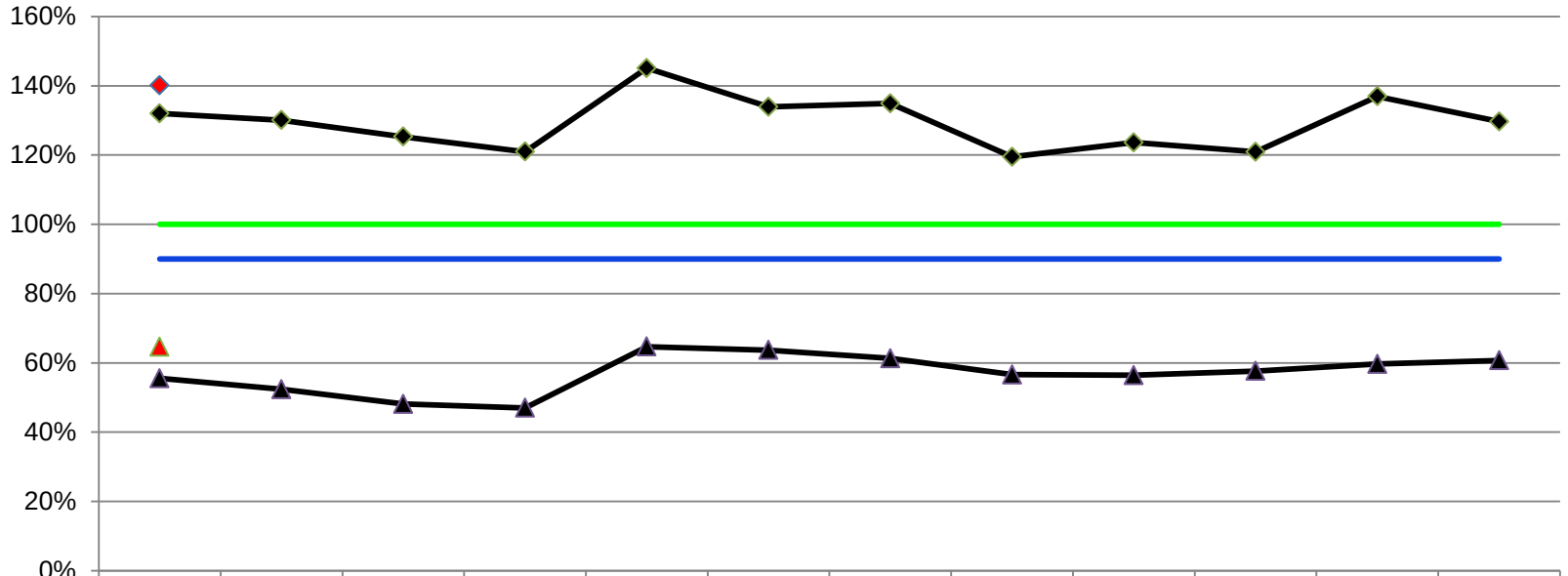
Outage Summary 2013



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Forced	2497											
Forced Generation	2064											
Forced Transmission	433											
Scheduled	3545											
Scheduled Generation	1831											
Scheduled Transmission	1714											
Cancelled	638											
Cancelled Forced Generation	81											
Cancelled Forced Transmission	54											
Cancelled Planned Generation	95											
Cancelled Planned Transmission	408											
RMO	0											

The Outage Summary graph shows the number of forced, scheduled and cancelled generation and transmission outages processed per month by the Outage Coordination office. Included in the graph is the number of restricted maintenance operations. Restricted maintenance operations accommodates additional transmission or other maintenance on the grid.

Control Performance Standard 1 and 2



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
'13 CPS 1	140%											
'13 CPS 2	64.63%											
'12 CPS 1	132%	130%	125%	121%	145%	134%	135%	119%	124%	121%	137%	130%
'12 CPS 2	55.53%	52.36%	48.14%	47.01%	64.67%	63.68%	61.30%	56.60%	56.40%	57.65%	59.69%	60.71%
CPS1 Min Req	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CPS2 Min Req	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%

CPS1 is a statistical measure of area control error (ACE) variability. It measures ACE in combination with the interconnection frequency. The CPS1 formula was developed on a conformance scale, therefore values over 100% are not only desired, but also expected.
CPS2 is a statistical measure of ACE magnitude. It is designed to limit a control area's unscheduled (or inadvertent) overflows that could result from large ACE values.
Note: Effective March 1, 2010: WECC launched the reliability based proof-of-concept field trial. The CPS2 measure is impacted by the reliability based control field trial currently underway. The ISO has received a signed release waiving the CPS2 requirement from WECC during the participation in the trial.

