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Appendix **23**

Purpose

This operating procedure describes roles, responsibilities, and actions for conducting performance audits and unannounced compliance testing as defined in Sections 8.9, 8.10, and 34.18.1 of the California ISO (CAISO) Tariff:

Section 8.9:

"Availability of contracted and Self-Provided Ancillary Services shall be verified by the ISO by unannounced testing of resources, by auditing of response to ISO Dispatch Instructions, and by analysis of appropriate Meter Data, or Interchange Schedules."

***Notes**:*
If a resource that offers Spin, Non-Spin, or Regulation fails a performance audit or an unannounced compliance test:

- *The ISO will issue a warning notice to the Scheduling Coordinator for the resource and the resource owner (see Tariff Section 8.9.16.1).*
- *On receipt of a warning notice, the resource owner, through its Scheduling Coordinator, may request the ISO to test the capability of the resource (see Tariff Section 8.9.16.2).*
- *A warning shall remain in effect until the resource 1) passes a capacity test requested by the respective Scheduling Coordinator, 2) passes an unannounced compliance test administered by the ISO, or 3) six months have elapsed since the notification was issued. Note that a subsequent, fully compliant response to an ISO dispatch instruction will not be considered a successful capacity or compliance test, and any warning(s) will remain in effect until resolved as described above (see Tariff Section 8.9.16.3).*
- *A resource that fails a second performance audit or unannounced compliance test during the period in which a warning is in effect will be disqualified immediately from providing Ancillary Services until the resource successfully completes the approval and certification process (see Tariff Section 8.9.16.4).*
- *The ISO may suspend the technical eligibility certificate of a Scheduling Coordinator for a resource that repeatedly fails to perform (see Tariff Section 8.9).*

A resource that fails an availability (unannounced compliance) test will be considered unavailable to provide the Ancillary Service concerned for the entire period the resource was committed to provide the service. The Scheduling Coordinator for a resource that fails an availability test shall not be entitled to a payment for the Ancillary Service concerned for the committed period and adjustments to reflect this shall be made in the calculation of payments to the Scheduling Coordinator (see Tariff Section 8.10.7).

Section 34.22

"The CAISO may issue one (1) unannounced Exceptional Dispatch Instruction per year to each Reliability Demand Response Resource pursuant to Section 34.11.2 in order to test the availability and performance of the Reliability Demand Response Resource."

Notes:

- *The Demand Response Provider (DRP) representing the Reliability Demand Response Resource may also test its Reliability Demand Response Resources in coordination with the ISO.*
- *Any Demand Response Provider initiated testing will not trigger any ISO settlement.*
- *When testing is initiated by the Demand Response Provider, the DRP shall submit their self-test results to the ISO as well as the LRA.*
- *When testing is initiated by the ISO, the ISO will share the results of those tests of the Reliability Demand Response Resource with the applicable Local Regulatory Authority.*
- *All tests of the Reliability Demand Response Resource shall count toward its RDRR Availability Limit.*
- *If, prior to the performance of an ISO unannounced yearly test, the Reliability Demand Response Resource provides Demand Response Services in that year, its provision of Demand Response Services will eliminate the need for that year's test.*

Further details are provided in the Market Operations Business Practice Manual (BPM) Section 4.6 and the Compliance Monitoring BPM.

1. Responsibilities

CAISO Resource Test Administrator	• Conduct performance audits of resources' response during contingency dispatches for ancillary services. • Monitor unannounced performance and compliance testing. • Evaluate performance and compliance test results and send results to the respective Scheduling Coordinator (SC) and resource owner. • As needed, send warning and de-certification notices to the respective SC and resource owner. • Initiate decertification process for non-compliant resources.
CAISO Generation Dispatcher	Conduct compliance testing for a Generator, Dynamic, Load, or performance testing of a Reliability Demand Response Resource.

CAISO General Counsel	Advise regulatory agencies of any Resource Adequacy (RA) Resources that fail performance audits or unannounced compliance testing.
CAISO Transmission Dispatcher	Conduct compliance testing for a non-dynamic Intertie Resource.
CAISO Manager, Balancing Authority (BA) Operations	Select and schedule resources for unannounced compliance and performance testing.
Resource Operator	Operate resources as instructed by the CAISO.

2. Scope/Applicability

2.1. Background

The CAISO Tariff and Business Practice Manuals give the California ISO (CAISO) the authority to audit and test resources that Bid or Self-Provide Ancillary Services (AS) or Reliability Demand Response Resources that provide Demand Response Services.

