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## Purpose

In the event that data exchange and/or communication between the California ISO (CAISO) and a WEIM Entity Balancing Authority Area (BA) are disrupted, this document provides guidelines for mitigating Western Energy Imbalance Market (WEIM) disruptions test.

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## 1. Responsibilities

<b>CAISO Market Operator (MO)</b>	Monitors WEIM software for proper operations and solutions.  Takes action to resolve failures, notify affected WEIM Entity Balancing Authorities and CAISO Balancing Authority.
<b>WEIM Entity Balancing Authority</b>	Takes action to mitigate issues impacting its Balancing Authority Area
<b>CAISO Balancing Authority</b>	Takes action to mitigate issues impacting the CAISO Balancing Authority Area (Refer to CAISO Operating Procedure <a href="#">2710 Market Disruption - RTM Failure and Suspension</a> ).
<b>CAISO Market Engineering Support (MES)</b>	Resolve market software issues that impact WEIM inputs, runs and results.
<b>Power System Technology Development (PSTD)/Critical Systems Support (CSS)</b>	Resolve SIBR, MasterFile or other WEIM supporting software issues that impact WEIM inputs, runs and results.
<b>CAISO Customer Services</b>	Communicates with market participants and coordinates planned Market Disruption requests.

## 2. Scope/Applicability


### 2.1 Background

This document describes the steps that may be implemented for WEIM failures and disruptions as defined in the Business Practice Manual for Energy Imbalance Market, Section 11.5.

### 2.2 Scope / Applicability

This procedure includes WEIM related activities that impact the entities involved in the WEIM.

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### 3. Procedure Detail

#### 3.1 Tier 1

##### 3.1.1 Scenario 1-A: Market Failures – Advisory Results Sent

**Description:** Market Failures for single interval or less than one hour – Advisory results sent.

If the market experiences a failure for one or more intervals, it is designed to send out the advisory dispatch solutions for both RTD and RTPD. These advisory dispatches will be sent to ADS on the same timeline as the normal dispatch instructions. While advisory results continue to get sent to ADS, the market however is not able include any additional input changes such as updated forecast, outage, manual dispatch, startups and shutdowns, and conformance information. Advisory information will only exist for around an hour. If advisory dispatches run out or are not being sent, see scenario 1-B below.

**Tariff reference:** 7.7.9 subsections (c) and (e).

**BPM reference:** 7.10.4.1 and 7.10.4.2.

**Pricing:** Advisory run pricing will be used for all intervals where advisory dispatchers were sent.

**Market Operator Tools:**


- Everbridge messaging
- Market Software

**WEIM Tools:**

- Market Software
- EMS

**Possible Communication Types:**

- Phone call between Market Operator and WEIM entities
- IT Bridges
- WEIM Conference Call
- Everbridge messaging


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**Actions During Event:**


CAISO Market Operator
<p>1. If the WEIM run fails or has prolonged failures, then the Market Operator shall strive to <b>notify</b> all affected WEIM Entity BAs via Everbridge and/or phone. During a series of market failures, notification may be limited to the initial or initiating event.</p> <p>Example message:</p> <p><b>Attention WEIM Entity BAs :</b></p> <p><i>The CAISO has experienced WEIM (RTD and/or RTPD) run failures for HE xx, advisory results are being sent. The CAISO is investigating the cause of the market run failures and requests WEIM Entity BAs to review their advisory market results to confirm that results are acceptable, or follow their local procedure as necessary. Refer to Operating Procedure 2720, Scenario 1-A for more information.</i></p> <p>2. <b>Coordinate</b> with WEIM Operators to ensure that advisory results are adequate.</p> <p>3. If results are not adequate then the Market Operator has the following options:</p> <ul style="list-style-type: none"> <li>• Manually <b>initiate</b> an RTD previous solution for entire WEIM dispatch for all WEIM BAAs.</li> </ul> <p><b>Note 1:</b> <i>The RTD previous solution will be the last solution sent whether it is advisory or not.</i></p> <p><b>Note 2:</b> <i>Since RTPD sends out commitment instructions, previous solutions are no available to send, only advisory.</i></p> <ul style="list-style-type: none"> <li>• <b>Use</b> Market Disconnect feature for all WEIM BAAs (This will ensure no dispatches are sent to ADS, advisory or not)!</li> </ul> <p><b>Note:</b> <i>Blocking dispatches via the UI does not work for advisory solutions, as such the market disconnect feature must be utilized.</i></p> <p>4. <b>Coordinate</b> with Market Engineering Support and/or Service Desk as needed to investigate the issue <b>and log</b> event details.</p>

WEIM Entity Balancing Authority
<p>1. <b>Evaluate</b> advisory market dispatch results.</p> <p><b>If Advisory dispatch results are acceptable:</b></p> <p>2. Then <u>no</u> further operator action is needed.</p> <p><b>Note:</b> <i>For situations where RTD is failing and advisories are being sent and RTPD is still solving, be aware that new RTPD commitments may not be incorporated in the RTD advisories, as those RTD results are based upon old RTPD run results. Consider blocking such commitments or transitions as necessary, or perform manual dispatches to align with new RTPD instructions.</i></p>

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WEIM Entity Balancing Authority
<p><b>If Advisory dispatch instructions are not acceptable:</b></p> <p>3. If the Generator DOT/startup/shutdown, advisory dispatches are not acceptable, then <b>consider</b> the following options:</p> <ul style="list-style-type: none"> <li>• <b>Request</b> Market Operator to use the market disconnect feature. (This feature will shut off broadcast to ADS for the entire WEIM footprint.)</li> </ul> <p><i>Note: Blocking dispatches via the UI does not work for advisory solutions, which is why the market disconnect feature must be used.</i></p> <ul style="list-style-type: none"> <li>• <b>Request</b> the Market Operator to initiate an RTD previous solution.</li> </ul> <p><i>Note: The RTD previous solution will be the last solution sent whether it is advisory or not.</i></p> <ul style="list-style-type: none"> <li>• <b>Perform</b> out-of-market dispatches and <b>take</b> the generator(s) off market control.</li> </ul> <p><i>Note: Changes made out-of-market need to be entered into the market as manual dispatches as soon as possible, as the market may return at any time.</i></p> <p>4. If ETSR dispatches are not adequate, <b>consider</b> the following options:</p> <p><i>Note: These options are not recommended for only one or two interval failures. Consider the actions below after 15-20 minutes of prolonged failures.</i></p> <ul style="list-style-type: none"> <li>• <b>Coordinate</b> with the Market Operator to have the ETSR dispatch blocked.</li> </ul> <p><i>Note: The Market Operator cannot individually block ETSR dispatches, the only options are to send the previous RTD dispatch instructions for all WEIM BAAs or use the Market Disconnect feature.</i></p> <ul style="list-style-type: none"> <li>• <b>Perform</b> out-of-market ETSR adjustments.             <ul style="list-style-type: none"> <li>○ This is performed at the BA level using each entities respective EMS.</li> <li>○ <b>Work with</b> the adjacent ETSR BA to coordinate changing ETSR values in respective EMS systems.</li> <li>○ Changes in EMS need to be done at the same time to keep NSI values accurate. (This should be considered as a last-resort option.)</li> </ul> </li> </ul> <p><i>Note: ETSR changes made out-of-market need to be entered into the market as ETSR overrides or locks as soon as possible, as the market may return at any time.</i></p> <p>5. <b>Communicate and coordinate</b> all actions with the CAISO Market Operator as necessary.</p>


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**Actions When Returning From Event:**

CAISO Market Operator
<p>1. Market Operator shall <b>strive to notify</b> all affected WEIM Entity BAs via Everbridge and/or phone that the market is returning and to analyze your dispatch instructions and coordinate with the Market Operator as necessary.</p> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>The CAISO WEIM (RTD and/or RTPD) run failures have stopped and the WEIM is now solving again. CAISO requests WEIM Entity BAs to review their new market results to confirm that results are acceptable. If results are not acceptable then contact the Market Operator and follow local procedure(s) as necessary. Refer to Operating Procedure 2720, Scenario 1-A for more information.</i></p> <p>2. <b>Coordinate</b> with Market Engineering Support and WEIM entities as follows:</p> <ul style="list-style-type: none"> <li>• <b>Analyze</b> the first and subsequent market dispatches in RTD and RTPD when market starts to successfully solve again.</li> <li>• Based on the results and comments received from Market Engineering Support and WEIM entities, the Market Operator <b>may perform</b> one of the following:           <ul style="list-style-type: none"> <li>○ <b>Let</b> the new market dispatch results go to ADS (resume normal dispatch).</li> <li>○ <b>Send</b> previous solution for entire WEIM dispatch for all WEIM BAAs.</li> </ul> </li> </ul> <p><b>Note:</b> <i>Previous solution sent will be the last solution regardless if that solution is advisory or not.</i></p> <p><b>Enable</b> the Market Disconnect feature for all WEIM BAAs (This will ensure no invalid dispatches are sent to ADS, advisory or not).</p>

