

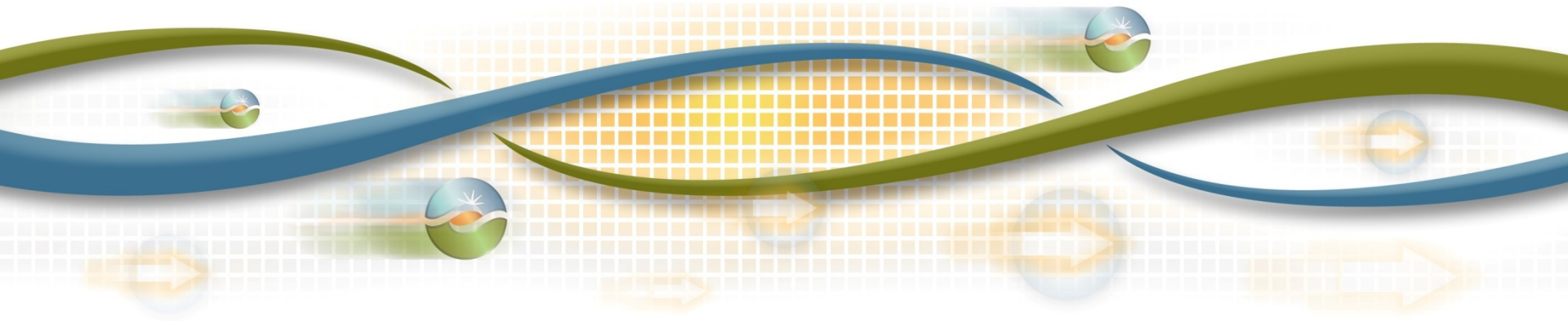


California ISO
Shaping a Renewed Future

Resource Performance Verification

Stakeholder Call

February 18, 2014

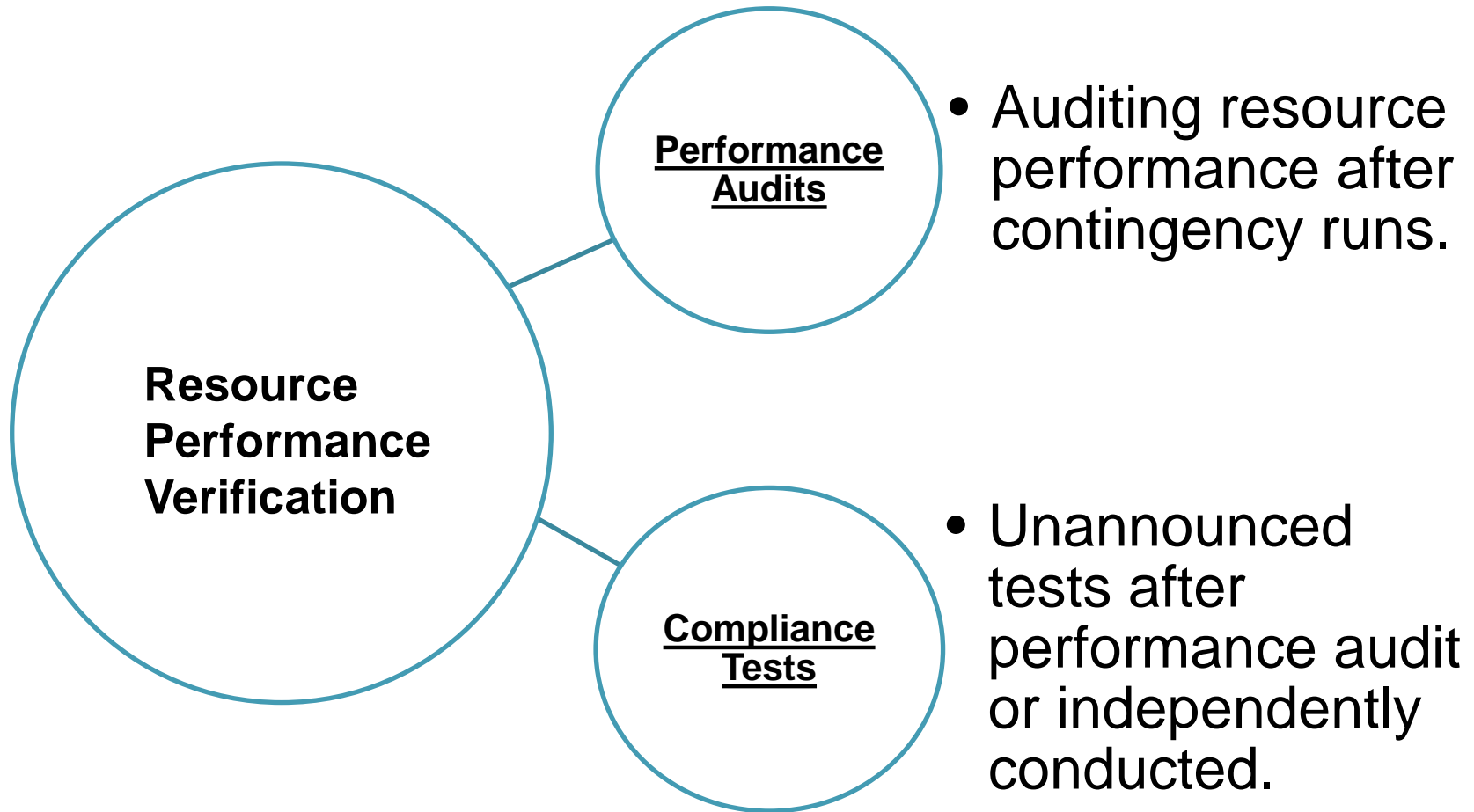


The ISO's Resource Performance Verification Program assesses the availability of ancillary service capacity

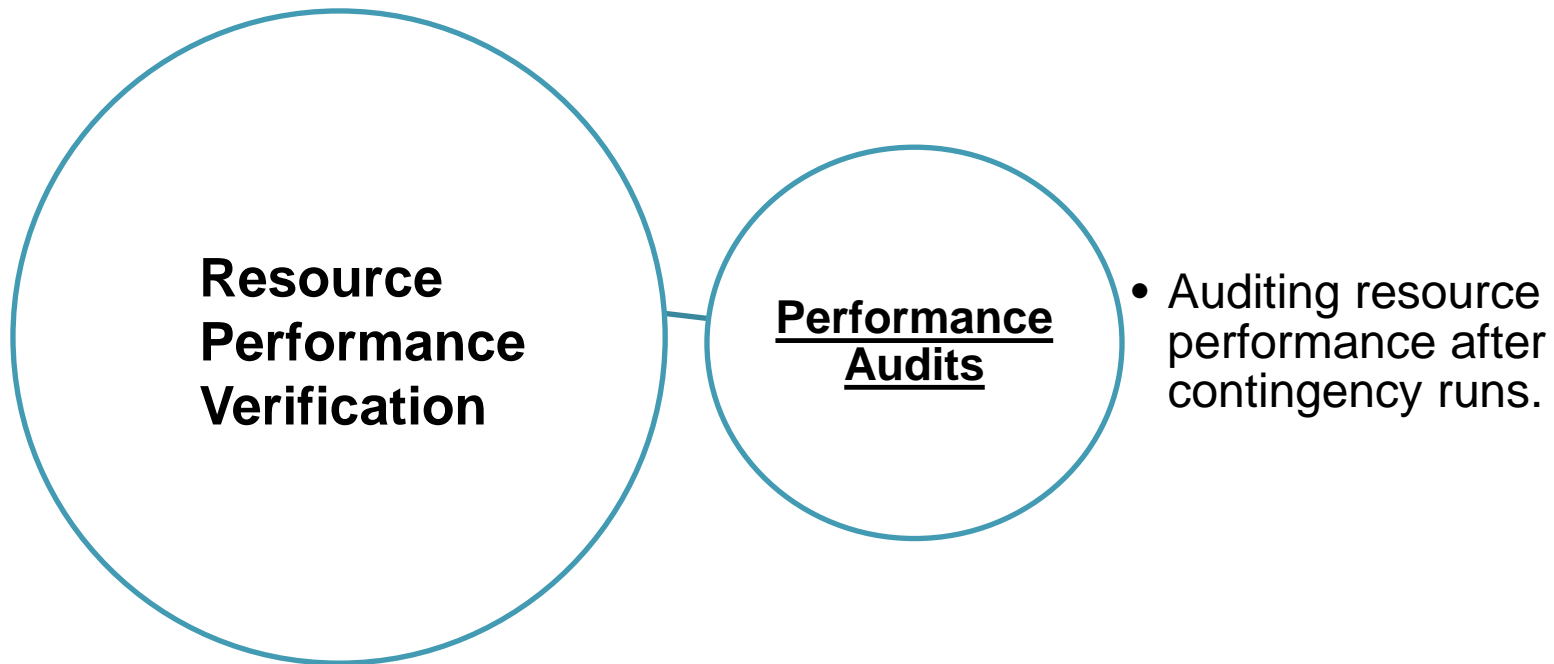
- The program assesses whether self-provided or awarded ancillary service capacity performs adequately in response to dispatch instructions.
- If a resource fails to achieve adequate performance, capacity payments will be rescinded.
- For more information regarding the specific process for the Resource Performance Verification Program please refer to Operating Procedure 5370.