The CAISO must assure that resources providing services to the CAISO meet the CAISO's technical requirements and that Market Participants are fairly compensated for services provided. This is done through the following processes:

- Real Time Contingency Dispatch (RTCD) Performance Audit (Compliance Monitoring BPM Section 4.2.1 and 4.2.2)
- Monthly Regulation Performance Audit (Compliance Monitoring BPM Section 4.2.3)
- Unannounced Ancillary Services (AS) Compliance Test (Compliance Monitoring BPM Section 4.3.1, 4.3.2, 4.3.3)

Note: *Regulation Performance monitoring - Pay for Performance Regulation (PFPR) is another method of validating accuracy in performance of regulation and is covered in detail outside of this procedure in Market Operations BPM Section 4.6.1.*

Tariff Section 8.10 requires that "CAISO shall periodically conduct unannounced tests of resources providing Ancillary Services…The frequency of testing shall be within such time frames as are reasonable under all circumstances"

There are times when these tests may not be able to complete due to lack of awards, overlapping services provided, or due to other reliability reasons. In these cases, CAISO may initiate a data request to verify the means in which the resource is meeting requirements

defined in section Tariff Section 8.9 "All Ancillary Service Providers shall check, monitor and/or test their system and related equipment routinely to assure availability of the committed Ancillary Services."

2.2 Scope/ Applicability

This procedure applies to Reliability Demand Response Resources and all resources that Bid or Self-Provide Ancillary Services (AS). For the purposes of this procedure, the term "Test Resource" will refer to any Generating Unit, Participating Load, or System Resource that is subject to performance audits or unannounced compliance testing.

3. Procedure Detail

3.1 Ancillary Service Resources

3.1.1 Testing Criteria

Generating Unit

The performance audit for generation resources verifies a resource's ability to deliver its Ancillary Service Capacity in 10 minutes. For Generating Units providing Spinning or Non-Spinning Reserve, the CAISO will use the resource's telemetry data to measure performance. Ten minutes after the start of the contingency dispatch, the resource must respond and deliver, at least 90% of the amount of Energy requested in the dispatch.

For Generating Units providing Regulation Up and Regulation Down, the resource must reach a point of at least 90% or 10% of the highest or lowest respective set point sent to the resource during the period of the audit.

Participating Load

For Participating Loads, telemetry data will be used to audit the performance metric. Participating Loads must show a Load reduction of at least 90% of the amount requested in the contingency dispatch within 10 minutes.

System Resource

A system Resource, upon receipt of a contingency dispatch, is audited on its ability to deliver at least 90% of the amount requested within 10 minutes.

For system resources providing Regulation Up and Regulation Down, the resource must reach a point of at least 90% or 10% of the highest or lowest respective set point sent to the resource during the audited period.

3.1.1.1 Conduct RTCD Performance Audits

Complete the following actions to conduct a performance audit:

CAISO Resource Test Administrator
1. **Review** the performance results of resources dispatched for Ancillary Services during the past week. 2. **Evaluate** the performance results **according to** the performance metrics below for the respective resource type and 3. **Determine** whether each resource achieved the stated performance metric in 3.1.1 above. 4. **Document** the performance audit results, **including** the following information: • Trade date, operating hour, and time of Dispatch Instruction • MW or MWh Amount of Dispatch Instruction • Resource output based on telemetry, meter data, or Balancing Authority check-out values • Performance metric calculation • Audit pass or fail 5. **Email** the performance audit results to the SC and resource owner. • For Regulation Performance Audits, **only email** results of audit passes to entities that are in a Warning Notice period. 6. If the resource failed the performance audit, • **Send** a warning notice (**See** Section 3.1.2.2). 7. If an RA resource failed the performance audit test, • **Notify** CAISO General Counsel. 8. If the resource failed the performance audit during a period when a warning notice is in effect, • **Immediately decertify** the resource (**See** Section 3.1.2.3).

3.1.1.1.1 Conduct Monthly Regulation Performance Audits

CAISO will identify regulation resources to audit monthly. For CAISO to conduct the audit, a resource must have at least five (5) qualifying intervals in the month for the audited service (regulation up/regulation down). All resources providing regulation will be checked for qualifying intervals.

Audit Identification criteria:

- Resource set point must ramp from 50% of the regulation capacity range to within:
  - 90% (Reg Up) of the regulation capacity range as defined in the Master File parameters for Regulation Up.
  - 10% (Reg Down) of the regulation capacity range as defined in the Master File parameters for Regulation Down.
  - For a Multi-Stage Generating Resource the regulation capacity range is the range for the applicable MSG Configuration.
- The resource must be on Automatic Generation Control (AGC) continuously during the test period.
- Total assessed set point ramp time used for evaluation will not exceed 15 minutes.
- The MW output must be within 2% of the regulation range of the Scheduling Point (SP) at the start time.
- End Time of the test is 1-minute (MW lag time) after the end of the set point ramp or when the MW output reaches the End MW Threshold, whichever occurs first.
- The set point must maintain or exceed the End Set Point threshold for the duration of the MW lag time.