WEIM Entity Balancing Authority
<p>1. <b>Evaluate</b> new market dispatch results.</p> <p><b>If new market dispatch results are acceptable:</b></p> <p>2. <b>Confirm</b> the following:</p> <ul style="list-style-type: none"> <li>• If any out-of-market generator instructions were given during the time the market was sending advisory dispatches, either:           <ul style="list-style-type: none"> <li>○ <b>End</b> the manual dispatches and have the generator return to following market dispatch instructions <u>or</u></li> <li>○ <b>Create/Modify</b> the Manual Dispatch instructions in the market so the market is informed of the current and future conditions.</li> </ul> </li> </ul>

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**WEIM Entity Balancing Authority**

- If any out of market ETSR changes were made,
  - **Coordinate** with the adjacent ETSR BA to perform one of the following options:
    - Both WEIM entities must **coordinate and update** their ETSR values in EMS to return to following market dispatches.
  - **Adjust** manual ETSR entries in EMS accordingly over time to smoothly go back to following market dispatches.
  - **Retain** the manual ETSR entries in EMS but enter new out-of-market values into the market via the ETSR override UI to update the market of the current conditions.
    - Once market ETSR values match the values in EMS, both WEIM entities **must update** ETSR values in EMS to go back to following market dispatches.

**If new market dispatch results are not acceptable:**

3. If Generator DOT/startup/shutdown, dispatches are not adequate, then **review** the following options:

- **Block** dispatch instructions via the market UI.

***Note:** Keep in mind when blocking generator dispatch instructions that ETSR dispatch instructions cannot be blocked and will be sent to ADS. The only method to block ETSR dispatch instructions is to either use previous solution or the Market Operator use of the market disconnect feature.*

- **Request** Market Operator to use the market disconnect feature.
  - This feature will shut off broadcast to ADS for the entire WEIM footprint.

- **Request** the Market Operator to use RTD previous solution.

***Note:** The RTD previous solution will be the last solution sent whether it is advisory or not.*

- **Perform** out-of-market dispatches and
- **Take** the generator(s) off market control.


***Note:** Changes made out-of-market need to be entered into the market as a manual dispatch as soon as possible so it can be accounted for in the next interval solution.*

4. If ETSR dispatches are not adequate, **Review** the following options:

***Note:** This option is not recommended for only one or two failures. Consider after 15-20 minutes.*

- **Coordinate** with the Market Operator to block the ETSR dispatch.

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<b>WEIM Entity Balancing Authority</b>
<p><b>Note:</b> The Market Operator cannot individually block ETSR dispatches. The can to send the previous RTD dispatch instructions for all WEIM BAAs or utilize the Market Disconnect feature.</p> <ul style="list-style-type: none"> <li>• <b>Utilize</b> the ETSR Limit Override function to adjust limits downward from previously submitted limits.</li> <li>• <b>Perform</b> out-of-market ETSR adjustments. <ul style="list-style-type: none"> <li>○ This is performed at the BA level <b>using</b> each entities respective EMS.</li> <li>○ <b>Coordinate</b> with the adjacent ETSR BA to <b>change</b> ETSR values in respective EMS systems.</li> <li>○ Changes in EMS <u>need to be done at the same time</u> to keep NSI values accurate. (<i>This should be considered as a last-resort option.</i>)</li> </ul> </li> </ul> <p><b>Note:</b> ETSR changes made out-of-market need to be entered into the market as ETSR overrides or locks as soon as possible so it can be accounted for in the next interval solution.</p> <p>5. <b>Communicate and coordinate</b> all actions with the CAISO Market Operator as necessary.</p>

### 3.1.2 Scenario 1-B: Market Failures – No Results Sent

**Description:** Market Failures for single interval or less than one hour – No results sent.

If the market experiences a failure for one or more intervals, it is designed to send out the advisory dispatch solutions for both RTD and RTPD but there may be situations, such as a broadcast failure, where results, including advisory, are NOT sent to ADS. In this situation it is common practice that if a resource does not receive any new DOTs that they will remain at the value of the last DOT they received just prior to the failure. As renewable resources and loads continue to change, this may lead to balancing issues if the generation and ETSRs continue to remain flat and manual intervention may needed.

**Tariff reference:** 7.7.9 subsections (c) and (e).

**BPM reference:** 7.10.4.1 and 7.10.4.2.


**Pricing:** Price Fill will be used for all intervals that did not receive a broadcast. Price fill is based on the price of the run just prior to the failure.

**Market Operator Tools:**

- Everbridge Messaging
- Market Software

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**WEIM Tools:**

- Market Software
- EMS

**Possible Communication Types:**


- Phone call between Market Operator and WEIM entities
- IT Bridges
- WEIM Conference Call
- Everbridge messaging

**Actions During Event:**


CAISO Market Operator
<p>1. If the WEIM run fails or has prolonged failures, then the Market Operator shall strive to <b>notify</b> all affected WEIM Entity BAs via Everbridge and/or phone. During a series of market failures, notification may be limited to the initial or initiating event.</p> <p>Example message:</p> <p><i><b>Attention WEIM Entity BAs:</b> The CAISO has experienced WEIM (RTD and/or RTPD) run failures for HE xx and advisory results are not being sent. The CAISO is investigating the cause of the market run failures and requests WEIM Entity BAs follow their local procedure(s) as necessary. Refer to Operating Procedure 2720, Scenario 1-B for more information.</i></p> <p>2. <b>Coordinate</b> with WEIM Operators to ensure they are advised of the situation.</p> <ul style="list-style-type: none"> <li>• With the market not solving and results not being sent to ADS, the Market Operator has limited actions they can perform other than <b>working with</b> Market Engineering Support to get the market producing valid results again.</li> </ul> <p>3. <b>Coordinate</b> with Market Engineering Support and/or Service Desk as needed to <b>investigate</b> the issue <u>and</u> <b>log</b> event details.</p>

WEIM Entity Balancing Authority
<p>1. <b>Evaluate</b> current and future system conditions.</p> <ul style="list-style-type: none"> <li>• If current and forecasted system conditions are expected to be relatively flat for approximately the next hour, then no action may be required. Resources may remain at their last known valid DOT while the issues get resolved.</li> </ul> <p>2. If system conditions are particularly uncertain and sizable generator or ETSR movement will be required to maintain balance, <b>consider</b> the following:</p> <ul style="list-style-type: none"> <li>• Generator movement: <b>Perform</b> out-of-market dispatches <u>and</u> <b>take</b> the generator(s) off market control.</li> </ul>

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WEIM Entity Balancing Authority
<p><i><b>Note:</b> Changes made out-of-market need to be entered into the market as manual dispatches as soon as possible, as the market may return at any time.</i></p> <ul style="list-style-type: none"> <li>• ETSR movement: <b>Perform</b> out-of-market ETSR adjustments. (This is performed at the BA level <b>using</b> each entities respective EMS.) <ul style="list-style-type: none"> <li>○ <b>Coordinate</b> with the adjacent ETSR BA to <b>change</b> ETSR values in respective EMS systems. <ul style="list-style-type: none"> <li>▪ Changes in EMS <u>need to be done at the same time</u> to keep NSI values accurate. (<i>This should be considered as a last-resort option.</i>)</li> </ul> </li> </ul> </li> </ul> <p><i><b>Note:</b> ETSR changes made out-of-market need to be entered into the market as ETSR overrides or locks as soon as possible, as the market may return at any time.</i></p> <p><b>3. Communicate and coordinate</b> all actions with the CAISO Market Operator as necessary.</p>


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**Actions When Returning From Event:**

CAISO Market Operator
<p>1. Market Operator shall strive to <b>notify</b> all affected WEIM Entity BAs via Everbridge and/or phone that the market is returning and to analyze your dispatch instructions and coordinate with the Market Operator as necessary.</p> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>The CAISO WEIM (RTD and/or RTPD) run failures have stopped and the WEIM is now solving again. CAISO requests WEIM Entity BAs to review their new market results to confirm that results are acceptable. If results are not acceptable then contact the Market Operator and follow local procedure(s) as necessary. Refer to Operating Procedure 2720, Scenario 1-B for more information.</i></p> <p>2. <b>Coordinate</b> with Market Engineering Support and WEIM entities as follows:</p> <ul style="list-style-type: none"> <li>• <b>Analyze</b> the first and subsequent market dispatches in RTD and RTPD when the market starts to successfully solve again.</li> <li>• Based on the results and comments received from Market Engineering Support and WEIM entities, the Market Operator <b>may perform</b> one of the following:           <ul style="list-style-type: none"> <li>○ <b>Let</b> the new market dispatch results go to ADS (normal dispatch).</li> <li>○ <b>Enable</b> the Market Disconnect feature for all WEIM BAAs. (This will ensure no invalid dispatches are sent to ADS, advisory or not.)</li> </ul> </li> </ul> <p><b>Note:</b> <i>The “send previous solution” feature is not recommended in this situation, as the last solution sent to ADS could be quite old. It is recommended that the “market disconnect” feature be used instead.</i></p>


