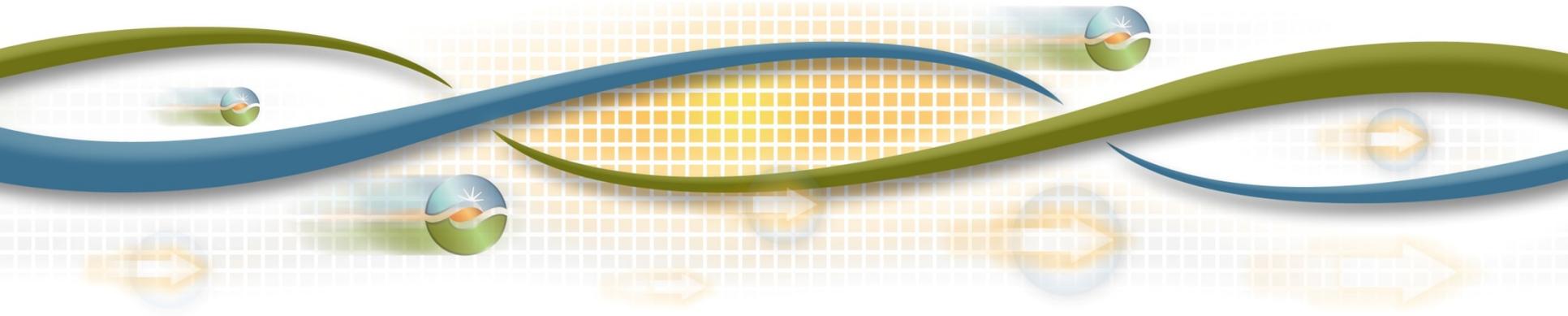


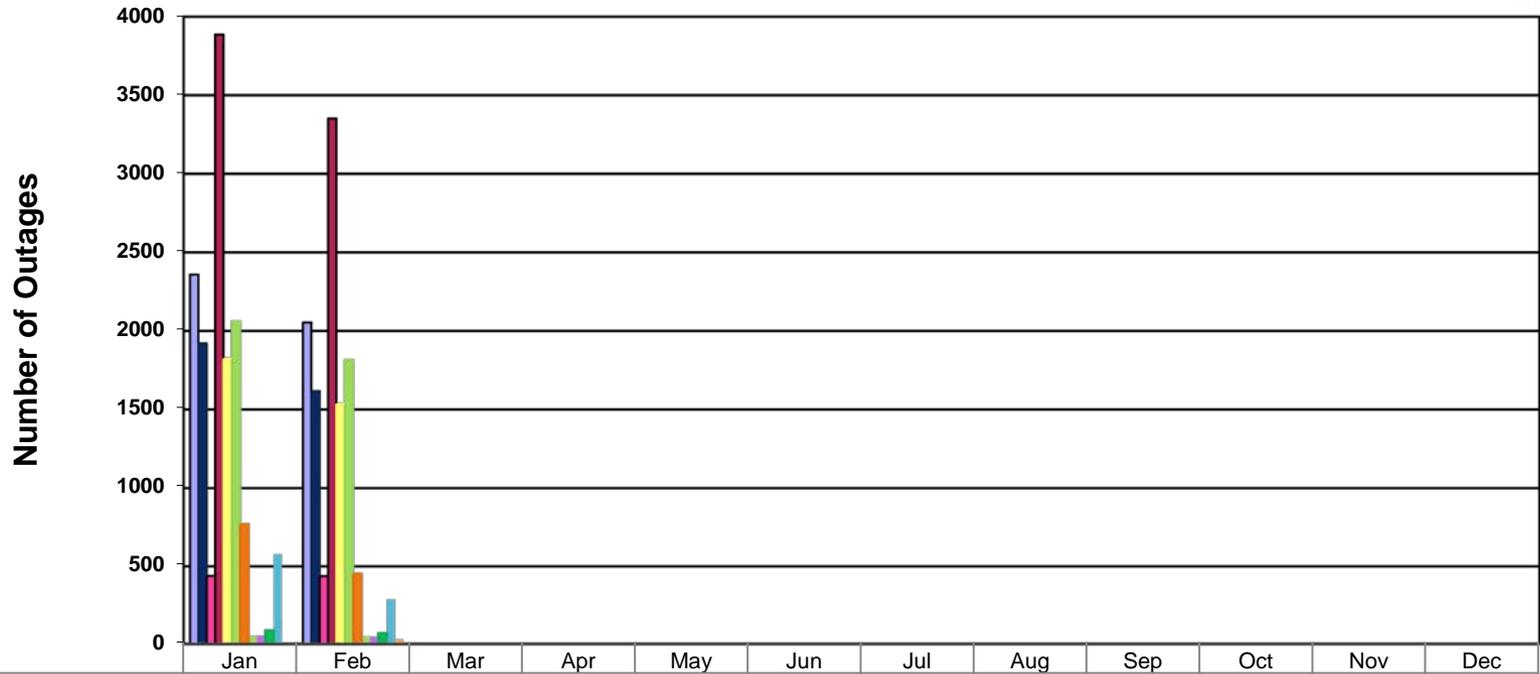
# Operations Highlights Report

Eric Schmitt  
Vice President, Operations

Board of Governors Meeting  
General Session  
March 22-23, 2012



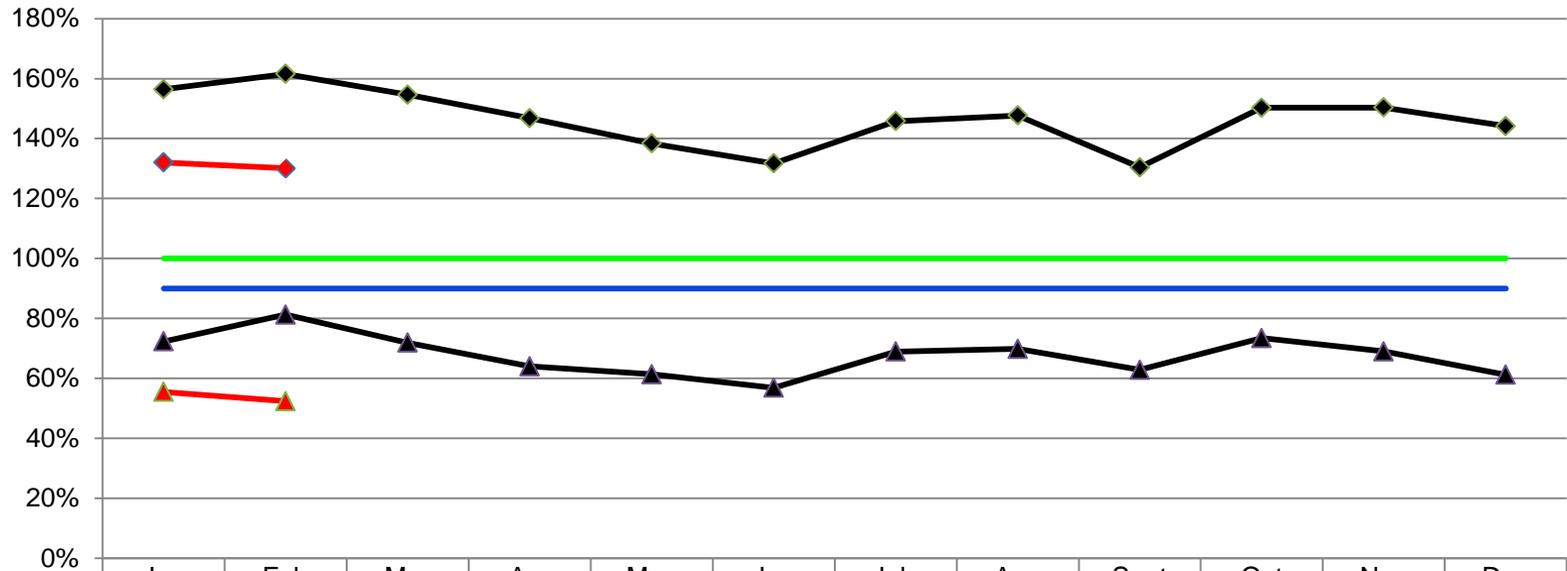
# Outage Summary 2012



■ Forced	2359	2054	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
■ Forced Generation	1921	1617										
■ Forced Transmission	438	437										
■ Scheduled	3886	3352										
■ Scheduled Generation	1825	1537										
■ Scheduled Transmission	2061	1815										
■ Cancelled	772	454										
■ Cancelled Forced Generation	53	51										
■ Cancelled Forced Transmission	53	45										
■ Cancelled Planned Generation	86	69										
■ Cancelled Planned Transmission	580	289										
■ RMO	0	29										

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
◆ '12 CPS 1	132%	130%										
▲ '12 CPS 2	55.53%	52.36%										
◆ '11 CPS 1	156%	162%	155%	147%	138%	132%	146%	148%	130%	150%	150%	144%
▲ '11 CPS 2	72.32%	81.29%	71.90%	64.02%	61.38%	56.89%	68.94%	69.85%	62.87%	73.43%	68.99%	61.24%
— 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%