Reliability Based Control

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
+/- 20 min	0											
+/- 25 min (WECC reporting threshold)	0											
+/- 30 min	0											

Reliability Based Control (RBC) is an Eastern and Western Field Trial that supports the Interconnection frequency by requiring balancing areas to take action to limit the duration of operating outside a variable area control error (ACE) bound that gets "tighter" as actual frequency deviates further from 60 Hz., during field trial reporting, which is required, but not considered a violation. The following actions are taken when exceeding balancing area ace limit (BAAL) --***high*** or ***low*** for:

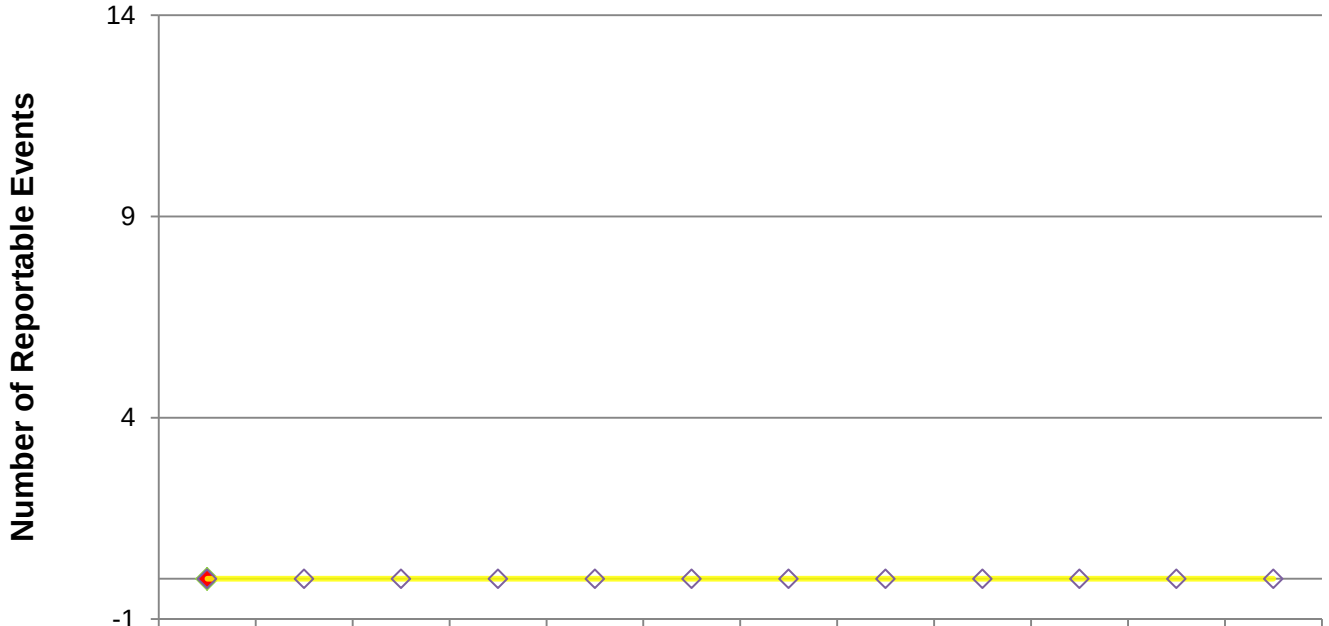
10 Consecutive Minutes – Identify any period that exceeded BAAL high or BAAL low for 10 consecutive clock minutes

20 Consecutive Minutes – Provide a brief explanation of the circumstances related to any period that exceeded BAAL high or BAAL low for 20 consecutive clock minutes. This is the WECC reporting threshold.

30 Consecutive Minutes –Provide a detailed account of the event related to any period that s exceeded BAAL high or BAAL low for 30 consecutive clock minutes. Proposed violation threshold.

The field trial started in March of 2010 and the chart indicates the number of times the BAAL exceeds a high or low limit each month. The reliability based control standard took effect on 3/1/2010 – the January and February control was monitored under CPS2.