WEIM Entity Balancing Authority
<p>1. <b>Evaluate</b> new market dispatch results.</p> <p><b>If new market dispatch results are acceptable:</b></p> <p>2. <b>Confirm</b> the following:</p> <ul style="list-style-type: none"> <li>• If any out-of-market generator instructions were given during the time the market was not sending any dispatches, either:           <ul style="list-style-type: none"> <li>○ <b>End</b> the manual dispatches and have the generator return to following market dispatch instructions <u>or</u></li> <li>○ <b>Modify</b> the Manual Dispatch instructions in the market so the market is informed of the current and future conditions.</li> </ul> </li> <li>• If any out of market ETSR changes were made,           <ul style="list-style-type: none"> <li>○ <b>Coordinate</b> with the adjacent ETSR BA to <b>perform</b> one of the following options:               <ul style="list-style-type: none"> <li>▪ Both WEIM entities must <b>coordinate and update</b> their ETSR values in EMS to <b>return</b> following market dispatches.</li> </ul> </li> </ul> </li> </ul>

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<b>WEIM Entity Balancing Authority</b>
<ul style="list-style-type: none"> <li>○ <b>Adjust</b> manual ETSR entries in EMS accordingly over time to smoothly <b>go back</b> to following market dispatches.</li> <li>○ <b>Retain</b> the manual ETSR entries in EMS, but <b>enter</b> new out-of-market values into the market via the ETSR override UI to <b>update</b> the market of the current conditions. <ul style="list-style-type: none"> <li>▪ Once market ETSR values match the values in EMS, both WEIM entities must <b>update</b> ETSR values in EMS to <b>go back</b> to following market dispatches.</li> </ul> </li> </ul> <p><b>If new market dispatch results are not acceptable:</b></p> <p>3. If Generator DOT/startup/shutdown, dispatches are not adequate, <b>review</b> the following options:</p> <ul style="list-style-type: none"> <li>• <b>Block</b> dispatch instructions via the market UI. <p><i><b>Note:</b> Keep in mind when blocking generator dispatch instructions that ETSR dispatch instructions cannot be blocked and will be sent to ADS. The only method to block ETSR dispatch instructions is to either use previous solution or the Market Operator use of the market disconnect feature.</i></p> </li> <li>• <b>Request</b> Market Operator to use the market disconnect feature. (This feature will shut off broadcast to ADS for the entire WEIM footprint.) <p><i><b>Note:</b> The “send previous solution” feature is not recommended in this situation, as the last solution sent to ADS could be quite old. It is recommended that the “market disconnect” feature be used instead.</i></p> </li> <li>• <b>Perform</b> out-of-market dispatches <u>and</u> <b>take</b> the generator(s) off market control. <p><i><b>Note:</b> Changes made out-of-market need to be entered into the market as manual dispatches as soon as possible, as the market may return at any time.</i></p> </li> </ul> <p>4. If ETSR dispatches are not adequate, <b>review</b> the following options:</p> <p><i><b>Note:</b> This option is not recommended for only one or two failures. Consider after 15-20 minutes.</i></p> <ul style="list-style-type: none"> <li>• <b>Coordinate</b> with the Market Operator to <b>block</b> the ETSR dispatch. <p><i><b>Note:</b> The Market Operator cannot individually block ETSR dispatches. The can to send the previous RTD dispatch instructions for all WEIM BAAs or utilize the Market Disconnect feature.</i></p> </li> <li>• <b>Utilize</b> the ETSR Limit Override function to <b>adjust</b> limits downward from previously submitted limits.</li> <li>• <b>Perform</b> out-of-market ETSR adjustments. <ul style="list-style-type: none"> <li>○ This is performed at the BA level <b>using</b> each entities respective EMS.</li> </ul> </li> </ul>

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<b>WEIM Entity Balancing Authority</b>
<ul style="list-style-type: none"> <li>○ <b>Coordinate</b> with the adjacent ETSR BA to <b>change</b> ETSR values in respective EMS systems.</li> <li>○ Changes in EMS <u>need to be done at the same time</u> to keep NSI values accurate. (This should be considered as a last-resort option.)</li> </ul> <p><i>Note: ETSR changes made out-of-market need to be entered into the market as ETSR overrides or locks as soon as possible so it can be accounted for in the next interval solution.</i></p> <ul style="list-style-type: none"> <li>● <b>Communicate <u>and</u> coordinate</b> all actions with the CAISO Market Operator as necessary.</li> </ul>

### 3.1.3 Scenario 1-C: Software System Maintenance

**Description:** Software System Maintenance (a.k.a. “Market Patch”) for single or multiple intervals less than one hour – No results sent.

During a market patch, the market is intentionally set in a manual mode where no results are created for RTD, or possibly both RTD and RTPD. When no results are sent to ADS, the actions and responsibilities are identical to those outlined in Scenario 1-B above.


However, there are some additional considerations described in this scenario. During a market patch, the Market Operator has stronger confidence and control of when the market can be re-enabled in normal operation, which often precludes the need for WEIM Operator manual intervention to balance their system. Additionally, as market patches are planned events, the notifications differ from unplanned events. Also outlined in this scenario are guidelines with regard to requesting a postponement of a planned market patch. Lastly, during market patches the Market Operator has the ability to send a future RTPD advisory result. This unique functionality is also described in this scenario.

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**Actions During Event:**

CAISO Market Operator
<p>1. Prior to a Market Patch, the Market Operator shall <b>notify</b> all affected WEIM Entity BAs via EverBridge and/or phone.</p> <ul style="list-style-type: none"> <li>With the exception of unplanned (emergency) patching, the Market Operator shall <b>strive to provide</b> advance notification of approximately one (1) hour prior to installation.</li> <li>The Market Operator will also <b>strive to provide</b> a final notification immediately prior to market patching, approximately 10-15 minutes prior to the event start.</li> </ul> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>The California ISO has scheduled maintenance in its IFM/RTN production environment today [MM/DD/YYYY @ XX:XX]. RTD 5-min and RTPD 15-min dispatches may be interrupted and your BAAOP UI will probably disconnect and require a new session login. The Market Operator will send a follow-up message when the UI is available for login. Refer to Operating Procedure 2720, Scenario 1-C for more information.</i></p> <p><i>The Market Operator will use the “Trigger RTPD Advisory” feature for RTPD 5 at approximately XX:20.</i></p> <p>2. <b>Switch</b> the market modules RTD, RTPD, STUC and RTBS into Manual Mode in coordination with Market Engineering Support.</p> <p>3. <b>Utilize</b> the Trigger RTPD Advisory solution function, if desired.</p> <p><b>Note:</b> <i>The Market Operator has the ability to send a future RTPD advisory solution prior to market patching. This functionality is designed to reduce the number of lost RTPD intervals with no results during a market patch. The process works as follows:</i></p> <ul style="list-style-type: none"> <li><i>For example, at approximately XX:13, RTPD 6 completes.</i></li> <li><i>At approximately XX:20, the Market Operator utilizes the Trigger Advisory function.</i></li> </ul> <p><b>Note:</b> <i>Waiting until approximately XX:20 allows WEIM entities as much time as possible to see RTPD 6 results before RTPD 5 advisory results are received early.</i></p> <ul style="list-style-type: none"> <li><i>In approximately 2-3 minutes, RTPD 5 results will be visible to all WEIM entities in the UI appearing as if RTPD 5 was executed normally. However, these are the advisory results of the RTPD 6 run inserted for the binding interval RTPD 5.</i></li> </ul> <p><b>Note:</b> <i>During this process, the RTPD Dispatch Control UI will display the message “Operator Initiated Advisory Run.” Any changes made in</i></p>


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CAISO Market Operator
<p><i>RTPD 6 (such as a blocked dispatch) will not be incorporated into the RTPD 5 advisory results.</i></p> <p><b>Note:</b> During this process, the RTPD Dispatch Control UI will display the message “Operator Initiated Advisory Run.” Any changes made in RTPD 6 (such as a blocked dispatch) will not be incorporated into the RTPD 5 advisory results.</p> <ul style="list-style-type: none"> <li>WEIM entities will receive this RTPD 5 result as a binding RTPD run while technically it was an advisory solution as outlined in Scenario 1 -A. However, since this was triggered from this recognized process during a market patch, a separate advisory EverBridge notification will not be sent.</li> </ul> <p>4. During the actual market patching when the market is unavailable, the Market Operator shall <b>remain apprised</b> of the patch progress and available to WEIM Operators for questions or concerns.</p> <p style="text-align: center;"><b>Refer</b> back to Scenario 1-B for further Market Operator actions.</p>