Audit Pass criteria:

- MW output reaches at least 90% of the Regulation Range for Regulation Up within 16 minutes after the start of the set point ramp.
- MW output reaches at least 10% of the Regulation Range for Regulation Down within 16 minutes after the start of the set point ramp.

Audit Fail criteria:

- A resource fails the performance audit interval if it cannot reach the 90% or 10% MW output threshold during the qualifying test period.
- A resource must pass at least 90% of the qualifying tests in a month for the service to be considered as having passed the performance audit.

3.1.1.2 Plan and Execute Unannounced Ancillary Services Compliance Testing

The CAISO periodically verifies the availability and performance of Awarded and Self-Provided Ancillary Services through unannounced compliance testing of resources. An unannounced testing list is managed by the CAISO Test Administrator. Generally, resources on this list consist of units that provide SPIN or NSPIN.

Under normal conditions the following conditions will result in a resource being placed on the list for the applicable product.

- Certification for the first time or completion of a recertification test
- Failure of a performance audit or performance verification
- Lack of valid passing performance audit or performance verification within two (2) years

To be removed from the list the resource must have a recent record of passing an assessment for the applicable product.

3.1.1.2.1 Select and Schedule Resources for Unannounced Ancillary Services Testing

Complete the following actions to select a test resource for unannounced compliance testing (Performance Verification):

CAISO Manager, BA Operations

1. At any time when system conditions permit you may **refer** to any of the following:
   - **Refer** to the Unannounced Testing report sent from ASNotifications.
     - Resources in this report **shall be given** priority to test.
     - **Select** one or more resources from this list.
   - **Refer** to the Unannounced Test List sent from ASNotifications.
   - **Ensure** the following requirements are met:

     SPIN
     - The resource must be on the list.
     - The resource must be online with available capacity to conduct the spin test.
     - Dispatched amount must be above 1 MW, within the normal capacity of the resource.

     NON-SPIN
     - The unit must be on the list.
     - For resources that are not on the testing report but are on the Testing List, **check** with Scheduling coordinator to see if resource is available for testing. (Start time may not necessarily be on the hour.)
       1. Constraints that may be encountered include limited starts, fuel availability, or staffing.
       2. Dispatched amount must be above 1 MW, within the normal capacity of the resource.

     ***Note**: Give priority to those resources with the longest interval between the current date and the* date *logged, as shown in the*

CAISO Manager, BA Operations

weekly Performance Verification List sent from ASNotifications. Additionally, Units on warning notice should be given priority to test above those that are not on warning notice.

- **Confirm** telemetry with the resource for the applicable resource type.
- **Schedule** unannounced compliance testing.

2. **Do** one of the following:
   - For non-dynamic intertie resources,
     - **Notify** the CAISO Transmission Dispatcher of the planned date and time for unannounced compliance testing.
   - For all other resource types,
     - **Notify** the CAISO Generation Dispatcher of the planned date and time for unannounced compliance testing.

3.1.1.2.2 Conduct Unannounced Ancillary Services Compliance Tests

Complete the following actions to conduct an unannounced compliance test for Non-Spin, Spin, or Regulation:

CAISO Generation Dispatcher, CAISO Transmission Dispatcher

1. **Verify** that the test resource meets system conditions.
2. **Verify** that the test resource is not affected by any outages/flow limits that prevent any resource from delivering AS services.
3. **Verify** that the test resource has a Real-Time Ancillary Service Schedule.
4. **Verify** that the telemetry of the test resource is complying with current Dispatch Instructions.
5. **Verify** that the unit is not on AGC if testing SPIN.

   Note: *Resources are not to be removed from regulation control to run an unannounced test.*

6. **Verify** the following if testing NON-SPIN**.**
   - Unit is shut down, Resource Terminal Voltage = 0
   - Main breaker status is OPEN
   - Batteries/hybrids and some Hydro facilities may not fit the above criteria.
     - **Refer** to Spin criteria.
7. If the conditions specified in Steps 1- 6 are satisfied:
   - **Approve** the test resource for dispatch if system condition allows, or
   - **Cancel** the planned unannounced testing, and
   - **Notify** the CAISO Manager of Balancing Authority (BA) Operations.