tariff sections 8.9 - 8.10.8.7

Elements of Resource Performance Verification



Performance Audits

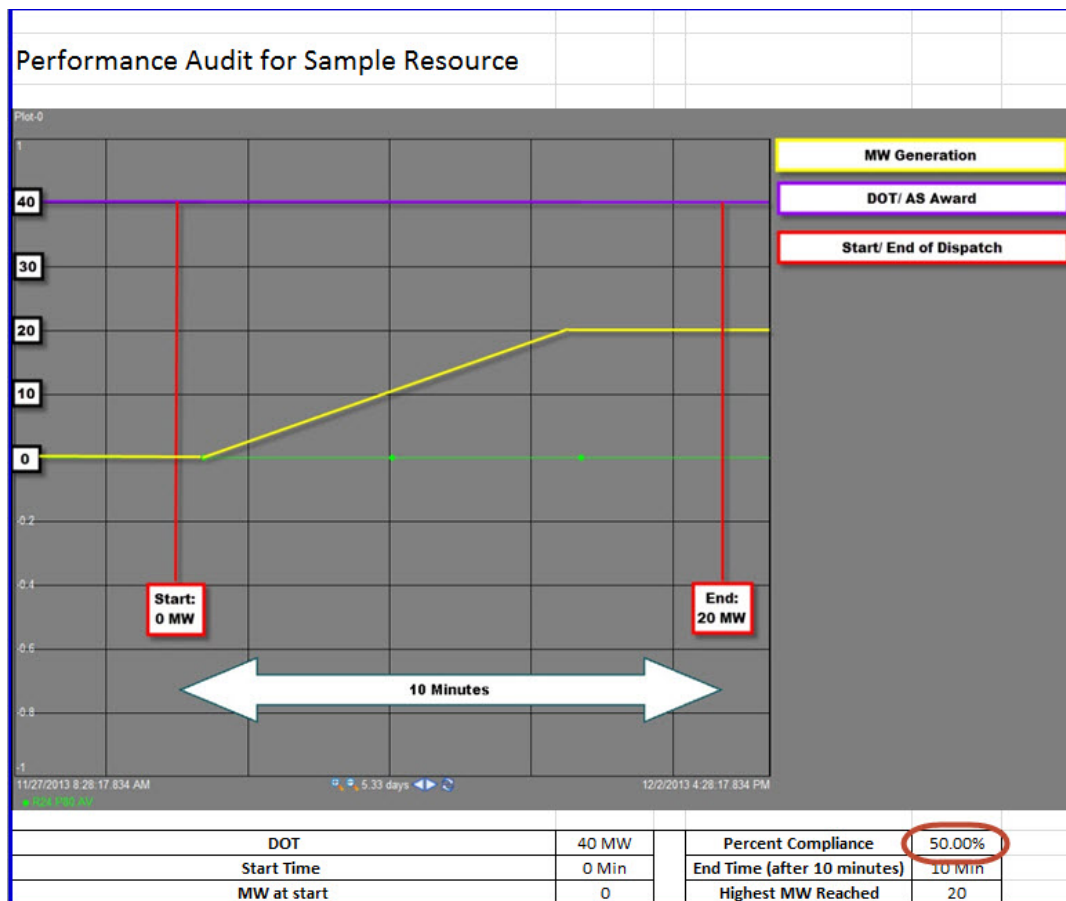


Mechanics of a Performance Audit

- The ISO analyzes performance of resources responding to contingency dispatches of ancillary services.
 - *The ISO reviews performance of resources providing spinning reserve and non-spinning reserve during the 10 minute contingency run.*
 - *Resources must convert a minimum of 90 percent of the dispatch of their award or self-provision into energy.*
 - *The start time of the audit period is the start of the 10 minute run.*
 - *However, resources have an obligation to provide energy as soon as they receive a contingency dispatch instruction.*

Example of a failed test

- The screenshot on the right is an example of a unit that failed a Performance Audit of a contingency dispatch.
- The unit was given a Non-spin dispatch of 40MW but was only able to produce 20MW.
- The unit failed the audit because it was not able to reach the 90% needed to be considered compliant.



Testing Criteria

- The unit's output will be tested upon the requirements set forth in Operating Procedure 5330.
- The 90% compliance will be based on the highest MW reached and sustained during the 10 minute period.
