Table of Contents

Purpose ............................................................................................................................................ 1
1. Responsibilities .............................................................................................................................. 2
2. Scope/Applicability ........................................................................................................................ 2
   2.1 Background ............................................................................................................................ 2
   2.2 Scope/Applicability .................................................................................................................. 3
3. Procedure Detail ............................................................................................................................ 3
   3.1 Test Scheduling and Initiation ............................................................................................... 3
   3.2 RMR Unit Testing Process ...................................................................................................... 4
   3.2.1 Scheduling Coordinator Requested Test .......................................................................... 5
4. Supporting Information .................................................................................................................. 10
   Operationally Affected Parties .................................................................................................... 10
   References .................................................................................................................................... 10
   Definitions ................................................................................................................................... 10
   Version History ............................................................................................................................ 11
5. Periodic Review Procedure ........................................................................................................... 11
   Review Criteria & Incorporation of Changes ............................................................................ 11
   Frequency .................................................................................................................................... 11
Appendix .......................................................................................................................................... 12

Purpose

Provides guidelines for the California ISO (CAISO) in the forward market timeframe with relation to the testing and certification of Reliability Must Run (RMR) and Legacy RMR Units.
1. Responsibilities

| Scheduling Coordinator/Generator Owner – Legacy RMR | • Request test for their generating resource.  
  o Scheduling Coordinator submits a request for test.  
  • Schedule test MW’s.  
  o DA: Scheduling Coordinator for the Legacy RMR Owner submits self-schedules at the request of the RMR Dispatch notice.  
  • Follow dispatch instructions in order to complete test.  
  • Submit any of the required forms. |
|---------------------------------------------------|---------------------------------|
| CAISO Ops Resource Test Administrator | • Review the test requests.  
  • Coordinate the test.  
  • Send notification of results to appropriate parties. |
| CAISO Operations Engineering | • Create requirements to dispatch Legacy RMR in Day-Ahead.  
  Note: Real-Time Dispatches are based on local reliability/voltage needs, not OE requirements. |
| CAISO Generation Desk | • Create Exceptional Dispatch in Real-Time (RT) with appropriate code and notify SC via telephone.  
  • Cancel for system conditions, etc. |

2. Scope/Applicability

2.1 Background

CAISO may have agreements in place with Reliability-Must-Run (RMR) Units to meet certain local area operating constraints, address local reliability issues, mitigate congestion on non-competitive paths, meet shortfalls in the AS market, provide Black Start and Voltage Support, or Supply needs that arise in Real-Time (RT). In 2019 RMR Enhancements were implemented and created differentiation between dispatch of Legacy RMR (those contracted prior to 2020) and RMR (non-Legacy, or those with contracts effective Jan 1, 2020 or later). Further information can be found in CAISO Tariff sections 41, Appendix G, and Appendix H.

The CAISO provides guidance for the testing and certification of these resources, as these activities ensure the reliability of their power supply on an ongoing basis.
2.2 Scope /Applicability

This procedure applies to all Reliability-Must-Run (RMR) units and Legacy RMR Units only for the purpose of completing the tests defined in the RMR Contracts.

3. Procedure Detail

3.1 Test Scheduling and Initiation

What tests may be scheduled and who can initiate them?

RMR (Non-Legacy) Units:

- CAISO and/or the RMR (Non-Legacy) Unit SC should refer to 5320 Resource Trial Operations and Test Energy Process and 5330 Resource Testing Guidelines, as well as CAISO Tariff Section 41 and Appendix G, for guidelines on Test Scheduling. In accordance with the CAISO Tariff, BPMs, and Operating Procedures,

<table>
<thead>
<tr>
<th>Test</th>
<th>Initiator</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>CAISO/SC</td>
<td>- CAISO may from time to time test the PMax of a Unit by requiring the Unit to Deliver Energy pursuant to an Exceptional Dispatch instruction provided to Owner’s Scheduling Coordinator using the procedures described for PMax testing. CAISO, without cause, may request one Availability Test each Contract Year. CAISO may request additional Availability Tests if the Unit fails to comply fully with an Exceptional Dispatch instruction for the Availability Test.</td>
</tr>
<tr>
<td>Other</td>
<td>CAISO/SC</td>
<td>- Resource may request an Availability Test at any time and CAISO shall conduct the Availability Test in accordance with the applicable CAISO BPM rules and Operating Procedures for PMax testing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The CAISO and the Owner can request and conduct all other tests for the Unit</td>
</tr>
</tbody>
</table>