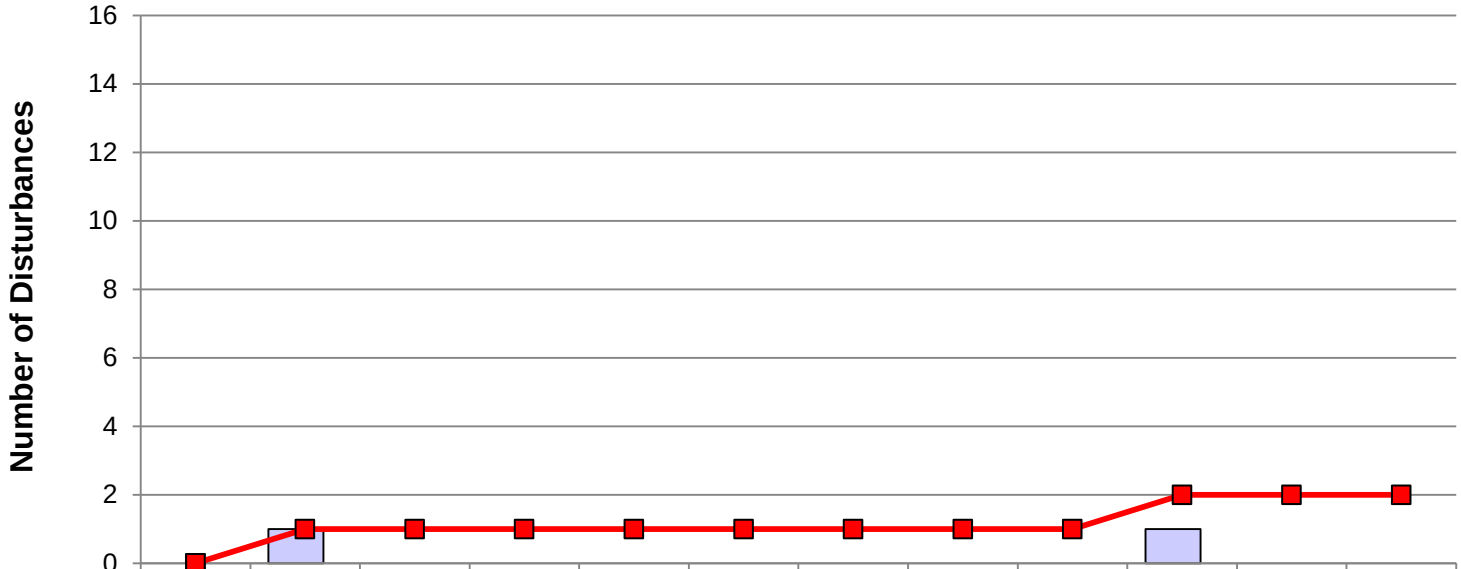
Operational Transfer Capability Reportable Events



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
'13 Reportable Events	0											
'12 Reportable Events	0	0	0	0	0	0	0	0	0	0	0	0
'13 YTD Reportable Events	0											
'12 YTD Reportable Events	0	0	0	0	0	0	0	0	0	0	0	0

Operational transfer capability reportable events are defined as path overloads that exceed WECC allowable time limits for both stability-related and thermally-related paths.