 - The 90% will be calculated based on the following formula:

$$\frac{(\text{MW at end of 10 min}) - (\text{MW at start of 10 min})}{(\text{DOT at end of 10 min}) - (\text{DOT at start of 10 min})}$$

Ramifications of failing a Performance Audit

- **If a resource fails a Performance Audit:**

1. The scheduling coordinator for the resource receives a warning notice.
2. The ISO will rescind capacity payments made to the scheduling coordinator for the resource.
 - The amount rescinded will reflect the unavailable capacity from the date of the Performance Audit back to the last test or the last successful response to a dispatch of the ancillary service capacity.
3. For RA resources that fail a Performance Audit, the ISO will notify FERC and the applicable Local Regulatory Authority.

Mechanisms to ensure accuracy of audit results

- ISO Operations generates a list of resources that receive dispatch instructions for a contingency run.
 - ISO metering conducts analyses of which resources did not convert 90 percent of the dispatch of awarded or self–provided capacity into energy during the 10 minute contingency run.
- An ISO Generation Dispatcher confirms audit results based on the contingency report.

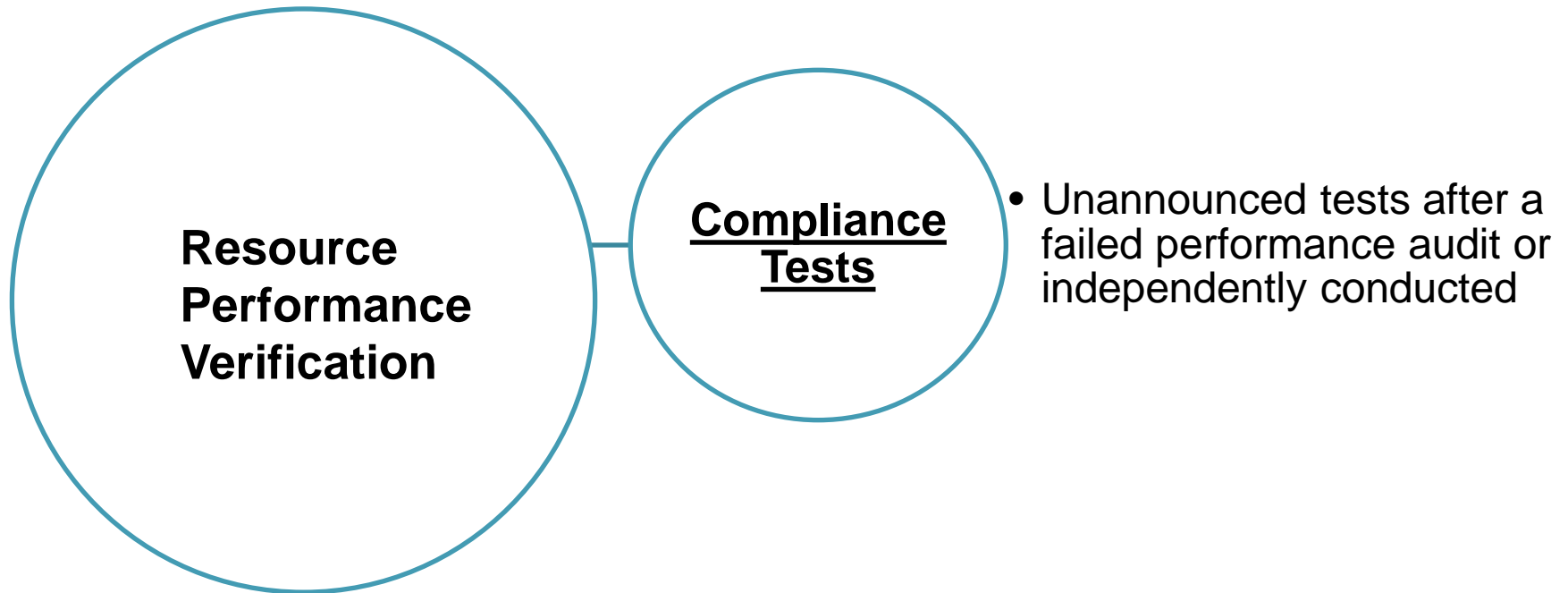
Mechanisms to ensure accuracy of audit results (cont.)