WEIM Entity Balancing Authority
<ol style="list-style-type: none"> <li>Upon receipt of the EverBridge notification of a market patch, <b>evaluate</b> current and projected future system conditions with regard to requesting a postponement of the market patch.</li> <li>If a manual action is available to the WEIM-entity, <b>perform</b> the manual action to avoid a postponement. Reasonable manual actions may include the WEIM-entity having to:           <ul style="list-style-type: none"> <li><b>Perform</b> Load (Bias) Conformances</li> <li><b>Create</b> Manual Dispatches</li> <li><b>Establish</b> Limit Overrides on ETSRs or ITCs</li> <li><b>Enter</b> VER Forecast Overrides</li> <li><b>Make</b> Resources Unavailable</li> </ul> </li> <li>If such a manual action is required before a patch, <b>contact</b> the Market Operator immediately, as the patch may be postponed one or two RTD intervals to ensure the market processes the action before the patch starts.</li> <li>If such a manual action is <u>not</u> available, the WEIM-entity may <b>request</b> a postponement of the patch.</li> <li>However, as market patches require coordination from numerous CAISO teams, <b>postponing</b> a patch should be <b>considered</b> a last-resort option if no other reasonable manual actions exist.</li> </ol> <p>The following are guidelines on patch postponement:</p> <ul style="list-style-type: none"> <li>If the WEIM entity is currently in a Contingency or EEA (Energy Emergency Alert), a postponement of the market patch <b>may be granted</b>.</li> <li>If the WEIM entity is experiencing relatively high loads, has a current low ACE, in a BAAL exceedance or has experienced a resource unexpectedly shutdown or other facility become unavailable and has <u>not</u> declared a</li> </ul>

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<b>WEIM Entity Balancing Authority</b>
<p>Contingency, a postponement request <b>will be considered</b>, but may or may not be granted.</p> <ul style="list-style-type: none"> <li>If there is a possibility that a manual dispatch or other manual action may be required during the market patch, a postponement request will likely <b>not be granted</b>.</li> </ul> <p>6. Assuming the market patch is not postponed, <b>refer back</b> to Scenario 1-B for actions taken during the event when no market results are received.</p>

**Actions When Returning From Event:**

<b>CAISO Market Operator</b>
<ol style="list-style-type: none"> <li>Market Operator shall <b>strive to notify</b> all affected WEIM Entity BAs via Everbridge <u>and/or</u> phone that the market is returning and to analyze your dispatch instructions and coordinate with the Market Operator as necessary.</li> </ol> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>The CAISO planned maintenance has completed. CAISO requests WEIM Entity BAs to review their new market results to confirm that results are acceptable. If results are not acceptable then contact the Market Operator and follow local procedure(s) as necessary. Refer to Operating Procedure 2720, Scenario 1-C for more information.</i></p> <ol style="list-style-type: none"> <li><b>Refer back</b> to Scenario 1-B for communication actions when the market resumes normal operations.</li> </ol>

<b>WEIM Entity Balancing Authority</b>
<ol style="list-style-type: none"> <li><b>Refer</b> to Scenario 1-B for details on actions to <b>consider</b> if the market results are valid or not.</li> </ol>



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### 3.1.4 Scenario 1-D: High Impact Scheduled Maintenance/Enhancement


**Description:** High Impact Scheduled Maintenance/Enhancement – No results sent.

During such events as Fall/Winter/Spring Releases, On-boardings, framework/code-tree enhancements, or other significant installations, the market may be stopped in a coordinated fashion (manual-mode) and not produce results. As such, operator actions and responsibilities are identical to the scenario outlined in Scenario 1-B. However, since such events have the potential for high impact, advanced notifications and coordination are necessary. In addition, if requested by the Manager, Market Coordination based upon the impact assessment, ETSR's may be limited. Details of each event will be provided by Customer Services and the Market Operator as described below.

**Note:** DB Model builds may also fall under Scenario 1-D after evaluation of the impact assessment. As such, ETSR limitations during DB Model Builds will only be requested on a case-by-case basis. WEIM entities may limit their ETSRs if desired for HE24 and HE01 but it is not required. This is a change in the procedure from previous DB builds starting May 2022.

#### Actions Prior to High Impact Scheduled Maintenance/Enhancement Event:


CAISO Customer Service		
<b>Perform</b> advanced notifications per the following approximate schedule:		
Approx. Time	Action	Comment
Monday a week prior to Deployment	Notice	Indicates which days the following week the deployment will be done (typically Wed, Thur or Fri)
Monday week of Deployment	Notice If it is a significant event and ETSR limitations are requested by the Manager, Market Coordination, details will be included	The Notice will specify the exact date of the deployment.
Day Of Deployment	E-Mail to all BAAOP Production Users  If it is a significant event and ETSR limitations are requested by the Manager, Market Coordination, details will be included	A targeted communication to all BAAOP production users

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CAISO Market Operator		
1. <b>Perform</b> advanced notifications per the following approximate schedule:		
Approx. Time	Action	Comment
~24 Hours in Advance	EverBridge and MNS	
~6 Hours in Advance (Start of Night Shift)	If it is a significant event and ETSR limitations are requested by the Manager, Market Coordination, details will be included	This notification is important for the shift operators coming in that evening.
~2-3 Hours in Advance	EverBridge and MNS	If ETSR limitation are requested, WEIM Operators should confirm details and plan accordingly
Prior to event start	If necessary for high-impact installations, Send an EverBridge Conference Call invitation.  <i><b>Note:</b> EverBridge Conference calls are typically not initiated for DB Model Builds.</i>	The EverBridge Conference call eliminates the need for further EverBridge messages immediately prior to and during the event.
2. If ETSR's are not limited as requested, the Market Operator may <b>lock</b> ETSR's in a controlled fashion in coordination with WEIM Operator.		
3. <b>Refer</b> back to Scenario 1-B for further Market Operator actions.		

WEIM Entity Balancing Authority													
1. If ETSR's are requested to be limited (or the WEIM entities desire to limit their ETSR's during DB Model builds):													
<b>The following outlines three examples of limiting ETSRs:</b>													
<b>Example 1 – Hourly Ramp Down via Net ITC Changes:</b>													
Manually <b>update</b> the Net ITC (hourly) values leading up to 2300 PPT.													
For example, <b>Reduce</b> the Hourly ITC Limit 150 MW hourly downward leading up to 23:00:													
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Operating Hour</th> <th style="text-align: center;">Hourly ITC Limit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Normal Conditions</td> <td style="text-align: center;">600</td> </tr> <tr> <td style="text-align: center;">20:00 (HE21)</td> <td style="text-align: center;">450</td> </tr> <tr> <td style="text-align: center;">21:00 (HE22)</td> <td style="text-align: center;">300</td> </tr> <tr> <td style="text-align: center;">22:00 (HE23)</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: center;">23:00 (HE24)</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	Operating Hour	Hourly ITC Limit	Normal Conditions	600	20:00 (HE21)	450	21:00 (HE22)	300	22:00 (HE23)	150	23:00 (HE24)	0	
Operating Hour	Hourly ITC Limit												
Normal Conditions	600												
20:00 (HE21)	450												
21:00 (HE22)	300												
22:00 (HE23)	150												
23:00 (HE24)	0												

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WEIM Entity Balancing Authority
<p><b>Example 2 – Sub-Hourly Ramp using the Manual Override (in BAAOP):</b></p> <p>Manually <b>update</b> the Override values on each individual ETSR in both RTD and RTPD. Note that this is a manually intensive task and would have to be re-performed frequently, as Manual Overrides are only available for the number of RTD and RTPD advisory solutions available in the UI.</p> <p><b>Example 3 – Sub-Hourly Ramp via Dynamic Limit Interface:</b></p> <p>In lieu of the manually intensive approach outlined in Option 2, <b>update</b> each ETSR limit via the Dynamic Limit Interface in same linear sub-hourly ramp fashion. This is typically performed via API interfaces.</p> <p><i><b>Note:</b> Be advised that the market may utilize all available ETSR capacity up to the to the last possible interval before the limit changes to zero, based upon the sum of a given WEIM entity’s generation fleet ramp rate capacity.</i></p> <p><b>2. Refer</b> back to Scenario 1-B for further WEIM Operator actions.</p>

**Actions When Returning From Event:**

CAISO Market Operator
<ol style="list-style-type: none"> <li>If ETSRs had to be locked, <b>unlock</b> ETSRs in a controlled fashion in coordination with WEIM Operator.</li> <li><b>Refer</b> back to Scenario 1-B for further Market Operator actions.</li> </ol>

WEIM Entity Balancing Authority
<ol style="list-style-type: none"> <li>After the installation is complete, evaluate new market dispatch results.           <ul style="list-style-type: none"> <li><b>Refer</b> to Scenario 1-B for details on actions to consider if the market results are good or not.</li> </ul> </li> <li>When comfortable with returning to normal market operations and ETSR’s were limited or locked,           <ul style="list-style-type: none"> <li><b>Return</b> the ETSR limits in a controlled fashion.</li> </ul> </li> </ol>

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### 3.2 Tier 2

#### 3.2.1 Scenario 2-A: Exhausted Advisory Runs - No Results Sent

**Description:** Market Failures longer than an hour – advisory solutions have been exhausted, no instructions being sent to ADS. Note that while the actions are the same as Scenario 1B where no market results are sent, the reason and generally the severity in this Scenario is different.

