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# Purpose

This document provides guidelines for mitigating Western Energy Market (WEIM) disruptions caused by market process failures, supporting application failures, market application maintenance, communication failures, and reliability events.

# Responsibilities

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| **Market Operator (MO)** | Monitors WEIM software for proper operations and solutions.  Takes action to resolve failures, notify affected WEIM Entity Balancing Authorities. |
| **WEIM Entity Balancing Authority** | Takes action to mitigate issues impacting its Balancing Authority Area |
| **CAISO Balancing Authority** | Takes action to mitigate issues impacting the CAISO Balancing Authority Area (Refer to CAISO Operating Procedure [2710 Market Disruption - RTM Failure and Suspension).](https://www.caiso.com/documents/2710.pdf) |
| **CAISO Market Engineering Support (MES)** | Resolve market software issues that impact WEIM inputs, runs, and results. |
| **Power System Technology Development (PSTD)/Critical Systems Support (CSS)** | Resolve SIBR, MasterFile or other WEIM supporting software issues that impact WEIM inputs, runs, and results. |
| **CAISO Stakeholder Engagement & Customer Experience   “Customer Services”** | Communicates with market participants and coordinates planned Market Disruption requests. |

# Scope/Applicability

##### 2.1 Background

Market disruptions typically occur due to planned maintenance, market process failures, the loss of resources, tools/applications, and communications. These Market disruptions impact the feasibility of participating in the market and can have reliability impacts on WEIM BAAs, thus requiring various actions to maintain reliability criteria and resume normal market operations. A Market disruption cannot be declared by the WEIM entity and must be coordinated with Market Operator

##### 2.2 Scope / Applicability

This procedure outlines various market disruptions and events, along with actions the WEIM participant may take in order maintain their reliability. Additionally, the Market Operator may take actions specifically in Tariff Sections 7.7.6 and/or 29.7(j) to prevent, mitigate, and minimize a market disruption to maintain reliability and restore normal market operations and participation. These actions may include, but are not limited to:

* Using Previous Solutions
* Use Advisory Solutions
* Market Disconnect
* Manually executing market runs
* Put Market processes in manual
* Manually overriding NET\_ITC limits
* Manually overriding ETSR limits
* Locking ETSR

As WEIM entities assess market disruption impacts and take the necessary actions they shall notify the Market Operator of any impacts and actions. In addition, it is advised that no action takes place in WEIM EMS systems without coordinating with neighboring WEIM entities that would be impacted.

**Market Isolation** - Operationally, this has evolved into a an especially 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. Market Isolation can involve one or more, but is not limited to, the following actions:

* Locking ETSRs (this will lock ETSRs to zero or base-schedule)
* Manual Dispatches
* De-activation of market constraints (flowgates and/or contingencies)
* Making resources unavailable or non-participating
* Other steps the WEIM entity follows are for reliability standards and local operating procedures to **maintain** reliability and system conditions.

**Market Separation** – Operationally this is where the WEIM entity has moved past Market Isolation and cannot follow any market-optimized dispatches. Market Separation requires several coordinated steps from CAISO IT teams to complete and may require 3-4 hours to implement if unplanned. There are several reasons a full Market Separation may be required including, but not limited to:

* The inability to receive or process dispatches (technology issues)
* The inability to staff (human resource issues)
* Electricity issues (severe network failure)
* The inability to monitor (operations facility issues).

# Procedure Detail

##### 3.1 Market Disruption without Isolation

Market process failure(s), planned maintenance, events impacting market application resources (internet, physical location, etc.), auxiliary tool failures (SIBR/BSAP, EMS, ADS, etc.), and any other event that impacts the ability of a market entity or entities to feasibly participate in the WEIM. The event may also be reliability based in nature such as a BES event, natural disaster, BAAL control or operational requirements. During these disruptions, the WEIM and/or Market Operator choose not to isolate an impacted market participant.

Examples of such events are:

* Previous solution is broadcasted due to an invalid market solution or threshold exceedance.
* Market Process failure of RTD, RTPD, STUC, BSCH where the market fails to solve.
  + An advisory solution may be broadcasted for the impacted market run.
* The market process solved, but the broadcasting of the results to downstream systems fails or were blocked.
* The market process was placed in manual to prevent the process from running and causing a foreseen issue.
* A participant’s Inputs are creating a bad or invalid market solution they may not be able to follow.
* The market is solving with a valid solution, but the participant(s) are not receiving the market instructions or unable to follow them.

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| **Market Operator** |
| 1. **Assess** market disruption impacts and **coordinate** with the Service Desk to **deploy** necessary Support to troubleshoot. 2. **Take** necessary actions to **minimize** and **resolve** disruption and **log** event details. 3. **Strive to notify** WEIM entities **via** Everbridge and/or phone. |

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| **WEIM Operator** |
| 1. **Assess** market disruption impacts, **take** necessary actions, and **notify** the Market Operator of any impacts and actions. 2. **Follow** reliability standards and local operating procedures to **maintain** reliability and system conditions.   ***Note:*** *Please refer to CAISO Operating Procedure 2720B Market Disruption Settlements Notification for necessary actions after the event.* |

##### 3.2 Market Disruption with Isolation

The WEIM and/or Market Operator choose to isolate an impacted market participant(s) due to a market process failure(s), planned maintenance, events impacting market application resources (e.g., Internet, physical location, etc.), auxiliary tool failures (e.g., SIBR/BSAP, EMS, ADS, etc.), and any other event that impacts the ability of a market entity or entities to feasibly participate in the WEIM. The event may also be reliability based in nature, such as a BES event, natural disaster, BAAL control, or operational requirements.