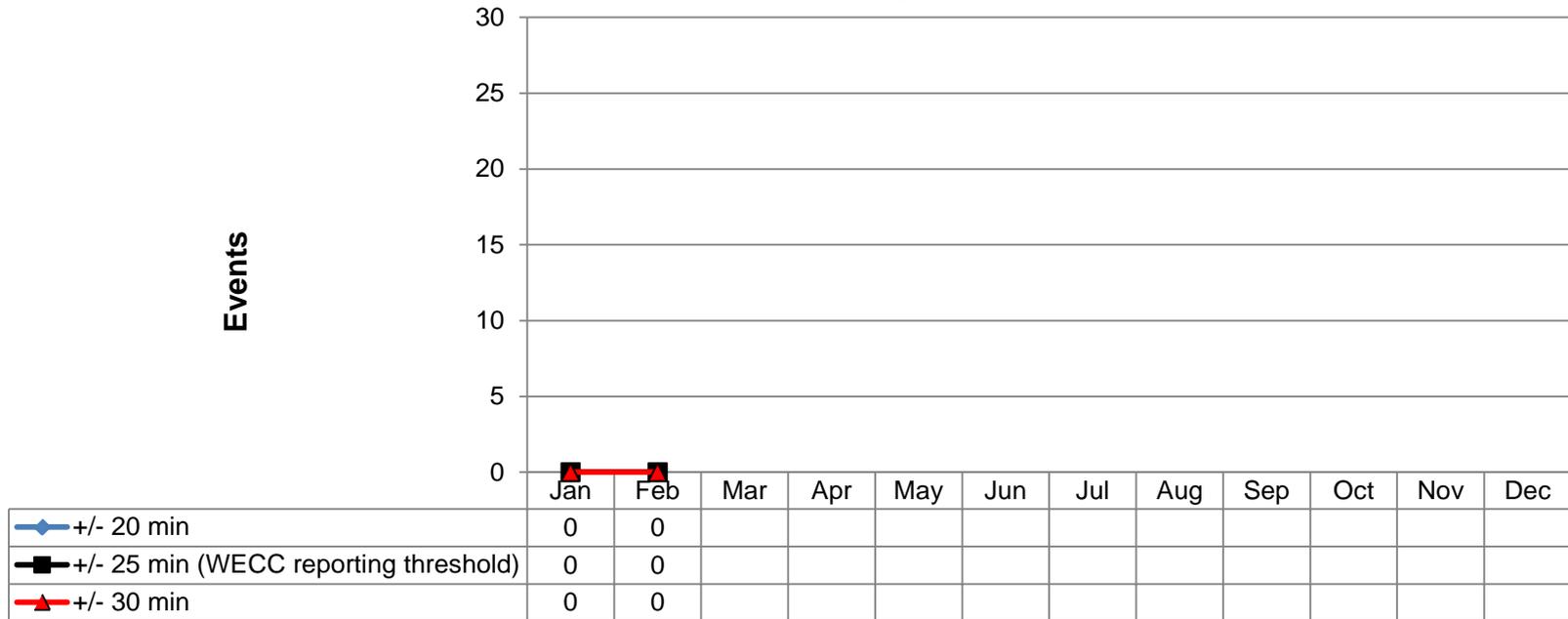
**CPS1** is a statistical measure of area control error (ACE) variability. It measures ACE in combination with the interconnection frequency.

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 control 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

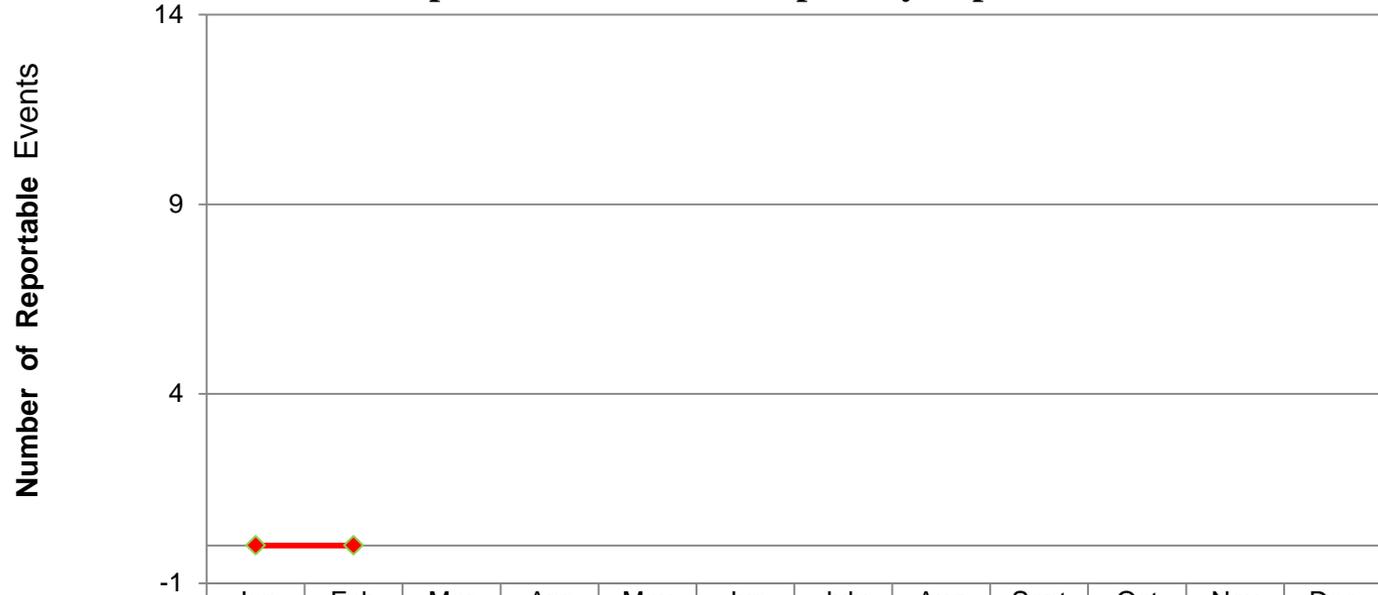


Reliability based control is an Eastern and Western Field Trial that supports the interconnection frequency by requiring balancing areas to take action to limit the duration of operating outside a variable area control error bound that gets “tighter” as actual frequency deviates further from 60 Hz., 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.
- **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.