Specifically, if the market has been experiencing failures for longer than an hour then it is possible that no more advisory solutions exist and no instructions are being sent to ADS. In this situation, it is common practice that if a resource does not receive any new DOTs that it will remain at the value of the last advisory DOT it received. As renewable resources and loads continue to change, this may lead to balancing issues if the generation and ETSRs continue to remain flat and manual intervention may be needed.

**Tariff reference:** 7.7.9 subsections (c) and (e).

**BPM reference:** 7.10.4.1 and 7.10.4.2.

**Pricing:** Admin Pricing. Reference BPM for more details.

**Market Operator Tools:**


- Everbridge messaging
- Market Software

**WEIM Tools:**

- Market Software
- EMS

**Possible Communication Types:**

- Phone call between Market Operator and WEIM entities
- IT Bridges
- WEIM Conference Call
- Everbridge messaging

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**Actions During Event:**

<b>CAISO Market Operator</b>
<p>1. If the WEIM run failures continue and advisory solutions have been exhausted, then the Market Operator shall <b>notify</b> all affected WEIM Entity BAs via Everbridge and/or phone. During a series of market failures, notification may be limited to the initial or initiating event.</p> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>The CAISO has experienced WEIM run failures for HE xx and advisory results have been exhausted and are no longer being sent. The CAISO is investigating the cause of the market run failures and requests WEIM Entity BAs follow their local procedure(s) as necessary. Refer to Operating Procedure 2720, Scenario 2-A for more information.</i></p> <p>2. <b>Refer</b> to Scenario 1-B for the Market Operator actions during no market results.</p>


<b>WEIM Entity Balancing Authority</b>
<p>1. <b>Refer</b> to Scenario 1-B for WEIM Operator actions during no market results.</p>

**Actions When Returning From Event:**

<b>CAISO Market Operator (Market Operator)</b>
<p>1. Market Operator shall <b>notify</b> all affected WEIM Entity BAs via Everbridge and/or phone that the market is returning and to analyze your dispatch instructions and coordinate with the Market Operator as necessary.</p> <p>Example message:</p> <p><b>Attention WEIM Entity BAs:</b> <i>The CAISO WEIM run failures have stopped and the WEIM is now solving again. CAISO requests WEIM Entity BAs to review their new market results to confirm that results are acceptable. If results are not acceptable then contact the Market Operator and follow local procedure(s) as necessary.</i></p> <p>2. <b>Refer</b> to Scenario 1-B for the Market Operator actions when returning from no market results.</p>

<b>WEIM Entity Balancing Authority</b>
<p>1. <b>Refer</b> to Scenario 1-B for WEIM Operator actions returning from no market results.</p>

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### 3.3 Tier 3

#### Market Disruption/Market Suspension

At the highest level, the concept of a Market Disruption is defined per Tariff Section 7.7.6 by as the non-operation of the CAISO markets. The concept of a Market Suspension is where the CAISO System Operations must purposefully stop (i.e., suspend) the markets for all WEIMs and apply Administrative Prices in order to prevent, contain, or correct a System Emergency. It is under this suspension authority, and desire to avoid such disruptions, that numerous mitigation actions are further prescribed in the Tariff and detailed in the Market Operations and EIM BPMs. Specifically, the Market Operations BPM section 7.10.4 outlines steps to address Market Disruptions in each market module including the Day-Ahead, RTD and RTPD. Section 11.4 of the BPM for Energy Imbalance Market addresses “Market Disruptions” at an individual WEIM entity level where a WEIM must balance their BAA outside WEIM markets through regulation, dispatch instructions and other mitigation efforts. As a result, operationally, the various flavors of the term “Market Disruption” has led to confusion which this procedure seeks to address.

#### Definitions

**Market Disruption** - While the Tariff authority term for all such events, operationally the term should be reserved for unplanned and unintended market or market module failures or invalid results that affect all WEIM entities equally.


**Market Suspension** - Where CAISO System Operations, as a last resort, must purposefully suspend the markets and apply Administrative Prices in order to prevent, contain, or correct a System Emergency. This would also apply to all WEIMs equally.

**Market Isolation** - Operationally, this has evolved into a very important term where clarity and consistency amongst operators is paramount. The confusion has revolved around the numerous mitigation steps operators may perform and what several WEIMs have been required to implement. As such, two levels on Market Isolation are defined as follows:

- **Market Isolation, Level 1**

Upon Notification and Three-Part Communication repeat-back between the Market Operator and WEIM operator of the affected WEIM entity, coordinated locking to zero or base-schedule of all ETSRs shall occur. In this level, the market is still producing market-optimized dispatch results for the given WEIM entity’s internal resources, but the WEIM is isolated from movement required to support dynamic ETSR transfers. When in this state of locked ETSRs only, the WEIM is defined as in “Market Isolation, Level 1.” Note that the start-time of a Market Isolation, Level 1 as logged by the Market Operator may ultimately be utilized as the settlement start-time of Administrative Pricing.

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- **Market Isolation, Level 2**

Upon Notification and Three-Part Communication repeat-back between the Market Operator and WEIM operator of the affected WEIM entity, the WEIM has acknowledged further mitigation steps are required beyond ETSR locking. These steps may include but are not limited to manual dispatches, de-activation of market constraints including flowgates and contingencies, making resources unavailable or non-participating, and other steps as requested and coordinated between the Market Operator and WEIM operator. This also may include mitigation- systems built by WEIM-entities to support their local procedures. At such time, this WEIM is considered in a Market Isolation, Level 2 as logged by the Market Operator. It is desired that such mitigation actions will prevent further need to enter into a full Market Separation.

### Market Separation


Upon Notification and Three-Part Communication repeat-back between the Market Operator and WEIM operator where the affected WEIM entity has moved past Market Isolation, Level 2 and cannot follow any market-optimized dispatches. There are several reasons a full Market Separation may be required including the inability to receive or process dispatches (technology issues), inability to staff (human resource issues), electricity issues (severe network failure) or the inability to monitor (operations facility issues). Market Separation requires several coordinated steps from CAISO IT teams to complete and may require 3-4 hours to implement if unplanned.

### Types of Market Separation (Planned and Unplanned)

A WEIM entity may request Market Separation from WEIM as either a planned outage, or real-time (unplanned) event for the following valid reasons:

Type	Notice Requirements	Description
Planned Market Separation	Planned Market Separation events must be requested at least five (5) business days in advance via CIDI ticket.	In support of a planned electricity line or facility outage, which splits or changes the WEIM Network model in a manner, which is currently not supported by the WEIM Market.
		In support of a planned computer system or software outage or update in which the unavailability or risk of unavailability could impair the WEIM entity's ability to accurately remain in the market, allow ETSR movement and follow market dispatches.

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Type	Notice Requirements	Description
<b>Scenario 3-B</b>  Unplanned Market Separation	Real-time events are unplanned and are requested by the WEIM Operator in real-time.  <i>Planned outages should not result in unplanned real-time events as a result of insufficient notification.</i>	When in real-time, events affecting a WEIM entity’s electrical system, human resources, computer systems, or physical location prevent or may likely prevent the entity from accurately allowing ETSR movement including all market dispatches presumably, but not necessarily, after going through Market Isolation, Level 1 and Level 2.

**Important Note:** *The General Steps Required to Separate a WEIM Entity BA from the WEIM Market are the same, whether Planned or Unplanned which include:*

- **Market Separation High-Level Steps:**

- a) **Remove** WEIM bids either by:
  - Making the SC ID as non-participating in the MasterFile (Primarily for planned Market Disruptions greater than one day).
  - Manually removing the impacted WEIM entity BAA bids.
- b) **Set** all Flexible ramping requirements to zero.
- c) **Un-enforce** all transmission constraints in the affected WEIM Entity BA including:
  - Flowgates
  - Nomograms
  - Contingencies

### 3.3.1 Scenario 3-A: Planned Market Separation Event

Planned Market Separation events must be requested at least five (5) business days in advance via CIDI ticket.