CAISO Generation Dispatcher

1. If the test resource approved for Dispatch **is a Generator, Dynamic or Load and is available for a test of Spin or Non-Spinning reserve capability**:

   - **Issue** an electronic AS Test Dispatch through the Real-Time Nodal (Market) (RTN) software **using** the Contingency AS Testing tool to a MW value equal to their bid-in 10-minute ramping capability or the amount of the current AS award.
     - The new UI to issue AS testing instruction via market tool is available at:

     Operations>Generation>Reserve management>Contingency AS testing

   CAISO Generation Dispatcher must complete the following operations:

   - **Select** the appropriate Resource ID from the drop-down menu,
   - **Enter** the Test MW bias, and
   - **Click** 'execute' button.
     - Test MW Bias is the value of awarded reserves (Spin or NSpin) for the test.

     Test Resources will receive the following through ADS:

     - An AS Test instruction that specifies start and end times.
     - A Dispatch Operating Target (DOT) with MW value and ramp time.
     - Resources must follow subsequent DOT "Instr MW" dispatches to meet testing requirements. The test starts at the interval's DOT ramp "Start Time," as the resource ramps toward its awarded AS test amount. SCs must know their resource's AS award and be ready to ramp the unit to fulfill all AS obligations.
     - For Non-Spin resources, the Market will automatically generate a startup instruction to bring resources to PMin. Upon receiving this startup instruction, the SC should immediately begin the resource startup process to reach PMin, ensuring the resource meets its 10-minute AS obligation.

   - From a timing perspective, please do not **enter** an AS TEST instruction in the market when Real-Time Dispatch (RTD) is in the process of running.
   - Please **enter** during the window RTD has finished and prior to the next RTD run has kicked off.

   Note: *Ensure resources are appropriately accounted for in the Energy Management System (EMS) Reserve Monitor. A manual entry of negative offset may be necessary. The resource will be dispatched for Energy from the SPIN or NON-SPIN Capacity according to the Ramp Rate and Start-Up time specified in the Energy Bid submitted for that hour.*

CAISO Generation Dispatcher

If test cannot be performed using primary method then the following alternate dispatch method may be used:

2. Alternate Method: If test resource approved for Dispatch, **is a Generator or Dynamic or Load and is for a test of Spin or Non-Spin reserve capability**:
   - **Call** the SC for the resource and **inform** them that the CAISO is initiating an Unannounced AS Compliance Test.
   - **Periodically ensure** programmed phone numbers are correct.
     - If using the SC contact list, you must **use** the contacts marked as 24-hour contacts.
   - **Issue** a verbal AS Test Dispatch to a MW value equal to their bid-in 10-minute ramping capability or the amount of the current AS award.

     "This is *(state your name)* from the California ISO. This is an Unannounced AS Compliance Test and I am initiating a verbal AS Test Dispatch on *(Resource ID)* for the *(SPIN/NSPN)* award in the amount of *(MW)*. The test will begin at the conclusion of this phone call. We will contact you by phone to end the test. Please repeat back these instructions".
   - **Record** the Verbal Dispatch Instruction in the market ED tool,
     - **Using** Instruction Type: ASTEST.
       - *Please **note** that the ED instruction for AS TEST will NOT be visible in ADS once the new enhancement is activated.*
   - If the Market Software is unavailable,
     - **Log** the Dispatch Instruction as:
       - A Log Type: Generation Dispatcher
       - Title: EDE Instructions for Generators/Correction-96-Hour and Exceptional Dispatch
       - **Using** Instruction Type: ASTEST

     ***Note:** Ensure resources are appropriately accounted for in the EMS Reserve Monitor. A manual entry of negative offset may be necessary. The resource will be dispatched for Energy from the Spin or Non-Spin Capacity according to the Ramp Rate and Start-Up time specified in the Energy Bid submitted for that hour.*
3. If the test resource approved for Dispatch, **is a Generator, and is a test for AGC (Regulation) reserve capacity**: (The Generator must have been awarded sufficient regulation (by amount and duration) to be tested.
   - **Make** a note of the *CAISO Reg High* and *CAISO Reg Low* parameters indicated on the AS Test display.

CAISO Generation Dispatcher

- **Determine** whether the Unit has sufficient room to move up or down by **comparing** the current MW value against the limits):
  - On an EMS Workstation,
    - **Call up** the AGC Generation Summary.
- **Search** for the Generating Unit to be tested in the upper-left part of the Generation Summary display.
- You can quickly **find** the Unit by:
  - **Using** the in-line filter on the Generation Summary display.
  - **Verify** the current AGC status of the Unit as follows:
    - Unit Ctrl Mode Column = AUTO
    - Operating Mode Column = AUTO
- **Click** on the pencil to edit.
- Under the User Ctrl Mode column,
  - **Select** "MBP" from the pull-down list.
  - **Enter** desired value in the MBP column, to reflect the target MW value to ramp the Unit either up or down.
    - The MBP target value must be within the boundaries of the Reg Hi and Reg Low limits.
  - After **updating** User Ctrl Mode and MBP Columns,
    - **Click** the Update button.
  - **Make** a note of the start time of the ramp.
- When the Unit finishes ramping,
  - **Enter** the target MW value in the MBP column to ramp the Unit in the other direction.
    - **Make** a note of the start time of the ramp.
- When the ramping test is completed,
  - **Place** the User Ctrl Mode back to the original setting (i.e., AUTO).
  - **Set** the manually replaced value in the MBP column back to "0".