*This document is controlled when viewed electronically.*

*When downloaded or printed, this document becomes UNCONTROLLED.*
For Legacy RMR Units:

<table>
<thead>
<tr>
<th>Test</th>
<th>Initiator</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>CAISO/SC</td>
<td>- The CAISO may request one Availability Test per year without cause.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The CAISO may request additional Availability Tests if the Legacy RMR Unit fails to comply fully with an RMR Dispatch Notice.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SC for the Legacy RMR Owner may request an Availability Test at any time acceptable to the CAISO within three (3) days after receipt of Owner’s request.</td>
</tr>
<tr>
<td>Black Start</td>
<td>CAISO</td>
<td>- The CAISO may test units designated to provide Black Start service; however, the CAISO must not request this test on a hydroelectric unit during periods of constrained water availability.</td>
</tr>
<tr>
<td>Emissions</td>
<td>SC</td>
<td>- SC for the Legacy RMR Owner may request an Emissions Test if it is necessary for Owner to operate a unit to fulfill regulatory requirements for emissions testing and must provide seven (7) days advance notice.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The CAISO must schedule on date specified in request, or for good cause, the CAISO may reschedule to another date acceptable to the Owner, not more than seven (7) days delay without Owner’s consent.</td>
</tr>
<tr>
<td>Heat Input</td>
<td>SC</td>
<td>- May request no more frequently than once per year by providing at least seven (7) days prior notice, which the CAISO shall not unreasonably refuse. Heat Input test shall be conducted in accordance with testing standards and procedures agreed to by the CAISO and Owner.</td>
</tr>
</tbody>
</table>

3.2 RMR Unit Testing Process

RMR (Non-Legacy) Units: CAISO and/or the RMR (Non-Legacy) Unit testing should be completed in accordance with CAISO Operating Procedures 5320 Resource Trial Operations and Test Energy Process and 5330 Resource Testing Guidelines.

For Legacy RMR Units, proceed to Sections 3.2.1 and 3.2.2.

Note: A flowchart is located at the end of Section 3.
### Pre-Market Testing and Certification Procedures – RMR and Legacy RMR Units

**Distribution Restriction:** None

#### 3.2.1 Scheduling Coordinator Requested Test

<table>
<thead>
<tr>
<th>Scheduling Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Send</strong> completed <strong>Form 5340F</strong> (CAISO Operating Procedure 5340F RMR Availability Test Request Form) via email to: <strong><a href="mailto:ASNotifications@caiso.com">ASNotifications@caiso.com</a></strong> at least fourteen (14) calendar days prior to the planned test date.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAISO Resource Test Administrator</th>
</tr>
</thead>
</table>
| 1. Upon receipt of Form 5340F (CAISO Operating Procedure 5340F CAISO RMR Availability Test Request Form),
  - **Confirm** it is complete.
    - If not, **alert** Scheduling Coordinator to deficiencies.
    - If yes, **confirm** Test date and time with the CAISO Operations Engineer for the applicable PTO area. |

<table>
<thead>
<tr>
<th>CAISO Operations Engineer</th>
</tr>
</thead>
</table>
| 1. **Review** the requested test date and
  2. **Confirm** whether expected system conditions will allow for the requested test.
  3. If okay, **notify** Resource Test Administrator to alert the Scheduling Coordinator to proceed with scheduling the test.
  4. If **not** okay, **provide** Resource Test Administrator with an appropriate alternative date for the test. |