**Tariff reference:** 7.7.6, 7.7.7.

**BPM reference:** 7.10.4.


**Pricing:** Admin Pricing

**Market Operator Tools:**

- Everbridge messaging
- Market Software

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**WEIM Tools:**


- PCI
- Market Software
- EMS

**Possible Communication Types:**

- Phone call between CAISO Customer Services / Market Operator and WEIM entities
- CIDI
- IT Bridges
- Everbridge messaging

<b>WEIM Entity Balancing Authority</b>
<p><b>Consider</b> the following when requesting a planned Market Separation:</p> <ol style="list-style-type: none"> <li>1. <b>Assess</b> if the WEIM entity will be able to: <ul style="list-style-type: none"> <li>• <b>Follow</b> market dispatches, startups/shutdowns and configuration transitions, <u>and</u></li> <li>• <b>Support</b> ETSR Imports and Exports.</li> </ul> </li> <li>2. If the actions prescribed in Market Isolation Level 1 and 2 alone cannot prevent a planned Market Separation: <p>A planned Market Separation must be requested:</p> <ul style="list-style-type: none"> <li>• <b>Submit</b> a CIDI ticket, at least <u>5 business days prior</u>, <ul style="list-style-type: none"> <li>○ <b>Requesting</b> a “Market Separation” with the following information: <ul style="list-style-type: none"> <li>▪ Start Date / Time</li> <li>▪ End Date / Time</li> <li>▪ Reason, including any details that may impact the Start or End times.</li> <li>▪ Actions the WEIM entity will be taking (e.g., Balancing the BA without the use of the market utilizing internal procedures).</li> <li>▪ Primary and Secondary Contacts</li> </ul> </li> </ul> </li> </ul> <p><i><b>Note:</b> A Market Separation must be coordinated with CAISO Customer Services and cannot be declared by the WEIM entity unilaterally.</i></p> </li> <li>3. Upon the Start time and during the Market Separation, <ul style="list-style-type: none"> <li>• <b>Stop</b> submitting bids.</li> <li>• <b>Disable</b> any auto-bid submittal process, if applicable.</li> <li>• <b>Continue</b> all Base Schedule submittals for bilaterally-contracted energy across all Base and/or Dynamic ETSRs. <ul style="list-style-type: none"> <li>○ WEIM entities should have defined procedures to continue such submittals directly via BSAP or backup API-interfaces in the event of any disruption to their primary 3rd-party submittal software.</li> </ul> </li> </ul> </li> </ol>


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<b>WEIM Entity Balancing Authority</b>
<p><i><b>Note:</b> Market dispatches for base schedules will still be sent. LMPs will still be calculated for the affected BA but will NOT be used to settle Uninstructed Imbalance Energy.</i></p>


<b>CAISO Customer Services</b>
<ol style="list-style-type: none"> <li>1. <b>Receives</b> notification from a WEIM entity via CIDI ticket of requested WEIM Separation event.          The request shall include:         <ul style="list-style-type: none"> <li>• Start Date / Time</li> <li>• End Date / Time</li> <li>• Reason, including any details that may impact the Start or End times.</li> <li>• Actions the WEIM entity will be taking (e.g., Balancing the BA without the use of the market utilizing internal procedures)</li> <li>• Primary and Secondary Contacts</li> </ul> </li> <li>2. <b>Verifies</b> the request is complete and meets the requirements of a valid planned WEIM Market Separation per above.</li> <li>3. <b>Notifies</b> the following distribution lists of a forthcoming WEIM Market Separation:         <ul style="list-style-type: none"> <li>MES – Implement WEIM Market Disruption plan             <ul style="list-style-type: none"> <li>• MES</li> <li>• CAISO Market Operator</li> <li>• Power System Technology</li> <li>• Masterfile (<a href="mailto:rdt@caiso.com">rdt@caiso.com</a>)</li> </ul> </li> <li>Implement post-process for Administrative prices             <ul style="list-style-type: none"> <li>• Market Validation</li> <li>• Price Corrections &amp; Settlement Disputes</li> <li>• Market Settlement Production</li> <li>• Customers Services</li> </ul> </li> <li>FYI             <ul style="list-style-type: none"> <li>• Critical Systems</li> <li>• Managers, Real-Time Operations</li> <li>• CAISO Operations Directors Managers</li> </ul> </li> </ul> </li> </ol>

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CAISO Market Operator
<p>1. <b>Notifies</b> all WEIM Entities via Everbridge/MNS and/or phone of forthcoming WEIM Separation. Minimum advanced EverBridge notifications include:</p> <ul style="list-style-type: none"> <li>• One (1) Day Before</li> <li>• The morning of the event (this is to ensure the current Operators on-shift received notice)</li> <li>• One (1) Hour Before</li> </ul> <p>Example EverBridge(s):</p> <p><b>Planned WEIM Market Separation (Prior Day Notification)</b>  <i>XXXX is temporarily suspending their participation in the CAISO WEIM Market tomorrow mm-dd-yyyy @ XX:XX to XX:XX while they are undergoing computer system upgrades. ETSRs associated with XXXX will be locked during this planned work window. For the affected WEIM entity and all adjacent WEIM entities that share ETSR limit tagging responsibilities, please ensure your pre-hour tag MW values are equal to the Base Schedule values. Refer to Operating Procedure 2720, Scenario 3-A for more information.</i></p> <p><b>Planned WEIM Market Separation (Same Day Notification)</b>  <i>Please acknowledge receipt of this message by clicking the hyperlink or pressing 1 on your phone.</i></p> <p><i>Today mm-dd-yyyy at XX:XX PST XXX will be separating from the CAISO Market due to a significant planned transmission outage. The outage return time is on mm-dd-yyyy at XX:XX PST. During XXX's market separation - all ETSRs associated with XXX will be locked and base schedules across those same ETSRs will be zero. The Market Operator will perform all ETSR locks associated with XXX. For the affected WEIM entity and all adjacent WEIM entities that share ETSR limit tagging responsibilities, please ensure your pre-hour tag MW values are equal to the Base Schedule values.</i></p> <p><i>The Market Operator will keep all WEIM entities posted on any status changes associated with the XXX separation. Expect to see a similar communication on mm-dd-yyyy for XXX re-integrating into the CAISO market. Refer to Operating Procedure 2720, Scenario 3-A for more information.</i></p>

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**Additional Coordination Information:**

In the event of a planned WEIM Market Separation, a detailed plan is created for the steps above and performed at specified times. MES will initiate a meeting with the internal business units to review the plan. The following is an "illustration" of such a plan for an event starting at 10:00 and ending at 14:00. Each step must be confirmed by MES before proceeding to the next step.

<b>Time</b>	<b>WEIM Market Interruption Start Time = 10:00</b>	<b>Primary</b>
5:30	Discuss the Deployment plan with Manager of Real-Time Operations, Market Operator and other internal business units.	MES
5:30	Send EverBridge/MNS Message to WEIM participants informing about XXXX Market Separation and might see some interruptions in dispatches from MM/DD/YY XX:XX to XX:XX.	Market Operator
5:30	Open Bridge WEIM Market Separation in Production.	MES or Market Operator
5:50	Validate that WEIM Entity does not submit any STUC bids during disruption time. Reject them (from SIBR UI) if found. This must be done before STUC bids are generated in SIBR at xx:57. Confirm ETSR limit = Base if base schedule is available. If not then ETSR limit = 0 MW.	PSTD/CSS
6:55	Repeat Validation of STUC bids. Confirm ETSR limit = Base if base schedule is available. If not then ETSR limit = 0 MW.	PSTD/CSS
7:55	Repeat Validation of STUC bids. Confirm ETSR limit = Base if base schedule is available. If not then ETSR limit = 0 MW.	PSTD/CSS
8:43	Validate that WEIM Entity does not submit any RT Clean bids during Separation time and if they do be ready to reject them (from SIBR UI).	PSTD/CSS
8:45	Confirm all XXXX SIBR bids are rejected.	PSTD/CSS
8:45	Set the Flex ramp requirements to 0 from WEIM disruption time duration.	MES
8:45	Validate that Base Schedules received successfully and contains XXXX Base Schedules.	MES
8:45	Validate that RT Clean bid received successfully and does not contain bids for XXXX.	MES
8:45	Validate that RTBS ran successfully and all 4 tests for other BAA's except XXXX are reasonable.	MES
8:50	Ensure Market Operator and WEIM Operator coordinate to Lock ETSR's for XXXX for STUC run. Step-down ETSR limits if large flows are occurring.	Market Operator
9:22	Unenforce all Nomogram, flowgates and contingencies for XXXX in all schemas.	MES
9:22	Lock ETSR's for XXXX starting from RTPD 4 run.	Market Operator

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Time	WEIM Market Interruption Start Time = 10:00	Primary
9:45	Monitor RTPD, RTD, RTBS and STUC runs (Market Operator to alert WEIM Entity if non-zero non-base schedule internal dispatches are being received).	MES/Market Operator
9:45	If the disruption is for multiple days, coordinate with the Master File team to update the WEIM Entity participation flag.	MES/MCI
9:52	Lock ETSR's for XXXX before next RTD run (This is to account the ramping).	Market Operator

Time	WEIM Market Interruption End Time = 14:00	Primary
11:45	Verify the flex ramp requirements for flex ramp are non-zero after XXXX comes back to market.	MES
11:45	Verify that XXXX start submitting economic bids.	PSTD/CSS
11:45	Verify that we got the economic bids and Flex ramp for XXXX to the market.	MES
13:23	Market Operator coordinate with XXXX to unlock ETSR's. Unlock in increments to prevent issues.	Market Operator
13:23	Enforce all Nomogram, flowgates and contingencies for XXXX in all schemas.	MES
13:37	Verify with Market Operator that RTD, RTPD, STUC and RTBS are successful and no other issues.	MES

### 3.3.2 Scenario 3-B: Unplanned Market Separation Event

Real-time events are unplanned and are requested by the WEIM Operator in real-time. Planned outages should not result in unplanned real-time events as a result of insufficient notification. This section also includes if the CAISO requires an unplanned real-time market separation. Scenario 3-B has been further defined by Market Isolation: Level 1 and Level 2.