Frequency Disturbances Inside the ISO

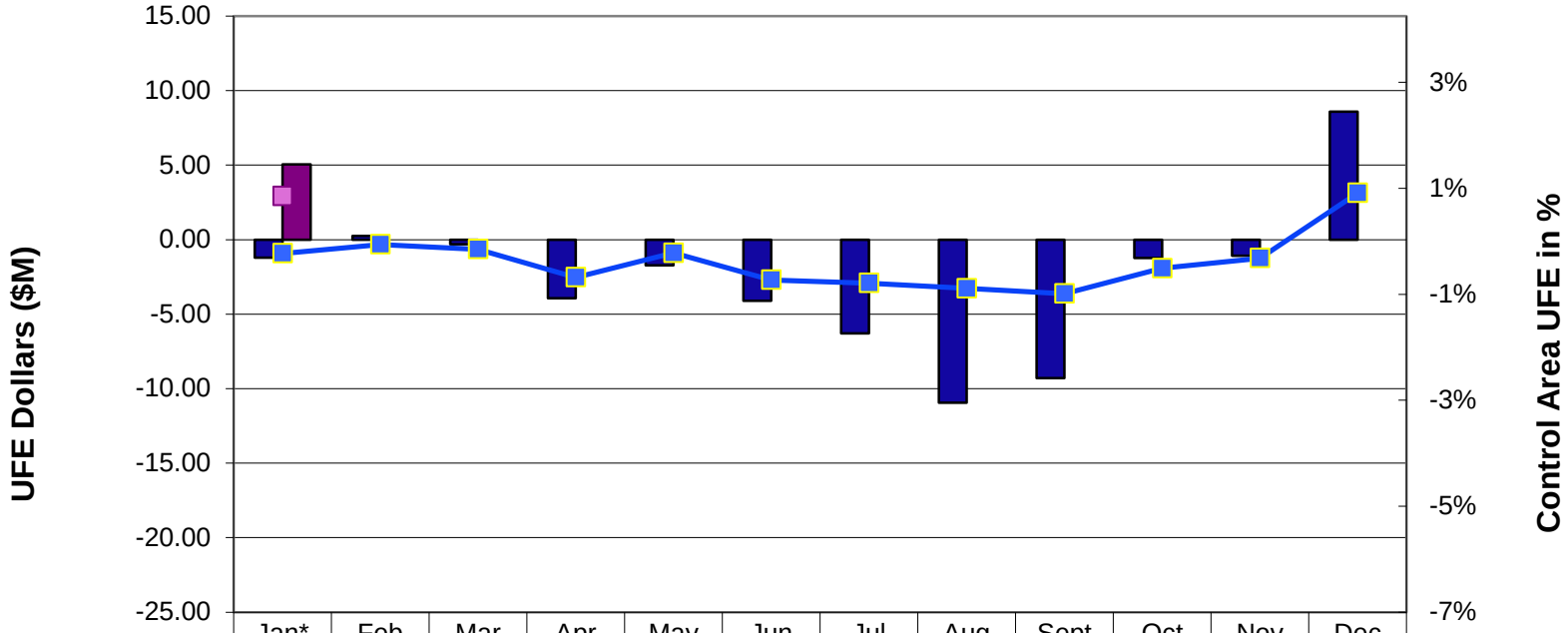


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Inside ISO '13	0											
Inside ISO '12	0	1	0	0	0	0	0	0	0	1	0	0
ISO DCS Violations '13	0											
ISO DCS Violations '12	0	0	0	0	0	0	0	0	0	0	0	0
13 YTD Disturbances Total	0											
12 YTD Disturbances Total	0	1	1	1	1	1	1	1	1	2	2	2

Frequency Disturbances are results of a sudden loss of load or generation.

ISO DCS Violations are those internal losses of generation greater than 80% of our most severe single contingency (currently 920 MW), where the ACE is not recovered within the 15 minutes. Prior to June 22, 2011, the ISO DCS Violations were those internal losses of generation greater than 35% of our most severe single contingency (which was 402.5 MW), where the ACE is not recovered within 15 minutes. Data provided is current through 01/31/2013.

System Unaccounted for Energy (UFE)