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.

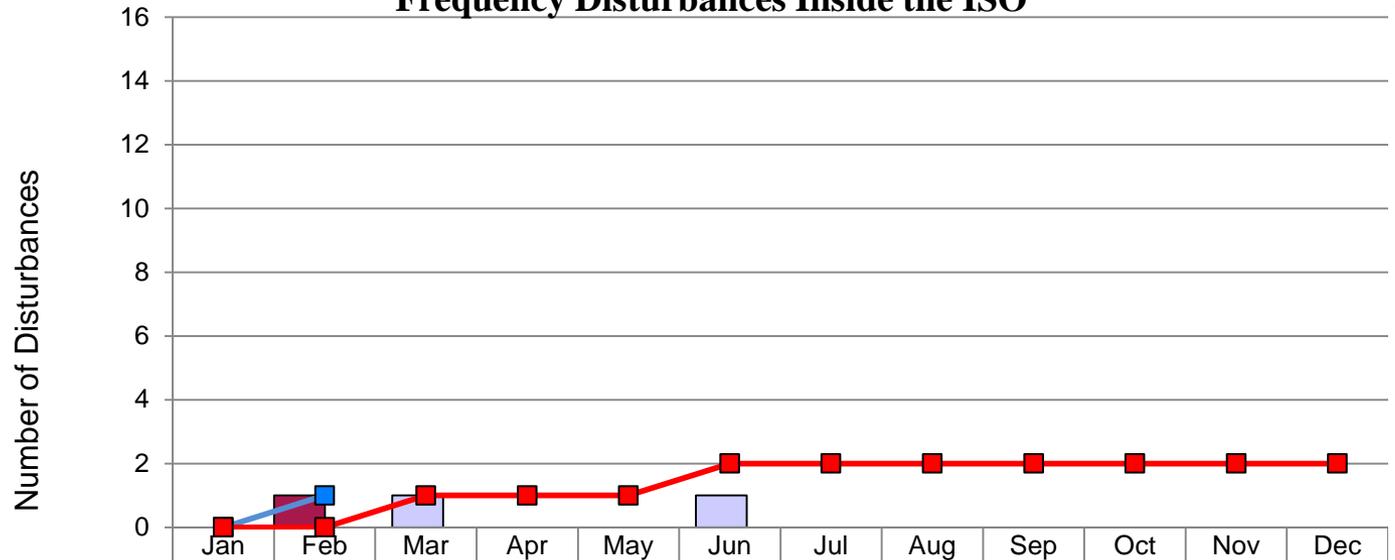
## Operational Transfer Capability Reportable Events



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
<span style="color: red;">■</span> '12 Reportable Events	0	0										
<span style="color: black;">■</span> '11 Reportable Events	0	0	0	0	0	0	0	0	0	0	0	0
<span style="color: red;">◆</span> '12 YTD Reportable Events	0	0										
<span style="color: black;">◆</span> '11 YTD Reportable Events	0	0										
	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.