- The Scheduling Coordinator of the identified resource receives the audit results and a warning notice.
 - Primary and secondary representatives of the Scheduling Coordinator will be included in the notification.
- The ISO legal department confirms audit results for resource adequacy resources and confers with the Scheduling Coordinator prior to sending notice to FERC and the Local Regulatory Authority.

Situations resulting in expiration of the Warning Notice

1. If a Scheduling Coordinator schedules a subsequent retest and demonstrates the resource's ability to provide the ancillary service pursuant to Operations Procedure 5330.
2. If a resource passes a subsequent unannounced compliance test while the Warning Notice is in effect.
3. 6 months pass from the date that the Scheduling Coordinator received the Warning Notice.
 - *If a resource is identified in another audit or fails a Compliance Test, the ISO will immediately disqualify the resource from providing the applicable ancillary service.*

Compliance Tests

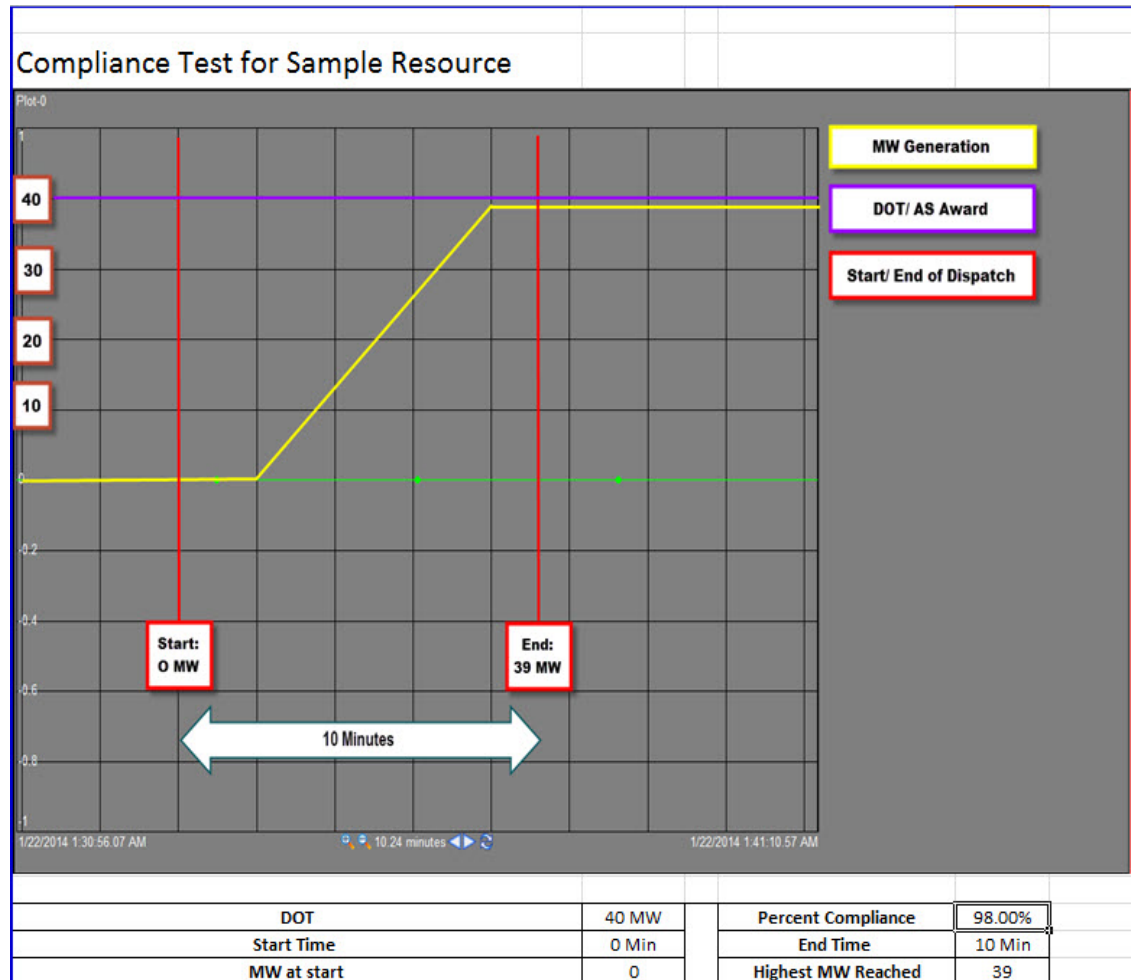


Mechanics of a Compliance Test

- ISO System Operations Management receives a list from previous performance audits of resources to conduct a Compliance Test when system conditions allow.
- The ISO analyzes the performance of resources responding to unannounced Compliance Tests.
 - *Resources must convert a minimum of 90 percent of the dispatch of their award or self-provision into energy within 10 minutes.*

A Successfully Passed Compliance Test

- On the right is an example of a Compliance Test result that successfully passed.
- The unit was dispatched for Nonspin for 40 MW. The unit responded with 39 MW within the 10 minute test frame.
 - The unit passed because it was over the 90% minimum requirement.



Ramifications of failing a Compliance Test with a Warning