**Tariff reference:** 7.7.6, 7.7.7.

**BPM reference:** 7.10.4.1 and 7.10.4.2.

**Pricing:** Admin Pricing


**Market Operator Tools:**

- Everbridge messaging
- Market Software

**WEIM Tools:**

- PCI

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- Market Software
- EMS

**Possible Communication Types:**

- Phone call between Market Operator and WEIM entities
- IT Bridges
- Everbridge messaging

WEIM Entity Balancing Authority (Includes CAISO BA)
<p>After an immediate and severe event in normal operations as a result of either system conditions, technology failure, resource (people) shortage, facility unavailability or other such severe event:</p> <ol style="list-style-type: none"> <li> <p><b>Assess</b> if the WEIM entity can:</p> <ul style="list-style-type: none"> <li>• <b>Follow</b> market dispatches, startups/shutdowns and configuration transitions, <u>and</u></li> <li>• <b>Support</b> ETSR Imports and Exports</li> <li>• <b>Coordinate</b> with the Market Operator locking ETSR's.  <b>This is a Market Isolation, Level 1</b>, which ideally results in sufficient activity to avoid further mitigation steps.  If further mitigation steps are required, the WEIM may enter a <b>Market Isolation, Level 2</b> (See definitions above for further detail).</li> <li>• <u>Else</u></li> </ul> </li> <li> <p>Upon confirmation no other solution is available, <b>a Market Separation <u>must be requested</u></b>:</p> <ul style="list-style-type: none"> <li>• <b>Call</b> the Market Operator <u>and request</u> a Market Separation.</li> </ul> <p><i><b>Note:</b> A Market Separation must be coordinated with the Market Operator and cannot be declared by the WEIM entity unilaterally.</i></p> </li> <li> <p>Upon direction from the Market Operator,</p> <ul style="list-style-type: none"> <li>• <b>Stop</b> submitting bids as soon as possible.</li> <li>• <b>Disable</b> any auto-bid submittal process, if applicable.</li> <li>• <b>Continue</b> all Base Schedule submittals for bilaterally-contracted energy across all Base and/or Dynamic ETSRs. <ul style="list-style-type: none"> <li>○ WEIM entities should have defined procedures to continue such submittals directly via BSAP or backup API-interfaces in the event of any disruption to their primary 3<sup>rd</sup>-party submittal software.</li> </ul> </li> </ul> </li> <li> <p><b>Confirm</b> the Start time <b>of</b> the Market Separation</p> <ul style="list-style-type: none"> <li>• Market dispatches for base schedules will still be sent.</li> <li>• LMPs will still be calculated for the affected BA, but will NOT be used to settle Uninstructed Imbalance Energy.</li> <li>• Market resources are no longer under market control and the isolated WEIM's procedures for manual control of resources <b>will be followed</b>.</li> </ul> </li> </ol>


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WEIM Entity Balancing Authority (Includes CAISO BA)
<p>5. Additionally, the WEIM Operator <b>must communicate</b> to their upper management and Settlements teams when the real-time Market Separation was declared so that an administrative price may be submitted for Settlement purposes.<sup>1</sup></p> <p>The WEIM entity <b>must submit</b> a CIDI ticket <b>within two (2) business days after</b> the Market Isolation with the following information:</p> <ul style="list-style-type: none"> <li>- Start Date / Time</li> <li>- End Date / Time</li> <li>- Reason for Market Isolation</li> <li>- Admin Prices for each Market Isolation intervals</li> <li>- Primary and Secondary Contacts</li> </ul>

CAISO Market Operator (Includes CAISO BA)
<p>1. <b>Receives</b> a phone call or notification from a WEIM entity requesting WEIM Market Isolation.</p> <ul style="list-style-type: none"> <li>• If a Market Isolation, Level 1 is sufficient, the Market Operator <b>will coordinate</b> the requested ETSR locking and EverBridge messaging.</li> <li>• If a Market Isolation, Level 2 is not sufficient, the RMTO <b>will coordinate</b> a Market Separation based upon the following criteria:</li> </ul> <p>Where an immediate disruption in normal operations as a result of either system conditions, technology failure, resource (people) shortage, facility unavailability or other such severe event resulted in where:</p> <p>The WEIM entity cannot:</p> <ul style="list-style-type: none"> <li>○ Follow market dispatches, startups/shutdowns and configuration transitions, <u>and</u></li> <li>○ Support ETSR Imports and Exports.</li> </ul> <p>2. <b>Verifies with</b> the WEIM entity that the requirements are met for a Market Separation and that no other reasonable, manual workaround is acceptable.</p> <p><b>Note:</b> <i>if the market is solving with reasonable and valid results for all other WEIM entities, including the absence of repeated RTD threshold violations or an unreasonable number of resource shutdowns in RTPD, a Market Separation should be considered. However, if the market is not solving, either failing to with a failed status or extremely unreasonable results due to the magnitude of the system event, after all trouble-shooting efforts have been exhausted, consider going to a market suspension as outlined in CAISO Operating Procedure 2710 Market Disruption – RTM Failure and Suspension.</i></p>


<sup>1</sup> This information is required for Settlement purposes and is added to this Operating Procedure as informational-only to assist the Settlement process.

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CAISO Market Operator (Includes CAISO BA)
<p>3. <b>Acknowledges</b> the exact time that the Market Separation is effective.</p> <p>4. <b>Locks</b> ETSR's in all markets (RTBS/STUC/RTPD/RTD) in a step-down, coordinated fashion with the WEIM entity and all other adjacent and affected entities.</p> <p><i>Note: For the Market Operator, the adjacent ETSR's must also be manually filtered and locked in coordination with the adjacent WEIM(s).</i></p> <p>5. <b>Requests</b> the WEIM entity to stop submitting bids.</p> <p>6. <b>Contact</b> MES and PSTD/CSS to immediately perform the Separation steps in real-time, equal to those described in detail for the planned Separation event including:</p> <ul style="list-style-type: none"> <li>• In coordination with Market Operator and WEIM Operator,           <ul style="list-style-type: none"> <li>◦ <b>Lock</b> all ETSRs if not already done so) for the affected WEIM Entity BA (RTD, RTPD, and STUC).</li> </ul> </li> <li>• <b>Remove/Block</b> WEIM Entity BA bids in SIBR.</li> </ul> <p><i>Note: This does not affect bids in the current hour and potentially the subsequent hour based upon the timing of the market separation.</i></p> <ul style="list-style-type: none"> <li>• <b>Set</b> all WEIM Entity BA Flexible ramping requirements to zero.</li> <li>• <b>Un-enforce</b> all transmission constraints in the affected WEIM Entity BA.</li> </ul> <p><i>Note: The numerous steps to remove bids, remove transmission constraints, and zero-out Flex requirements are performed manually by several IT support teams. The exact timing of when such changes can be implemented depends on several factors including when the unplanned Market Separation is called and the time required to implement such manual changes. Expectations should be set that such changes will take at least 3-4 hours.</i></p> <p>7. <b>Notify</b> all WEIM Entity BAA via Everbridge/MNS and/or phone.</p> <p><i>Example message:</i></p> <p><b>Attention WEIM Entity BAs:</b></p> <p><i>Today mm-dd-yyyy at XX:XX PST XXX will be separating from the CAISO Market due to a significant event. During XXX's market separating - all ETSRs associated with XXX will be locked and base schedules across those same ETSRs will be zero. The Market Operator will perform all ETSR locks associated with XXX. For the affected WEIM entity and all adjacent WEIM entities that share ETSR limit tagging responsibilities, please ensure your pre-hour tag MW values are equal to the Base Schedule values.</i></p> <p><i>The Market Operator will keep all WEIM entities posted on any status changes associated with the XXX separation. Expect to see a similar communication on mm-dd-yyyy for XXX re-integrating into the CAISO market. Refer to Operating Procedure 2720, Scenario 3-B for more information.</i></p>