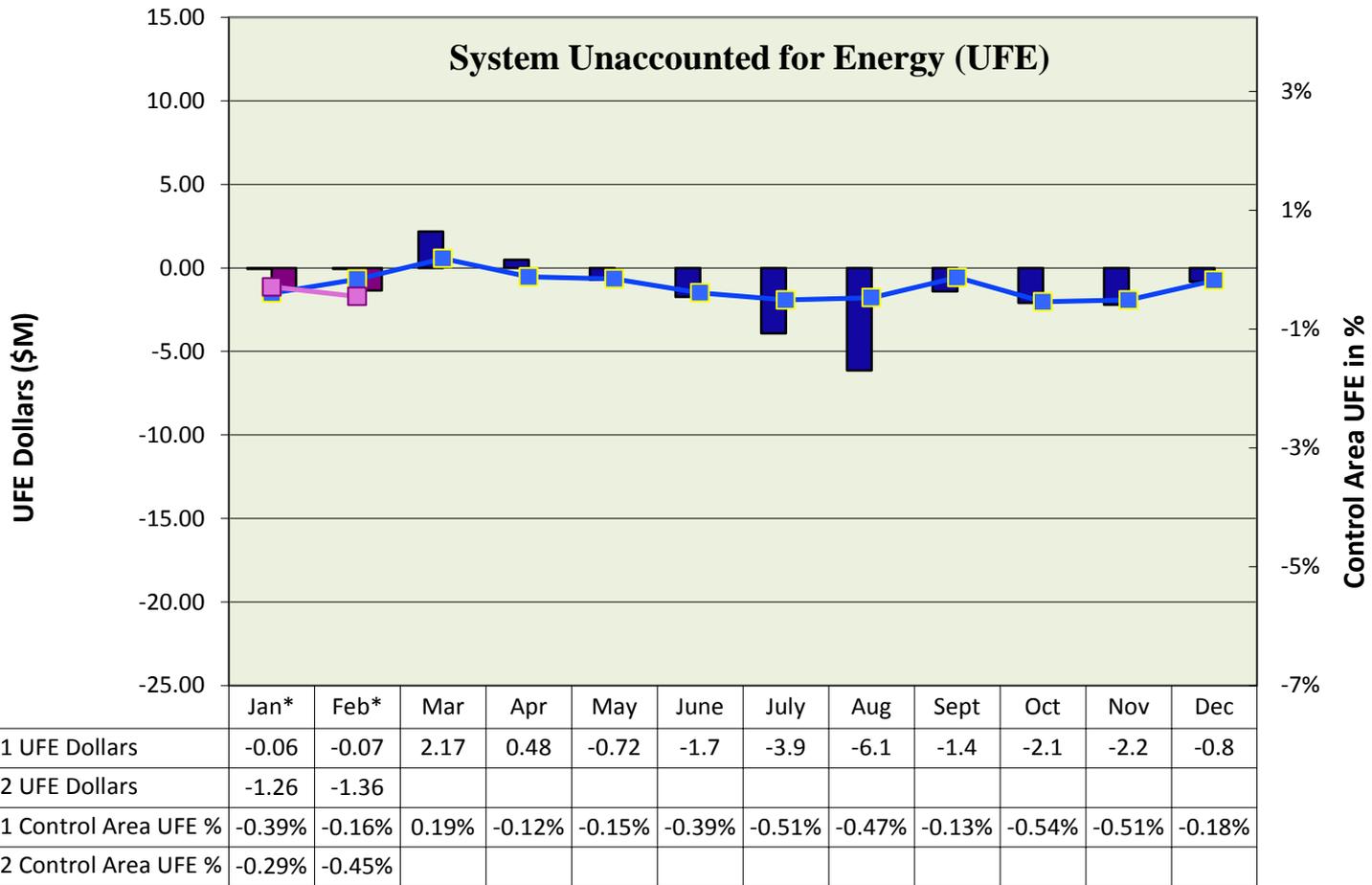
## Frequency Disturbances Inside the ISO



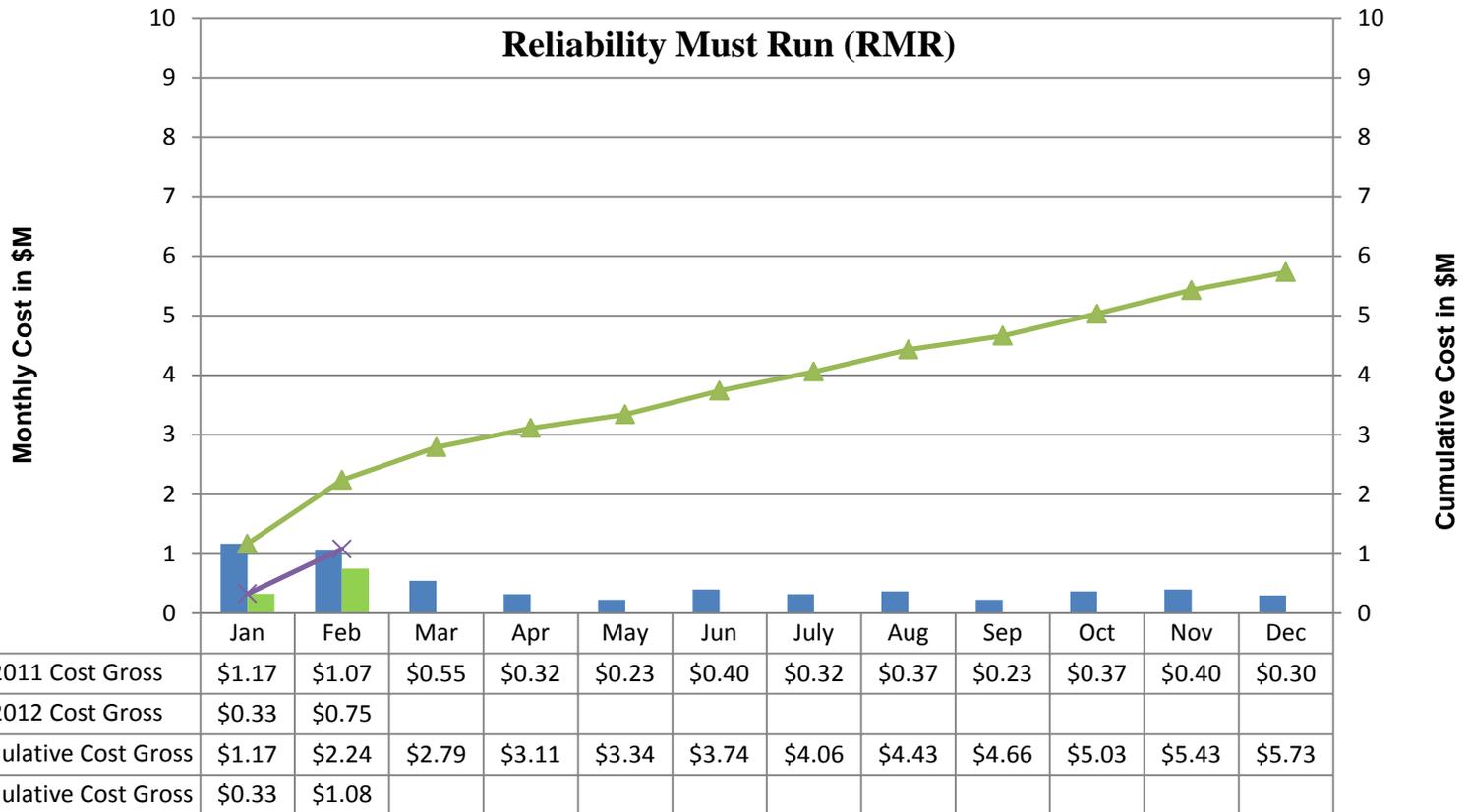
Inside ISO '12	0	1										
Inside ISO '11	0	0	1	0	0	1	0	0	0	0	0	0
ISO DCS Violations '12	0	0										
ISO DCS Violations '11	0	0	0	0	0	0	0	0	0	0	0	0
12 YTD Disturbances Total	0	1										
11 YTD Disturbances Total	0	0	1	1	1	2	2	2	2	2	2	2