CAISO Transmission Dispatcher

1. If the test resource approved for Dispatch**, is a Static Intertie Resource, and is for test of Spin or Non-Spin reserve capability**:

   - **Coordinate** with the CAISO Generation Dispatcher to **determine** acceptable time to initiate AS Compliance Test.
   - **Determine** current NIs. This value will change when new test scheduled is implemented.
   - If the resource exists in the Contingency AS testing UI,
     - **Use** the UI to **issue** AS testing instruction.
     - Otherwise, **call** the SC for the resource, and

CAISO Transmission Dispatcher

- **Inform** them that the CAISO is initiating an Unannounced AS Compliance Test.

  *"This is **(state your name)** from the California ISO. This is an Unannounced AS Compliance Test and I am initiating a verbal AS Test Dispatch on **(Resource ID)** for the **(SPIN/NSPN)** award in the amount of **(MW)** on the **(Tie Point Name)** and for Hour Ending **(HE).** The test will begin at the conclusion of this phone call. We will contact you by phone if necessary to end the test. Please repeat back these instructions."*

- **Issue** a verbal AS Test Dispatch to a MW value equal to their current AS Award indicated on the E-Tag.
- **Remind** the Scheduling Coordinator that the CAISO is expecting the capacity E-Tag to be updated with the corresponding energy MW amount required by the test as soon as possible, but no later than ten minutes after the conclusion of the call.
- **Confirm** implementation of E-Tag and **verify** Interchange transaction scheduler and WIT match and
- **Verify** new NIs to EMS and only **push** to EMS when necessary or after abnormal delay.
- **Record** the verbal Dispatch Instruction in the Market ED tool **using** Instruction Type: ASTEST.
  - *Please **note** that the ED for AS TEST will NOT be visible in ADS.*
- If the Market Software is unavailable,
  - **Log** the Dispatch Instruction as:
    - A Log Type: Generation Dispatcher,
    - Title: EDE Instructions for Generators/Correction-96-Hour and Exceptional Dispatch, and
    - **Using** Instruction Type: ASTEST.

***Note**: The resource will be dispatched for Energy from the SPIN or NON-SPIN Capacity according to the Ramp Rate and Start-Up time specified in the E-Tag.*

Resource Operator

1. Upon receiving an automated AS TEST instruction via ADS the resource has been placed on notice for an unannounced test. The resource operator shall **Ramp up** the resource under test to the MW amount of the subsequent DOT change within 10-minutes of the Start time of the DOT instruction.
   - For reference, the AS TEST instruction in ADS has a start time and end time.

Resource Operator

- Once the SC receives the AS Test instruction, **be prepared to ramp** resources according to the DOT instructions. Resources must not begin ramping until the specified "DOT Start Time," which may occur several minutes after receiving the AS Test notice.

2. Upon receiving a verbal AS Test Dispatch from a CAISO Generation Dispatcher or Transmission Dispatcher,
   - **Perform** the actions below for the respective resource type (Generating Unit, Participating Load, or System Resource):

***Note**: As per Tariff Section 11.5.6.4, the resource owner will be compensated at the maximum of the applicable Fifteen Minute Market (FMM) or RTD Locational Marginal Price (LMP), or the Default Energy Bid Price, whichever is higher. However, the test resource will not set the LMP for any of the time intervals for which the unannounced AS compliance test is in effect.*

Generating Units (including Dynamic System Resources)

Generating Unit Dispatched from Spinning Reserve:

1. **Ramp up** to the MW amount of the Dispatch Instruction, **in accordance with** the resource's Bid for Energy within 10 minutes.
2. **Deliver** Energy, in MWh, **in accordance with** the start-up time and Ramp Rate in the resource's Bid for Energy.

Generating Unit Dispatched from Non-Spinning Reserve:

1. **Connect** to the grid, and
2. **Ramp** up to the MW amount of the Dispatch Instruction, **in accordance with** the resource's Bid for Energy within 10-minutes.
3. **Deliver** Energy, in MWh, **in accordance with** the start-up time and Ramp Rate in the resource's Bid for Energy.