<table>
<thead>
<tr>
<th>CAISO Resource Test Administrator</th>
</tr>
</thead>
</table>
| 1. If CAISO Operations Engineering Services approves the requested test date,
  - **Alert** the Scheduling Coordinator to proceed with scheduling the test, **and**
  - **Log** the date and time of the scheduled test.
  2. If CAISO Operations Engineering Services denies the requested test date,
    - **Notify** the Scheduling Coordinator and
    - **Provide** the suggested alternative to the Scheduling Coordinator.
    - **Request** the Scheduling Coordinator to resubmit a Form 5340F (CAISO Operating Procedure 5340F RMR Availability Test Request Form) with the suggested alternate date or another one of their choosing.
  3. If the **subsequent** Form 5340F (CAISO Operating Procedure 5340F Legacy RMR Availability Test Request Form) **submittal** uses the suggested alternative date,
    - **Alert** the Scheduling Coordinator to proceed with scheduling the test, **and**
    - **Log** date and time of scheduled test.
  4. If the **subsequent** Form 5340F (CAISO Operating Procedure 5340F RMR Availability Test Request Form) **submittal** contains a different date,
    - **Repeat** the Section 3.2.1 process listed in above steps. |
### Scheduling Coordinator

1. Upon receiving an approved test date from the CAISO,
   - **Submit a** self-schedule in the Day-Ahead market for the date, hour and MW’s of the approved test request.
2. One-hour prior to testing,
   - **Contact** the CAISO Generation Desk and
   - **Confirm** the test can proceed as scheduled.
3. If the CAISO Generation Desk cancels the test,
   - **Repeat** the Section 3.2.1 process listed in above steps.
4. Otherwise,
   - **Operate** the unit to meet the schedule and
   - **Complete** the test.
5. Upon test completion,
   - **Submit** Form 5340G (CAISO Operating Procedure 5340G RMR Test Request Form Availability Test Ambient Temperature Supplement) to ASNotifications@caiso.com.

### CAISO Resource Test Administrator

1. Upon receipt of Form 5340G (CAISO Operating Procedure 5340G RMR Availability Test Request Form Ambient Temperature Supplement),
   - **Gather** data regarding the unit performance during the test,
   - **Analyze** the results, and
   - **Complete** Form 5340B (CAISO Operating Procedure 5340B CAISO RMR Availability Notice).
2. **Send** completed Form 5340B (CAISO Operating Procedure 5340B CAISO RMR Availability Notice) to the Scheduling Coordinator as well as other appropriate internal CAISO departments to update their information and processes related to the results of the test.
3.2.2 CAISO Initiated Test

The CAISO may initiate a test once per year “without cause” simply to test the unit or any time “with cause”. The CAISO may request additional Availability Tests if the Legacy RMR Unit fails to fully comply with an RMR Dispatch Notice.

**CAISO Resource Test Administrator**

1. Once per year,
   - **May initiate** a “without cause” Availability test of each RMR unit by reviewing the available Cold Start Hours and
   - **Confirming** sufficient hours exist for the unit to be tested.
2. **Contact** the CAISO Generation Desk and
3. **Provide** the Resource_ID of the unit to be tested at the first opportunity.

**CAISO Generation Desk**

1. Either upon prompting by the CAISO Resource Test Administrator to initiate the once per year without cause test or when reason to initiate a “with cause” Availability test occurs (During appropriate system conditions),
   - **Issue** a verbal Exceptional Dispatch to the unit’s currently listed Availability MW value and
   - **Enter** the Exceptional Dispatch into the ED Tool using the following Instruction Type, in accordance with CAISO Operating Procedures 2330 Real-Time Exceptional Dispatch and 2330C Exceptional Dispatch Instruction Type Codes.
     - Legacy RMR Units = “RMR Test”.
     - Non-Legacy RMR Units = “Test”.

**Scheduling Coordinator**

1. **Respond** to CAISO verbal dispatch by operating the unit to the level instructed.

**CAISO Generation Desk**

1. **Complete** the test and
2. **End** the Exceptional Dispatch after giving appropriate time for the unit to respond to the Exceptional Dispatch based on the unit’s status at the beginning of the test and its ramp rate, and taking into consideration the unit’s Minimum On Time.
3. **Send** an email to ASNotifications@caiso.com to alert the CAISO Resource Test Administrator to the test.
Scheduling Coordinator

1. Upon test completion,
   - **Submit** Form 5340G (CAISO Operating Procedure 5340G RMR Availability Test Request Form Ambient Temperature Supplement) to ASNotifications@caiso.com.