**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 (currently 402.5 MW), where the ACE is not recovered within 15 minutes. Data provided is current through 2/29/12.

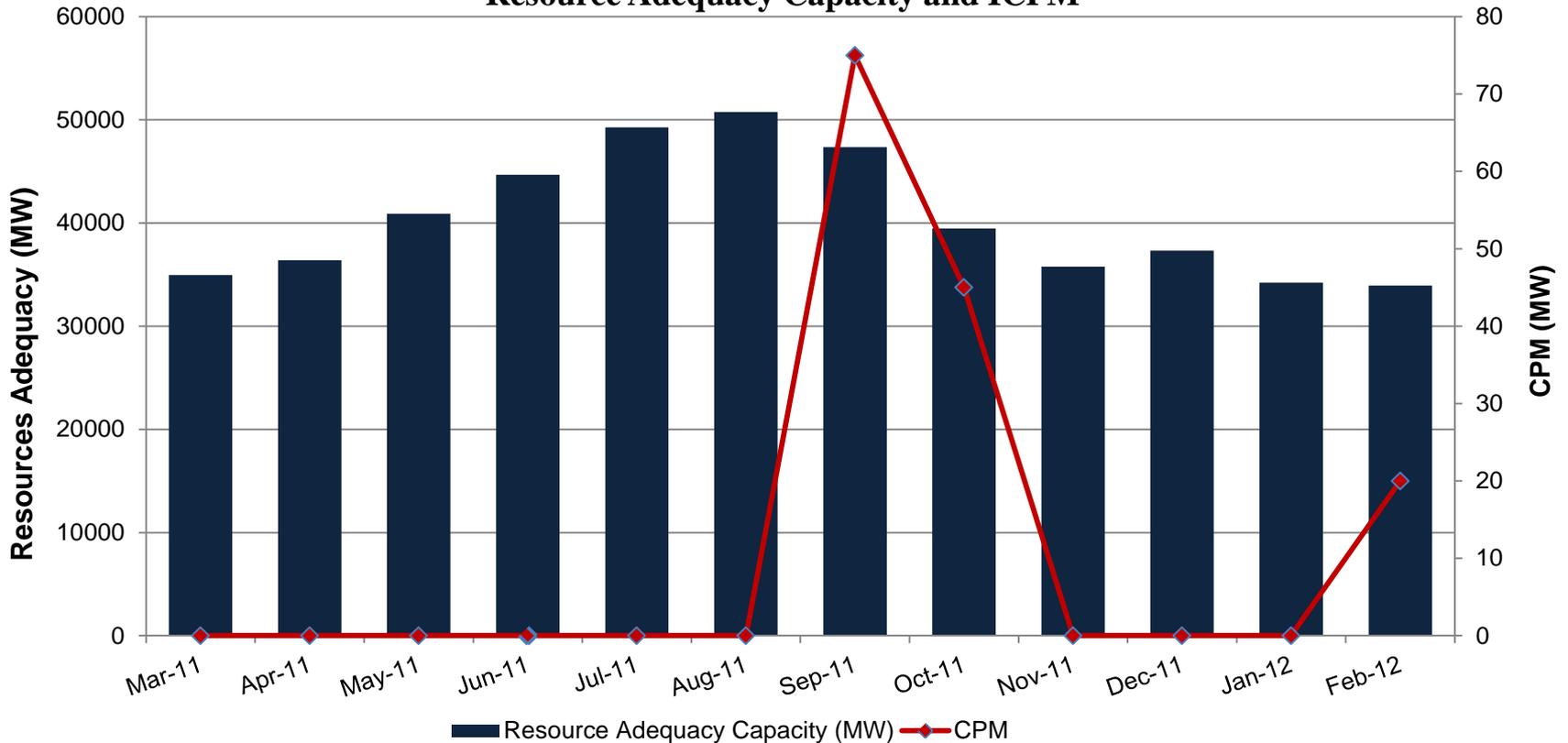


\*Estimated settlement quality meter data for the majority of the energy usage is used in the calculation of UFE Amounts for the Settlement Statements published at or before T+12B. Actual settlement quality meter data is required for and utilized in the calculation of UFE Amounts for the Settlement Statements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



Reliability Must-Run chart has been rescaled for improved readability due to having only one reliability must –run facility for 2012. Note: There is a 120 day lag time before final reliability must-run data becomes available.