Participating Load Dispatched from Non-Spinning Reserve:

1. **Reduce** Demand to the MW amount of the Dispatch Instruction, **in accordance with** the resource's Bid for Energy within 10-minutes.
2. **Deliver** reduction in Energy, in MWh, **in accordance with** the Ramp Rate in the resource's Bid for Energy.

System Resource Dispatched from Spinning or Non-Spinning Reserve:

1. **Affirmatively respond** to the MW amount of the Dispatch Instructions.
2. **Update** the capacity E-Tag (if any) to **include** energy profile MW amount, as soon as possible, but no later than 10-minutes after the end of the call with the CAISO System Operator.

Resource Operator
3. **Deliver** Energy, in MWh, **in accordance with** the Ramp Rate in the resource's Bid for Energy.

CAISO Generation Dispatcher, CAISO Transmission Dispatcher
1. **Determine** acceptable time to terminate AS Compliance Test. (Transmission Dispatcher to **coordinate** with Generation Dispatcher) • If the Primary Method (Contingency AS Test from RTN Software) was used, the unannounced compliance testing ends at the expiration of the ADS AS Test instruction. ○ A courtesy phone **call should be made** to the Test Resource at the conclusion of the test. • If the Alternate Method (Verbal) was used, the unannounced compliance test ends with a Verbal Instruction to the Test Resource or continues until the end of the trade hour if Test Resource is on a tie. ***Note**: Tariff Appendix K requires AS resources to be deliverable for a minimum of 30 minutes from the time the resource reaches its award capacity.* 2. **Send** an email to the CAISO Manager of BA Operations, the CAISO Resource Test Administrator (ASNotifications@caiso.com) and isopostprocessgroup@caiso.com, • **Stating** that compliance testing for each test resource has been completed. • **Be sure to include** detailed notes regarding Start Time hh:mm:ss, End Time hh:mm:ss, Ancillary Service Type, Award MW and Go to MW (Target MW).

3.1.2 Results Evaluation

3.1.2.1 Evaluate Test Results

The CAISO Resource Test Administrator evaluates and documents the results of the compliance testing and sends the tests results to the SC and test resource owner.

CAISO Resource Test Administrator
1. **Evaluate** the test results **according to** the performance metrics, outlined in Section 3.1.1 for the respective resource type and service, and 2. **Determine** whether the resource passed or failed the compliance test.

CAISO Resource Test Administrator

3. **Document** the test results, **including** the following information:
    - Trade date, operating hour, and time of unannounced AS test Dispatch Instruction.
    - MW or MWh Amount of Dispatch Instruction.
    - Resource output based on telemetry, meter data, or Balancing Authority check-out values.
    - Performance metric calculation.
    - Compliance testing passed or failed
4. If a resource provides SPIN and NON-SPIN services and the evaluated test is a passing NON-SPIN test.
    - The results will constitute a passing performance verification for Spin.
    - Resource owners and Scheduling coordinators **will be notified** of this additional assessment.
5. If a battery or other (hybrid, hydro) type of resource that would normally not disconnect **provides** SPIN and NON-SPIN services and the evaluated SPIN or NON-SPIN test has passing results.
    - A successful SPIN test will constitute a passing performance verification for NON-SPIN.
    - A successful NON-SPIN test will constitute a passing performance verification for SPIN.
    - Resource owners and Scheduling coordinators **will be notified** of this additional assessment.
6. **Email** the compliance test results to the SC and resource owner.
7. **Update** the Resource Performance Verification Database.
8. If the resource failed the compliance test,
    - **Send** a warning notice (**see** Section 3.1.2.2).
9. If an RA resource failed the compliance test,
    - **Notify** CAISO General Counsel.
10. If the resource failed the compliance test during a period when a warning notice is in effect,
    - **Immediately decertify** the resource (**see** Section 3.1.2.3).

3.1.2.2 Send Warning Notice

Take the following actions if a SPIN, NON-SPIN or Regulation capacity resource fails a performance audit or an unannounced compliance test.

CAISO Resource Test Administrator
Warning Notice: 1. Upon failing a performance audit or unannounced compliance test, • **Send** a warning notice to the resource owner/operator, the Scheduling Coordinator for the resource, and the Scheduling Coordinator's CAISO Client Representative, **along with** the performance audit or compliance test results. ***Note**: The warning notice will remain in effect until 1) the resource is re-tested for the Ancillary Service by request from the SC or by the CAISO as part of unannounced compliance testing or 2) six calendar months have elapsed since the notification was issued.* • In the Resource Performance Verification Database, **enter** the date on which the resource was issued a warning notice (this is the date on which a warning is in effect for the resource). ***Note:** For resources failing a monthly performance audit of either Regulation Up or Regulation Down services, the start of the six-month warning period will be the first full month that starts at least 30 days after receipt of the Warning Notice.*

3.1.2.3 Decertify a Resource

If a SPIN, NON-SPIN or Regulation capacity resource fails a performance audit or unannounced compliance test during the period when a warning notice for that resource is in effect, the CAISO will immediately begin the decertification process.