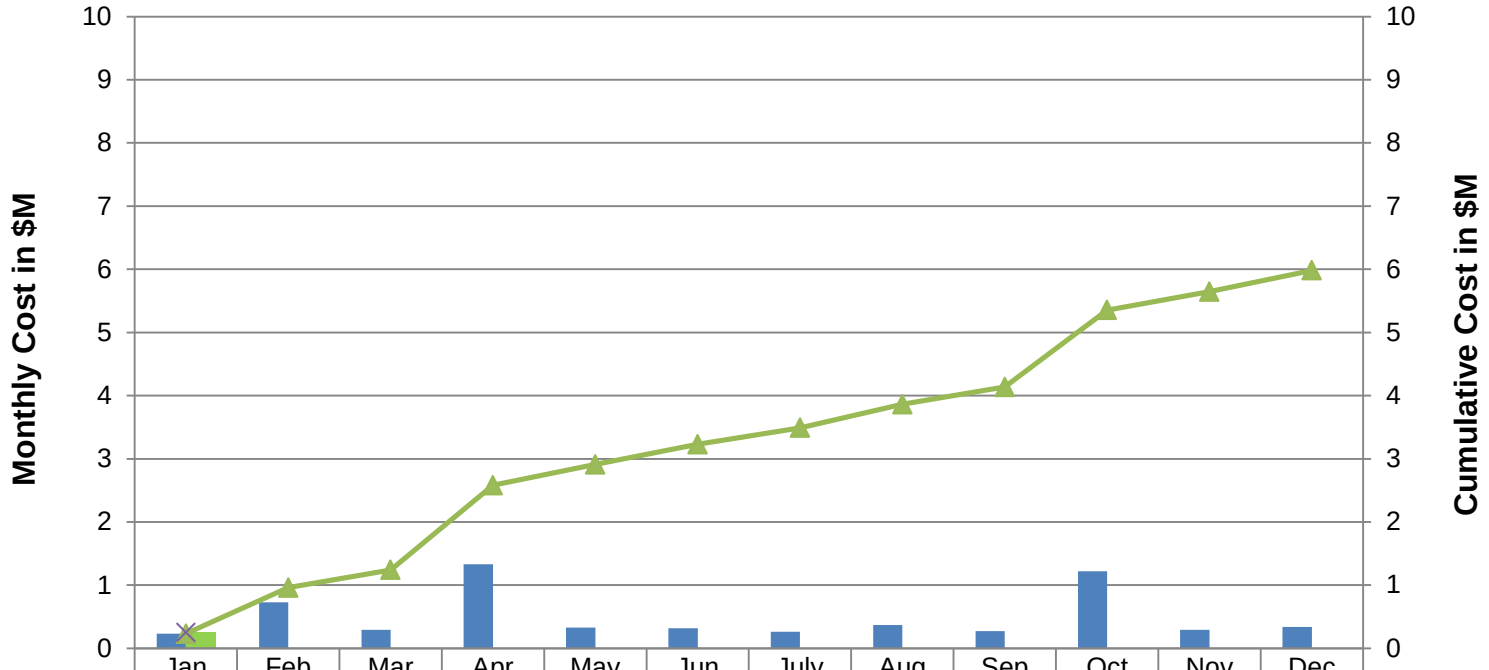


	Jan*	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2012 UFE Dollars	-1.21	0.25	-0.31	-3.94	-1.72	-4.11	-6.28	-10.95	-9.29	-1.22	-1.07	8.58
2013 UFE Dollars	5.05											
2012 Control Area UFE %	-0.23%	-0.06%	-0.15%	-0.68%	-0.22%	-0.73%	-0.79%	-0.89%	-0.99%	-0.51%	-0.32%	0.91%
2013 Control Area UFE %	0.85%											

The overall pattern for 2012 shows UFE levels trending slightly negative within acceptable ranges, similar to, but proportionately somewhat greater than in 2011. The positive UFE for December reflects the results of ISO meter system polling issues caused by a combination of factors that occurred late in 2012 including the fallback of the MV-90 system to Alhambra and the ISO disk storage array failure. It is expected that the UFE values will reflect more normally as the polling issues are resolved and the data properly captured for the December T+55B settlement statements.

*Estimated settlement quality meter data for the majority of the energy usage is used in the calculation of UFE Amounts for the Settlement Statements published at or before T+12B. Actual settlement quality meter data is required for and utilized in the calculation of UFE Amounts for the Settlement Statements published after T+55B.

Reliability Must Run (RMR)