- **If a resource fails a Compliance Test during a warning period:**
 1. The ISO will immediately disqualify the resource from providing the applicable ancillary service.
 2. The ISO will rescind capacity payments made to the scheduling coordinator for the resource.
 - The amount rescinded will reflect the unavailable capacity from the date of the unannounced Compliance Test until the last test or the last successful response to a dispatch of the ancillary service capacity.

Ramifications of failing a Compliance Test with Warning (cont.)

3. For RA resources that fail a Compliance Test, the ISO will notify FERC and the applicable Local Regulatory Authority.

Ramifications of failing a Compliance Test without a Warning

- **If a resource fails a Compliance Test :**
 1. The scheduling coordinator for the resource receives a warning notice.
 2. The ISO will rescind capacity payments made to the scheduling coordinator for the resource.
 - The amount rescinded will reflect the unavailable capacity from the date of the unannounced Compliance Test back to the last test or the last successful response to a dispatch of the ancillary service capacity.

Ramifications of failing a Compliance Test with Warning (cont.)

3. For RA resources that fail a Compliance Test, the ISO will notify FERC and the applicable Local Regulatory Authority.

Mechanisms to ensure accuracy of test results

- ISO Operations generates an Exceptional Dispatch Log that records the time and dispatch instructions based on the Compliance Test.
 - ISO metering conducts analyses of which resources did not convert 90 percent of the dispatch of awarded or self–provided capacity into energy during the unannounced Compliance Test.
- An ISO Generation Dispatcher confirms audit results based on Exceptional Dispatch Log.

Mechanisms to ensure accuracy of test results (cont.)