CAISO Resource Test Administrator
1. **Send** email to CAISO Management, **stating** that the resource is subject to immediate decertification (**Attach** relevant resource information from the Resource Performance Verification Database). 2. Upon receiving approval from CAISO Management, • **Decertify** the resource (**Complete** the remaining actions below).

CAISO Resource Test Administrator
• **Send** a letter to the Scheduling Coordinator for the resource, the resource owner/operator, and the Scheduling Coordinator's CAISO Client Representative,   ○ **Stating** that the CAISO has initiated the decertification process for the resource for the affected service, **along with** the performance audit or compliance test results. 3. In the Resource Performance Verification Database, • **Enter** the date on which the resource was issued the letter. 4. **Open** a Change Request, • **Requesting** that the AS Service Flag for the resource in Master File be set to "No." 5. Once Master File has been updated (AS Service Flag = No), • **Update** the Resource Performance Verification Database **with** the date on which the resource was decertified.

3.2 Reliability Demand Response Resource (RDRR)

3.2.1 Plan and Execute Unannounced Testing

The CAISO periodically verifies the availability and performance of Reliability Demand Response Resources through unannounced testing of resources.

3.2.2 Select and Schedule Resources for Testing

Complete the following actions to select a test resource for unannounced availability and performance testing:

CAISO Generation Dispatcher
1. At any time when system conditions permit: • **Refer** to the Unannounced Testing reports sent from AS Notifications. • **Select** one or more resources. • **Schedule** unannounced availability and performance testing.

3.2.3 Conduct availability and performance Tests

Complete the following actions to conduct an unannounced availability and performance test:

CAISO Generation Dispatcher

1. **Verify** the test resource meets system conditions.
2. **Verify** the test resource is not affected by any outages/flow limits that prevent the resource from delivering Demand Response services.
3. If the conditions specified in Steps 1 and 2 are satisfied:
   - **Approve** the test resource for dispatch if system condition allows, or
   - **Cancel** the planned unannounced testing and **notify** the CAISO Manager of BA Operations.
4. If the test resource is approved for Dispatch,
   - **Enter** the RDRR Test Dispatch to their stated demand response MW value, **using** the ED Tool with Instruction Type 'Test.'
   - **Follow up with** a phone call to the SC for the resource and
     - **Inform** them that the CAISO is initiating an Unannounced RDRR availability and performance Test.
     - **Inform** them that the availability and performance test will be for at least the resource minimum run time,
       - Or less if system conditions dictate.
       - If the SC requests a self-test beyond the minimum run time, **instruct** the SC to put the resource on an outage for the duration of the self-test.

Example Communication with SC

*"This is **(state your name)** from the California ISO. I am informing you that I have initiated an Unannounced RDRR availability and performance Test and have issued an ED for RDRR Test Dispatch on **(Resource ID)** for the stated demand response value in the amount of **(MW) for Hour Ending (HE).** The planned duration of the test will be for at least the resource's minimum run time. We will contact you by phone if necessary to end the test sooner due to system conditions. If you wish to perform a self-test beyond the minimum run time, please place the resource on outage for that self-test. Please repeat back these instructions."*

Scheduling Coordinator

1. Upon receiving an ADS instruction, **perform** the actions below:
   - **Reduce** Demand to the MW amount of the Dispatch Instruction within the notification time for that resource.
   - **Sustain** for at least the minimum run time, unless notified verbally by the CAISO Generation Dispatcher to end the test sooner.
     - If running a self-test beyond the minimum run time, **submit** an outage card for the duration of the self-test.

CAISO Generation Dispatcher

1. **Determine** acceptable time to terminate RDRR Performance Test after either the resource minimum run time has elapsed, or less, as system conditions dictate.
   - If system conditions require ending the RDRR Performance Test prior to elapse of resource minimum run time,
     - **Notify** the Test Resource verbally, and
     - **End** the ED instruction in the ED Tool.
2. **Send** an email to the CAISO Manager of BA Operations and the CAISO Resource Test Administrator (ASNotifications@caiso.com),
   - **Stating** that testing for each test resource has been completed.
   - Be sure to **include** detailed notes regarding Resource_ID, Start Time hh:mm:ss, End Time hh:mm:ss, MW value and Go to MW (Target MW).