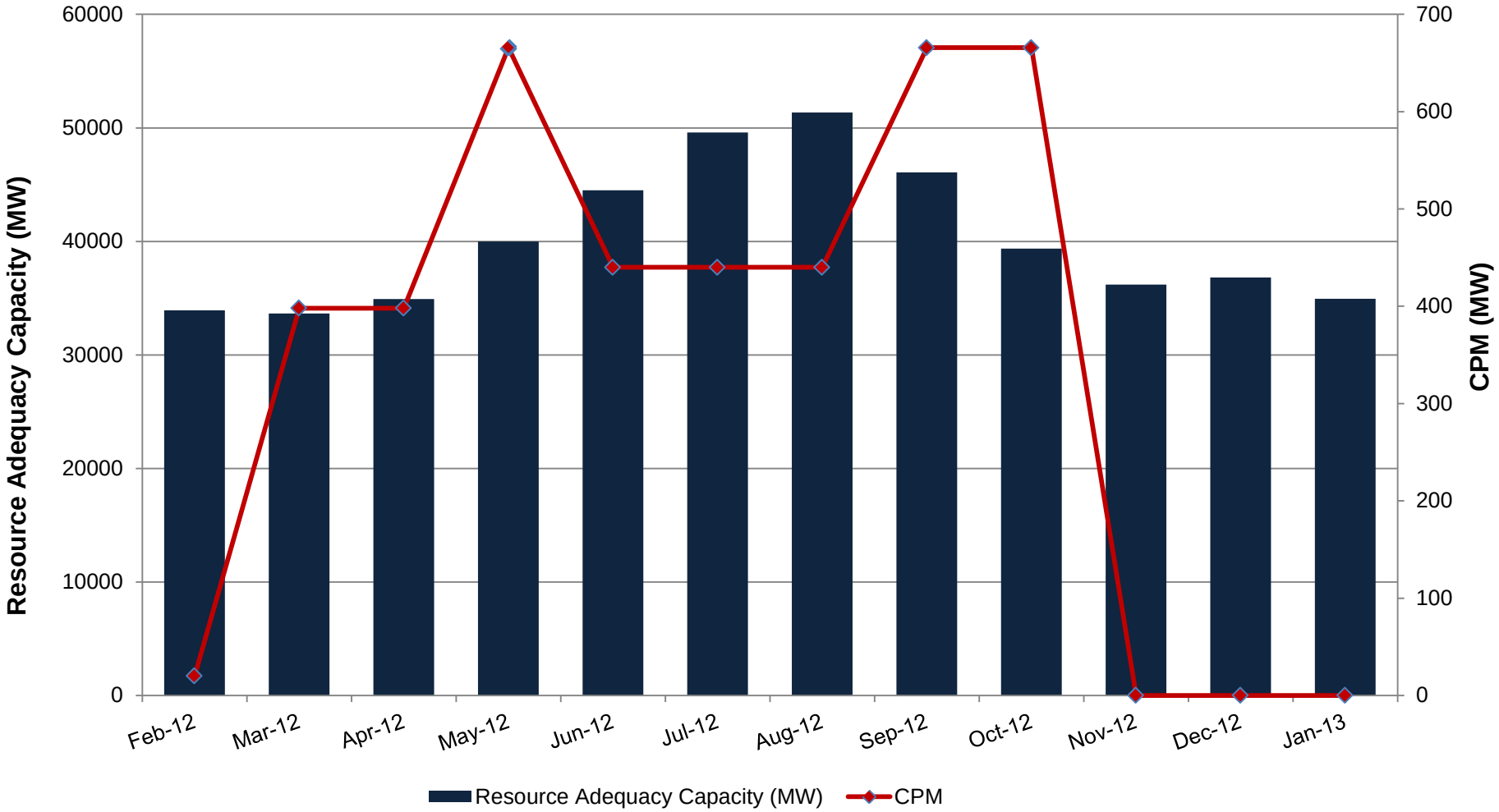


	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Monthly 2012 Cost Gross	$0.23	$0.73	$0.29	$1.33	$0.33	$0.32	$0.26	$0.37	$0.27	$1.22	$0.29	$0.34
Monthly 2013 Cost Gross	$0.25											
2012 Cumulative Cost Gross	$0.23	$0.96	$1.24	$2.58	$2.91	$3.23	$3.49	$3.86	$4.14	$5.35	$5.65	$5.98
2013 Cumulative Cost Gross	$0.25											

For 2013, in addition to the Oakland facility from 2012, numbers will reflect the addition of a portion of the Huntington Beach facility for Voltage Support.

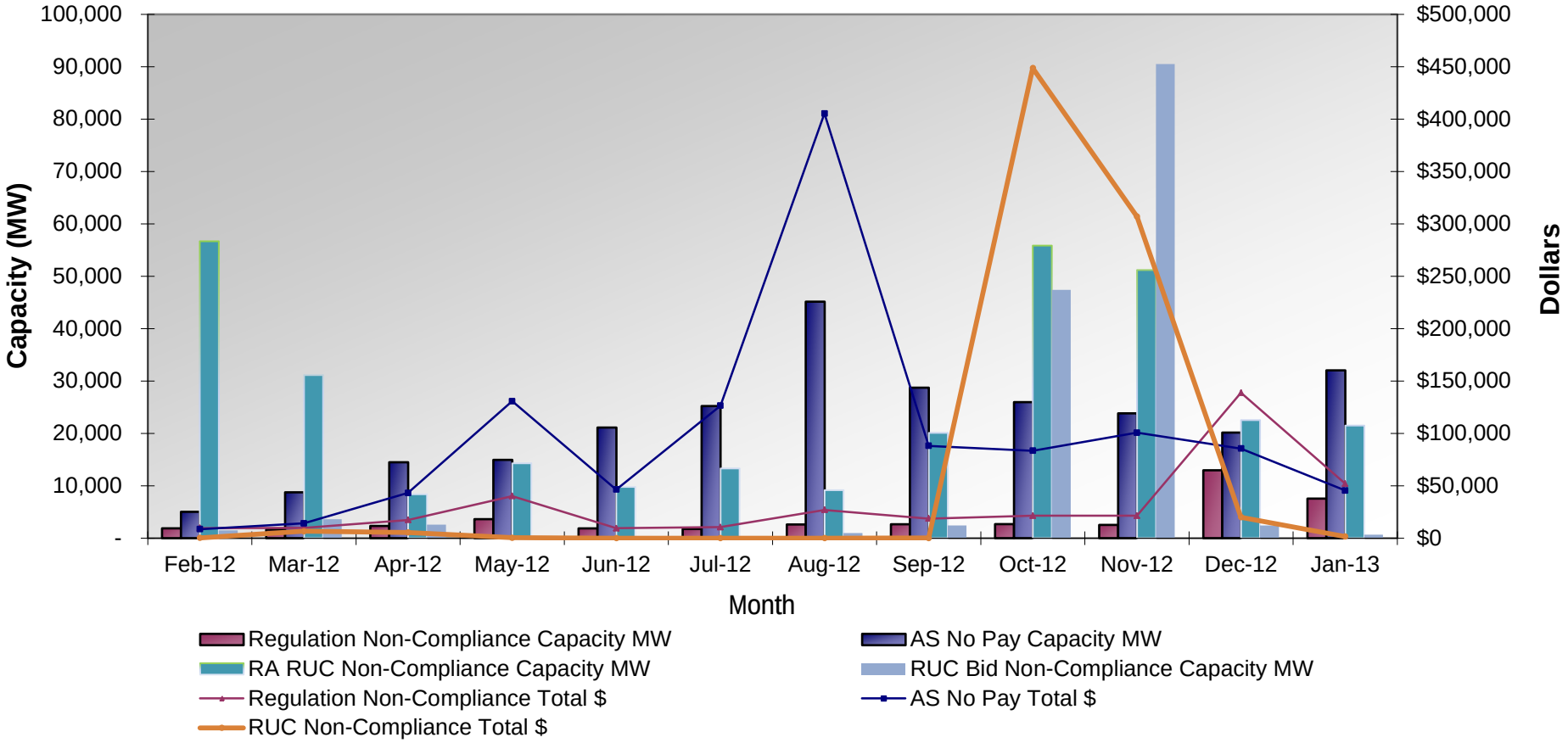
Note: There is a 120 day lag time before final reliability must-run data becomes available.