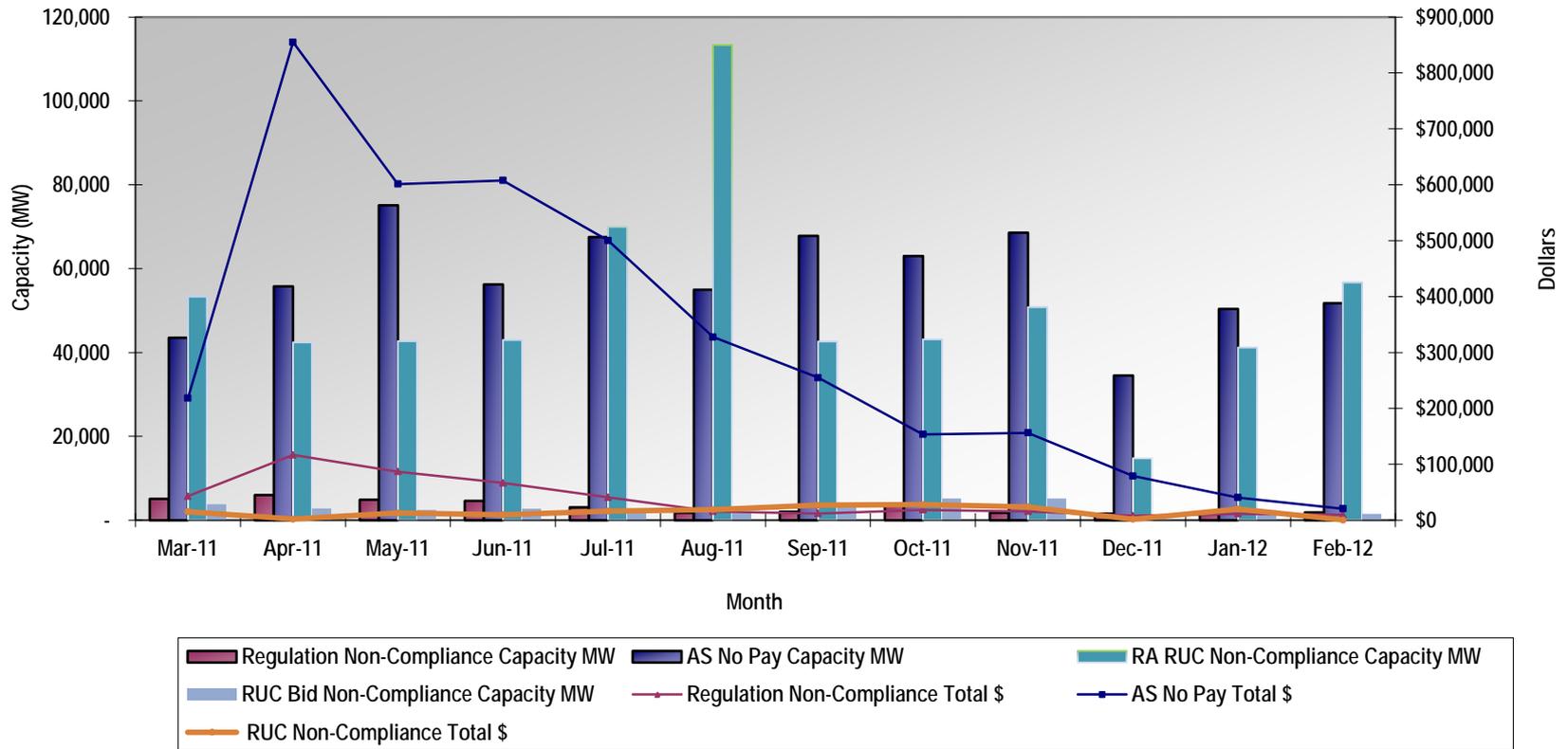
## Resource Adequacy Capacity and ICPM



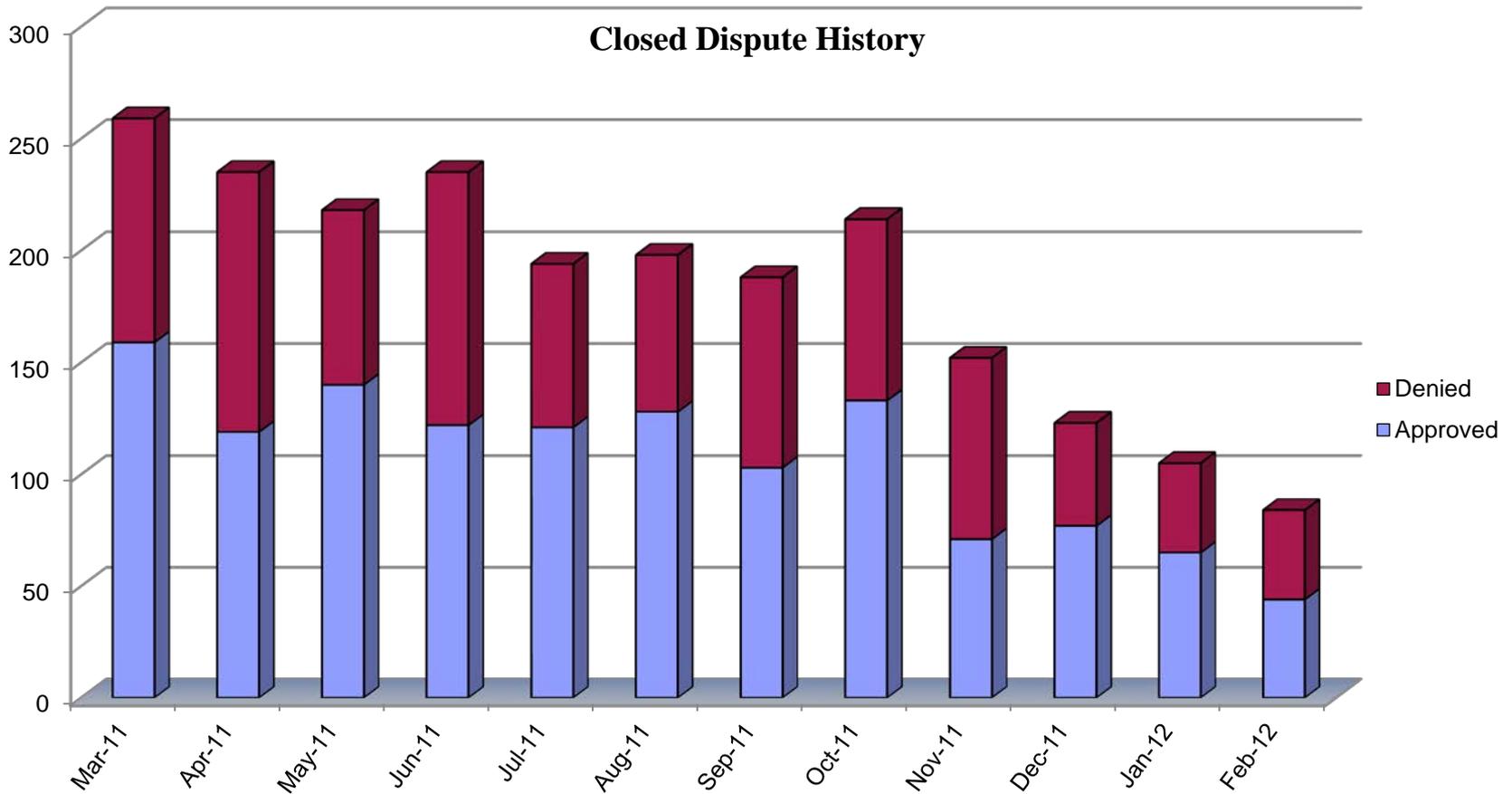
### Resource Adequacy Volume and ICPM Procurement

The total amount of resource adequacy capacity provided to meet local and system requirements as demonstrated in submitted supply plans, was 34213.37 MW in January and 33936.12 MW in February. The ISO issued a capacity procurement mechanism (CPM) on 02/08/12 for 20 MW on Huntington Beach Unit 1. The Capacity Procurement Mechanism Designation Issued 2/8/12 can be located at: <http://www.caiso.com/237a/237ac93c2a6c0.html>

## 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 market is available in real-time.



The overall trend of approved disputes since March 2011 continues in a downward direction as variance fixes continue to be applied to the market and post-market systems, and improvements in data accuracy controls are implemented. The overall volume of disputes remains high as market participants traverse the learning curve connected with the complexities of recent market functionality implementations and their associated settlements 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:

- 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.
- 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 (20 minutes) and thermally rated (30 minutes) paths.

### ***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 35% 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, 35% of which is the 392 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.