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CAISO Market Operator (Includes CAISO BA)
<p><b>8. Monitor</b> the remaining WEIM BAs to ensure that the market continues to function as expected.</p> <p><i><b>Note:</b> If after the WEIM entity is isolated from the market, particularly larger WEIM entities, and if the market begins to fail or produce unreasonable results, <b>perform</b> the actions in Scenario 1-B and <b>re-consider</b> a market suspension as described in CAISO Operating Procedure 2710 Market Disruption – RTM Failure and Suspension.</i></p> <p><i><b>Note:</b> This is rare.</i></p> <p><b>9. Log</b> the event details including:</p> <ul style="list-style-type: none"> <li>• Start time of the Market Separation agreed upon and/or communicated to market participants via MNS and EverBridge.</li> <li>• Timings of any previous, advisory, no runs or ADS dispatches instructions to ignore.</li> <li>• Timings of unenforcements provided by MES</li> <li>• WEIM entity name(s)</li> <li>• Copies of all MNS messages</li> <li>• Any other pertinent information</li> </ul> <p><i><b>Note:</b> It is very important for proper Settlement to clearly identify the exact start time of the Market Separation and the timings of the unenforcements of constraints provided by MES.</i></p> <ul style="list-style-type: none"> <li>• In addition, the RMT0 shall also email the SLIC log to the following:           <ul style="list-style-type: none"> <li>○ Market Validation and Quality Analysis - <a href="mailto:MarketValidationandQualityAnalysis@caiso.com">MarketValidationandQualityAnalysis@caiso.com</a>;</li> <li>○ MQS PROD - <a href="mailto:MQSPROD@caiso.com">MQSPROD@caiso.com</a>;</li> <li>○ Price Correction Team - <a href="mailto:pricecorrectionteam@caiso.com">pricecorrectionteam@caiso.com</a>;</li> <li>○ Market Analysis - <a href="mailto:MarketAnalysis@caiso.com">MarketAnalysis@caiso.com</a>;</li> <li>○ Richardson, Mark - <a href="mailto:marichardson@caiso.com">marichardson@caiso.com</a>;</li> <li>○ Cassinelli, Steve - <a href="mailto:scassinelli@caiso.com">scassinelli@caiso.com</a>.</li> </ul> </li> </ul>

CAISO Market Engineering Support (MES)
<p><b>1. Perform</b> the following as soon as possible:</p> <ul style="list-style-type: none"> <li>• <b>Set</b> all Flexible ramping requirements to zero.</li> <li>• <b>Remove</b> the impacted WEIM entity bids.</li> <li>• <b>Un-enforce</b> all transmission constraints in the affected WEIM Entity BA including:           <ul style="list-style-type: none"> <li>○ Flowgates</li> <li>○ Nomograms</li> <li>○ Contingencies</li> </ul> </li> </ul>

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<b>CAISO Market Engineering Support (MES)</b>
<i>Note: For BPA, <b>confirm</b> the Rate-of-Change limits are still enforced.</i>

Once the WEIM Entity BA is no longer in a Market Separation:

<b>CAISO Market Engineering Support (MES) / PSTD / CSS</b>
<ol style="list-style-type: none"> <li>1. <b>Allow</b> SIBR to accept all bids from the affected WEIM Entity BA.</li> <li>2. <b>Re-enforce</b> all transmission constraints in the affected BA back to pre-disruption condition.</li> <li>3. <b>Ensure</b> BA Flexible ramping requirements are non-zero.</li> </ol>

<b>CAISO Market Operator</b>
<ol style="list-style-type: none"> <li>1. <b>Confirm with</b> WEIM entity that they are stable, following market dispatches, their resources are under market control, and are prepared to unlock ETSRs.</li> <li>2. <b>Coordinate</b> with WEIM Operator to unlock ETSR's in a managed fashion to avoid large ETSR swings.</li> <li>3. <b>Notify</b> all WEIM Entity BAA via Everbridge and/or phone.   <i>Example message:</i>   <b>Attention WEIM Entity BAs:</b>  <i>WEIM Entity XXXX is no longer isolated from the WEIM. Normal market operations have resumed.</i> </li> <li>4. <b>Log</b> the event details including:           <ul style="list-style-type: none"> <li>• End time of the Market Isolation and Market Separation agreed upon and/or communicated to market participants via MNS and EverBridge</li> <li>• Timings of any previous, advisory, no runs or ADS dispatches instructions to ignore</li> <li>• WEIM entity name(s)</li> <li>• Copies of all MNS messages</li> <li>• Any other pertinent information</li> </ul> </li> </ol> <p><b>Note:</b> <i>It is very important for proper Settlement to clearly identify the exact end time of the market separation including the re-enforcement of constraints.</i></p>

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## 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:

CAISO Tariff	Section 29.7(j)
CAISO BPM	<a href="#">BPM for Energy Imbalance Market</a> – Section 10.4.1

### 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.**

### Version History


Version	Change	Date
2.1	Updated language in Section 3.3 (highlighted).	5/25/17
2.2	Added PGE (Portland General) to Operationally Affected Parties. Replaced Peak RC with The RC. Replaced NEVP with NVE. Minor format and grammar updates.	2/22/18
3.0	Added definitions of planned and unplanned market separations; Added steps on planned separation including notification to Client Services; Clarified that the same steps for a planned separation must be performed to a real-time unplanned event. Updated Distribution Restriction to “None” and updated Operationally Affected Parties as “Shared with the Public.” Minor format and grammar updates.	10/31/19

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Version	Change	Date
3.1	<p>Section 3.3 Updates: Pulled "Planned Event" out of the task table for visibility. Updated ISO Client Services, Step 3.</p> <p>Added "Unplanned Event" and Task tables for EIM Entity Balancing Authority, ISO Real-Time Market Desk and ISO Market Engineering Support (MES).</p> <p>Added section and steps for a real-time Market Disruption</p> <p>Added note regarding MES confirmation.</p> <p>Minor updates to EIM Market Interruption Tables.</p> <p>Update to ISO Real-Time Market Desk, Step 2, Bullet 1.</p> <p>Minor format and grammar updates.</p>	3/16/20
4.0	<p>Periodic Review - Major Update:</p> <p>Updated with items developed in coordination with EIM Entities in the Market Disruption Workshop.</p> <p>Major rewrite to entire Section 3: Added detailed Scenarios to each Tier with the actions of the RTMO and options of the EIM Operator. Added Tariff/BPM, Pricing, RTMO/EIM Tools and Communication Types details (Highlighted only section headings). Updated ISO References to CAISO. Minor format and grammar updates.</p>	1/06/21
4.1	<p>Purpose Section: Corrected typo.</p> <p>Section 3.1.3, Actions During Event, EIM Entity Balancing Authority, Step 1, bullet 2: updated from expectedly to unexpectedly.</p> <p>Section 3.3.1, EIM Entity Balancing Authority, Step 4: added bullet 3 and sub bullet.</p> <p>Section 3.3.2, EIM Entity Balancing Authority, Step 5: added bullet 3 and sub bullet.</p> <p>Section 5: Minor edit for consistency.</p> <p>Minor punctuation and format edits throughout.</p>	4/22/21
4.2	<p>Added manual actions to avoid postponing a patch in Scenario 1-C.</p>	6/11/21
4.3	<p>Section 3.1.2: Updated Actions When Returning From Event for CAISO Real-Time-Market Desk (RTMO) due to formatting error with partial steps repeating.</p> <p>Minor formatting and grammar updates throughout.</p>	12/01/21
4.4	<p>Updated Scenario 1-D to be named "High Impact Schedule Maintenance/Enhancement." Added change in procedure that DB Model Builds do to not require ETSR limitations by default, unless the Manager, Market Coordination requests after an impact assessment. Changed Customer Service's Notification process in 1-D; Updated Scenario 3-B with lesson-learned items from the BPA Unplanned Market Isolation Simulation.</p>	8/04/22

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Version	Change	Date
	Updated all instances of EIM to WEIM and updated title spelling out Western Energy Imbalance Market (WEIM). Removed history prior to five years.	
4.5	Section 3.1.4: Updated Section 1-D to remove requirement for a Conference Call during DB Model Builds. Section 3.3: Defined Market Isolation Level 1 and Level 2 and Market Separation and corrected typo.	6/09/23
4.6	Updated from Real-Time Market Desk/Real-Time Market Operator (RTMO) and Real-Time Market Desk to Market Operator. Updated from Shift Managers to Managers, Real-Time Operations and Shift Manager to Manager of Real-Time Operations.	9/11/23
4.7	Periodic Review: Section 3.3.2: Added Settlement detail for market isolations with an informational-only footnote. Minor formatting and grammar edits.	1/25/24

## 5. Periodic Review Procedure

### Review Criteria & Incorporation of Changes

There are no specific review criteria identified for this procedure, follow instructions in CAISO Operating Procedure 5510.

### Frequency

Every three (3) Years.

### Appendix

No references at this time.

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