Resource Adequacy Capacity and CPM



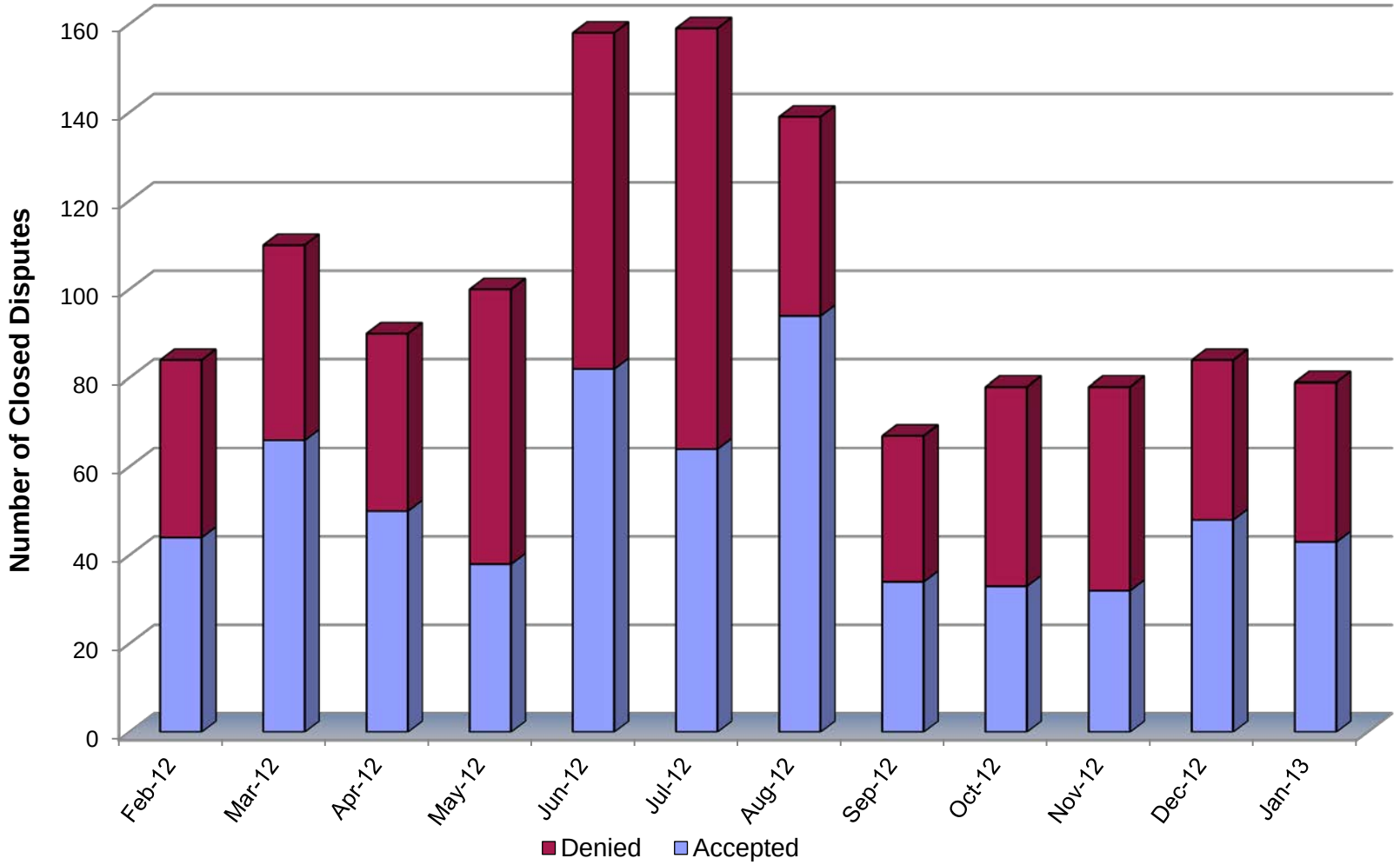
The total amount of resource adequacy capacity to meet local and system requirements as submitted in the supply plans for the month - January 2013 is shown in the above graph. No CPM procurement in January 2013.