3.2.4 Evaluate and Send Test Results

The CAISO Resource Test Administrator evaluates and documents the results of the availability and performance testing upon availability of the information and sends the tests results to the SC and test resource owner.

CAISO Resource Test Administrator

1. **Determine** the test results.
2. **Document** the test results, **including** the following information:
   - Trade date, operating hour, and time of unannounced test.
   - Dispatch Instruction.
   - MW or MWh Amount of Dispatch Instruction.
   - Resource output based on meter data.
3. **Email** the test results to the SC and Local Regulatory Authority (LRA).
4. **Update** the Resource Performance Verification Database.

Note: *If the DRP conducts their own test, the DRP shall submit their self-test results to the CAISO at ASNotifications@caiso.com, as well as their LRA.*

4. Supporting Information

Operationally Affected Parties

CAISO Public

References

Resources studied in the development of this procedure and that may influence some steps taken herein include but are not limited to:

CAISO Tariff	Sections 8.9, 8.10, and Appendix K
CAISO Operating Procedure	
NERC Requirements	
WECC Criterion	
Other References	

Definitions

Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have that meaning when capitalized in this Operating Procedure.

The following additional terms are capitalized in this Operating Procedure when used as defined below:

LMP	Locational Marginal Price
RA Resource	Resource Adequacy Resource
SC	Scheduling Coordinator
System Resource	An individual or group of resources located outside the CAISO Balancing Area capable of providing Energy and/or AS Capacity to the CAISO controlled grid

Test Resource	Any Generating Unit, Dispatchable Load, or System Resource that is subject to Unannounced compliance or availability and performance testing
Unannounced Compliance Test	A test that is not announced prior to the dispatch of a Generating Unit, Participating Load, or System Resource for its ability to deliver the correct amount of Ancillary Service Capacity
Unannounced Availability and Performance Test	A test that is not announced prior to the dispatch of a Load or aggregation of Loads for its ability to deliver the correct amount of Demand Response Services
Reliability Demand Response Resource (RDRR)	A Load or aggregation of Loads that has the characteristics of a Reliability Demand Response Resource set forth in Section 4.13.5, satisfies all other requirements applicable to a Reliability Demand Response Resource set forth in the CAISO Tariff, and is capable of measurably and verifiably providing Demand Response Services pursuant to the Demand Response Provider Agreement, including but not limited to Sections 4.1 and 4.3 of the Demand Response Provider Agreement and excluding Section 4.2 of the Demand Response Provider Agreement.

Version History

Version	Change	Date
7.2	Section 3.1.1.2.2: updated verify process for when units are on AGC.	10/02/20
7.3	Section 3.1.1.2.1: Added instructions on selecting resources to test. Section 3.1.1.2.2: Updates made for AS Testing enhancement. Added clarification for conducting non-spin tests and added details regarding contact types used. Section 3.1.2.1: Made changes to evaluation of results based on specific criteria. Minor grammar and format edits.	9/14/21
7.4	Periodic Review: Updated from Shift Manager to Manager, Real-Time Operations or Manager of Real-Time Operations, and updated from Generation and Transmission “Desk” to “Dispatcher.” Removed history prior to five years.	9/11/23
7.5	Section 3.1.1.2.2: Made correction under CAISO Generation Dispatcher task for sub-bullet under fourth bullet, stating that the Test MW Bias is the "value of awarded reserves (Spin or NSpin)" for the test. Defined acronyms, minor formatting, and grammar edits, and removed history prior to five years.	10/22/24

Version	Change	Date
7.6	Section 3.1.1.2.2: Added clarification on start and end time of the test for the Generation Dispatcher and Resource Operator. Minor formatting and removed history prior to five years.	3/27/25
7.7	Summarized testing efforts in background to give better transparency to amount of testing ongoing. Added statement about data requests with reasons that a resource may be unable to be tested. Added details about the Monthly Regulation Audit in Section 3.1.1.1.1. Added more clarity on how resources are selected for an unannounced AS Test in Section 3.1.1.2. Updated from NSI (Net Scheduled Interchange) to (NIS) Scheduled Net Interchange to align with BAL-004-WECC-4 update on 10/01/25 Section 3.1.1.2.2. Updated from Manager of Real-Time Operations and Manager, Real-Time Operations to Manager of Balancing Authority (BA) Operations and Manager, BA Operations. Minor formatting and grammar edits and removed history prior to five years.	10/06/25
7.8	Periodic Review: Defined first instance of various terms, minor formatting, and grammar edits.	8/20/26

5. Periodic Review Procedure

Review Criteria & Incorporation of Changes

There are no specific criteria for reviewing or changing this document, follow instructions in CAISO Operating Procedure 5510.

Frequency

At least once every three years.

Appendix

No references currently.