CAISO Resource Test Administrator

1. Upon receipt of the notification that the without cause Availability test was completed,
   - **Update** the log for the unit to indicate that the once per year without cause test has been completed for the tested unit.
2. **Gather** data regarding the unit performance during the test, including form 5340G (CAISO Operating Procedure 5340G RMR Test Request Form Availability Test Ambient Temperature Supplement) from the Scheduling Coordinator.
   - **Analyze** the test results and
   - **Complete** Form 5340B (CAISO Operating Procedure 5340B CAISO RMR Availability Notice).
3. **Send** completed Form 5340B (CAISO Operating Procedure 5340B CAISO RMR Availability Notice) to the Scheduling Coordinator as well as other appropriate internal CAISO departments to update their information and processes related to the results of the test.

3.3 Market Participant Questions

How will I be compensated for the test?

**Answer:**

The CAISO requested Availability and Black Start tests for Legacy RMR would be treated as a regular RMR dispatch through the Settlements system. The Market Participant is required to adhere to regular RMR dispatch scheduling requirements. Ramping energy and start-ups (if necessary) are also accounted for.

SC requested Emissions tests for Legacy RMR are treated as a regular RMR dispatch through the Settlements system.

Test Dispatch Notices at Owner’s request to test Availability or heat input of the Unit are not treated as RMR Dispatches for RMR settlement purposes.
4. Supporting Information

Operationally Affected Parties

Shared with the Public.

References

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

<table>
<thead>
<tr>
<th>CAISO Tariff</th>
<th>Section 41, Appendix G, and Appendix H</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAISO Operating Procedure</td>
<td>5320 Resource Trial Operations and Test Energy Process</td>
</tr>
<tr>
<td></td>
<td>5330 Resource Testing Guidelines</td>
</tr>
<tr>
<td></td>
<td>5340B CAISO RMR Availability Notice</td>
</tr>
<tr>
<td></td>
<td>5340F CAISO RMR Availability Test Request Form</td>
</tr>
<tr>
<td></td>
<td>5340G RMR Test Request Form Availability Test Ambient Temperature Supplement</td>
</tr>
<tr>
<td>NERC Standards</td>
<td></td>
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</tbody>
</table>

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:

None.
Pre-Market Testing and Certification Procedures – RMR and Legacy RMR Units

Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Change</th>
<th>Date</th>
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<tbody>
<tr>
<td>1.3</td>
<td>Page 3: Changed reference from SLIC to outage management system.</td>
<td>2/27/15</td>
</tr>
<tr>
<td></td>
<td>Replaced WECC with Peak RC under Operationally Affected Parties.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Updated SLIC outage card references in the flow chart for OMS changes.</td>
<td></td>
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<tr>
<td>2.0</td>
<td>Periodic Review and major revision, re-written.</td>
<td>5/24/18</td>
</tr>
<tr>
<td></td>
<td>Updated Distribution Restriction to “None” and now shared on the Internet (With the Public).</td>
<td></td>
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<tr>
<td></td>
<td>Removed references of Appendices 5340H, 5340P and 5340Q as they are retired.</td>
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<tr>
<td></td>
<td>Removed version history prior to 3-years.</td>
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<tr>
<td>3.0</td>
<td>Periodic Review:</td>
<td>12/20/21</td>
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<tr>
<td></td>
<td>Updated terminology to include Legacy RMR (Instead of RMR) and added sections for RMR (Non-Legacy).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section 3.1: Minor update to Test Availability.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section 2.2.1: Minor edits to Resource Task Administration Tasks 3 and 4.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Updated instances of ISO to CAISO and included “the” where appropriate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Removed “the RC” from Operationally Affected Parties since procedure is shared publicly. Updated review criteria and added document controlled footer. Removed Technical Review and Approval Sections for consistency. Minor formatting and grammar updates.</td>
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</tr>
</tbody>
</table>

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

Every three (3) years.
## Appendix

5340B CAISO RMR Availability Notice  
5340F CAISO RMR Availability Test Request Form  
5340G RMR Availability Test Test Request Form Ambient Temperature Supplement