- The Scheduling Coordinator of the identified resource receives the test results and a warning notice.
 - Primary and secondary representatives of the Scheduling Coordinator will be included in the notification.
- The ISO legal department confirms test results for resource adequacy resources and confers with the Scheduling Coordinator prior to sending notice to FERC and Local Regulatory Authority.

Rescission of Capacity Payments – Settlements

- Payment rescission amounts will reflect:
 - The Committed Period as defined in 8.10.7, and as established by the Performance Audit or Compliance Test and noticed to the Scheduling Coordinator.
 - The identified Unavailable Capacity MW will be subtracted from awarded or self-provided capacity during the Committed Period.
 - Credit back for No Pay charges previously assessed via 8.10.8 or 31.5.7 that are associated with the identified Unavailable Capacity.

Rescission of Capacity Payments – Settlements (cont'd)

- Currently, the ISO is only capable of performing a manual calculation of the rescinded amount for placement on a Scheduling Coordinator's settlement statements via PTB.
- The ISO is targeting automating this calculation within the settlement configuration later in 2014.
 - The automation will trigger during the next applicable settlement run of a trade date identified to be within the Committed Period.
 - The automation will reduce the awarded capacity payment or obligation credit as appropriate prior to incorporating the applicable No Pay calculations.

Settlement Example

- Trade Date = 1/15/2013
- ASMP = \$10
- Awarded Non-Spin Capacity = 10 MW = (\$100) Payment
- Dispatch = 10 MW
- Meter = 7 MW
- Performance Audit = 3 MW Unavailable Capacity

- Last Response to A/S Dispatch = 1/03/2013
- Committed Period for Payment Rescission = 1/15/2013
back to 1/04/2013

Settlement Example (continued)

Date	Master File	Award	Derate	Dispatch	Meter	Award	No Pay	Net	Perform. Audit Result	New Award	New No Pay	New Net	Diff.
1/1/2013	10	10	0	0	0	\$ (100)	\$ -	\$ (100)		N/A	N/A	N/A	N/A
1/2/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		N/A	N/A	N/A	N/A
1/3/2013	10	5	0	5	5	\$ (50)	\$ -	\$ (50)		N/A	N/A	N/A	N/A
1/4/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		\$ (20)	\$ -	\$ (20)	\$ 30
1/5/2013	10	10	0	0	0	\$ (100)	\$ -	\$ (100)		\$ (70)	\$ -	\$ (70)	\$ 30
1/6/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		\$ (20)	\$ -	\$ (20)	\$ 30
1/7/2013	10	10	-6	0	0	\$ (100)	\$ 60	\$ (40)		\$ (70)	\$ 30	\$ (40)	\$-
1/8/2013	10	0	-6	0	0	\$ -	\$ -	\$ -		\$ -		\$ -	\$-
1/9/2013	10	0	-6	0	0	\$ -	\$ -	\$ -		\$ -		\$ -	\$-
1/10/2013	10	2	0	0	0	\$ (20)	\$ -	\$ (20)		\$ -	\$ -	\$ -	\$ 20
1/11/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		\$ (20)	\$ -	\$ (20)	\$ 30
1/12/2013	10	10	0	0	0	\$ (100)	\$ -	\$ (100)		\$ (70)	\$ -	\$ (70)	\$ 30
1/13/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		\$ (20)	\$ -	\$ (20)	\$ 30
1/14/2013	10	5	0	0	0	\$ (50)	\$ -	\$ (50)		\$ (20)	\$ -	\$ (20)	\$ 30
1/15/2013	10	10	0	10	7	\$ (100)	\$ 30	\$ (70)	-3	\$ (70)	\$ -	\$ (70)	\$-

Reference Links

- California ISO Tariff Section 8 – Ancillary Services
 - [Click Here for Tariff Sections](#)
- Operating Procedure 5370- Resource Performance Verification
 - [Click Here for Operating Procedure 5370](#)
- Operating Procedure 5330- AS testing procedure
 - [Click here for Operating Procedure 5330](#)
- Operating Procedure 5330A- Resource Test Request Form
 - [Click Here for AS Test Request Form](#)