Ancillary Service and RUC Compliance Programs



Ancillary Services and Residual Unit Commitment (RUC) Compliance Program: shows the monthly totals of non-compliant ancillary service capacity (MW) and non-compliant RUC capacity (MW). Market Services monitors suppliers of ancillary services and RUC to ensure that ancillary service and RUC capacity awarded in the ISO markets is available in real-time. While the RUC Bid Non-Compliance Capacity MW and RUC Non-Compliance Total $ returned to normal levels, the Regulation Non-Compliance Capacity MW and Regulation Non-Compliance Total $ are higher than normal levels due to an input data issue that is being addressed.

Closed Dispute History



The overall trend of approved disputes has remained moderate over the last five (5) months. The ISO continues to work to resolve identified issues and to educate clients in regards to the complexities of the markets and their associated settlement results.

Definitions:

The following are definitions of the items or systems covered in this report.

Control Performance Standards 1 & 2 (CPS1 & CPS2) –

- CPS1 is intended to provide a control area with a frequency sensitive evaluation of how well it is meeting its demand requirements. CPS1 is a statistical measure of area control error (ACE) variability.
- CPS2 is a statistical measure of ACE magnitude. It is designed to limit a control area's unscheduled (or inadvertent) power flows that could result from large ACE values. CPS2 is no longer a compliance measure: the ISO received a written release from WECC.

Reliability Based Control (RBC) Field Trial –

RBC is an Eastern and Western Field Trial that supports the interconnection frequency by requiring balancing areas to take action to limit the duration of operating outside a variable area control error bound that gets "tighter" as actual frequency deviates further from 60 Hz. The following actions are taken when exceeding balancing area ace limit (BAAL) - high or low for:

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- 30 Consecutive Minutes – provide a detailed account of the event related to any period that exceeded BAAL high or BAAL low for 30 consecutive minutes.

Definitions, continued:

Operating Transfer Capability Reportable Events – OTC reportable events are defined as those transmission path overloads that exceed WECC allowable time limits for stability rated and thermally rated paths (30 minutes).

ISO Control Area Frequency – The ISO control area frequency figures report internal and external system disturbances and include reportable events of the Disturbance Control Standard (DCS) resulting from ISO control area internal disturbances, such as loss of a large generating unit or transmission line. WECC allowable time limit for disturbance recovery is 15 minutes. Per WECC criteria, qualifying disturbances are defined as those greater than 80% of our maximum generation loss from our most severe single contingency. The ISO's most severe single generation contingency is a nuclear unit with maximum generation output 1,120 MW, 80% of which is the 896 MW thresholds used herein.

Residual Unit Commitment (RUC) Rescission Payments –

The rescission charge for a RUC award rescinds the RUC capacity payments to the extent that the resource with a RUC award does not fulfill the requirements associated with the award. The rescission charge rescinds RUC capacity payment for generating units, dynamic system resources, and non-dynamic system resources when one of the following occurs:

- Generating unit and dynamic system resource – RUC capacity is availability-limited undispatchable due to an outage or rerate is undelivered outside of a tolerance band, or ineligible for a RUC award because it is a resource adequacy resource.
- Non-dynamic system resource – RUC award is adjusted due to differences between RUC award amount and E-tag amount.

Additional information and examples can be found in the business practice manual for compliance monitoring.