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| **Market Operator** |
| 1. **Assess** market disruption impacts and **coordinate** with the Service Desk to **deploy** necessary Support to troubleshoot. 2. **Enforce** net transfer constraints (e.g., Lock ETSRs, Limit ITCs). 3. **Take** necessary actions to **minimize** and **resolve** disruption and **log** event details. 4. **Notify** WEIM entities **via** Everbridge and/or phone. |

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| **WEIM Operator** |
| 1. **Assess** market disruption impacts, **take** necessary actions, and **notify** Market Operator of any impacts and actions. 2. **Enforce** net transfer constraints (e.g., Limit ITCs, Limit Transmission profile). 3. **Follow** reliability standards and local operating procedures to **maintain** reliability and system conditions.   ***Note:*** *Please refer to CAISO Operating Procedure 2720B Market Disruption Settlements Notification for necessary actions after the event.* |

##### 3.3 Market Disruption with Separation

Market Separation Event – planned or unplanned – where a disruption is anticipated to last more than 2 hours and the Market Operator will coordinate actions specified in Tariff Sections 7.7.6, 29.7(j) (e.g., removal or bypassing of economic bids) and isolate an impacted WEIM participant.

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

| **Type** | **Notice Requirements** |
| --- | --- |
| Planned Market Separation | Planned Market Separation events must be requested at least five (5) business days in advance via a CIDI ticket. |
|
| Unplanned Market Separation | 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 because of insufficient notification.* |

**Planned Separation:**

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| **Market Operator** |
| 1. **Validate/coordinate** planned separation with WEIM entity. 2. **Notify** WEIM entities **via** Everbridge and/or phone. 3. **Assess** market disruption impacts and **coordinate** with the Service Desk to **deploy** necessary Support to ensure planned separation is conducted. 4. **Take** necessary actions to **minimize** and **resolve** disruption and **log** event details. |

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| **WEIM Operator** |
| 1. **Validate/coordinate** planned separation with Market Operator. 2. **Assess** market disruption impacts, **take** necessary actions, and **notify** Market Operator of any impacts and actions. 3. **Follow** reliability standards and local operating procedures to **maintain** reliability and system condition.   ***Note:*** *Please refer to CAISO Operating Procedure 2720B Market Disruption Settlements Notification for necessary actions after the event.* |

**Unplanned Separation:**

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| **Market Operator** |
| 1. **Assess** market status and **communicate** with impacted WEIM participant to **declare** market disruption and **coordinate** actions. 2. **Coordinate** with Service Desk to **deploy** necessary Support to troubleshoot issues and begin market separation. 3. **Take** necessary actions to **minimize** and **resolve** disruption and **log** event details. 4. **Notify** WEIM entities **via** Everbridge and/or phone. |

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| **WEIM Operator** |
| 1. **Assess** market status and **notify** the Market Operator of market impacts and issues. 2. **Coordinate** with the Market Operator on market disruption actions and market separation. 3. **Follow** reliability standards and local operating procedures to **maintain** reliability and system condition.   ***Note:*** *Please refer to CAISO Operating Procedure 2720B Market Disruption Settlements Notification for necessary actions after the event.* |

##### 3.4 Market Disruption with Market Suspension

Market Suspension is a market disruption with significant impacts to the market footprint and participating entities resulting in the Market Operator purposefully stopping (i.e., suspending) the markets for all WEIM participants to prevent, contain, or correct a System Emergency or prolonged widespread event where the market is unable to execute reliably for the WEIM footprint for an extended period of time. In the event of a Real-Time Market suspension, Administrative Prices will be applied in accordance with Tariff Section 7.7.9(d) and 7.7.9(e).

| **Market Operator** |
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| 1. **Assess** market status and **communicate** with impacted WEIM participants to **declare** market disruption and **coordinate** actions. 2. **Coordinate** with the Service Desk to **deploy** the necessary Support to troubleshoot issues and conduct the suspension. 3. **Take** necessary actions to **minimiz**e and **resolve** disruption and **log** event details. 4. **Notify** WEIM entities **via** Everbridge and/or phone. |

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| **WEIM Operator** |
| 1. **Assess** market status and **notify** the Market Operator of market impacts and issues. 2. **Coordinate** with the Market Operator on market disruption actions and market suspension process. 3. **Follow** reliability standards and local operating procedures to **maintain** reliability and system condition. |

# Supporting Information

##### Operationally Affected Parties

Shared with the Public and on the WEIM Portal.

##### References

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

|  |  |
| --- | --- |
| CAISO Tariff | Section 29.7(j),7.7.6 |

##### 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:

|  |  |
| --- | --- |
| **Isolation** | The enforcement of net transfer constraints (e.g., Lock ETSRs, Limit ITCs, Limit transmission profile, Override ETSRs) by the WEIM participant or Market Operator that results in zero net import or export MWs across the market constraints. |

##### Version History

| **Version** | **Change** | **Date** |
| --- | --- | --- |
| 3.1 | Section 3.3 Updates: Pulled "Planned Event" out of the task table for visibility. Updated ISO Client Services, Step 3.  Added "Unplanned Event" and Task tables for EIM Entity Balancing Authority, ISO Real-Time Market Desk, and ISO Market Engineering Support (MES). Added section and steps for real-time Market Disruption. Added note regarding MES confirmation.  Minor updates to EIM Market Interruption Tables. Update to ISO Real-Time Market Desk, Step 2, Bullet 1. Minor format and grammar updates. | 3/16/20 |
| 4.0 | Periodic Review - Major Update: Updated with items developed in coordination with EIM Entities in the Market Disruption Workshop.  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. | 1/06/21 |
| 4.1 | Purpose Section: Corrected typo.  Section 3.1.3, Actions During Event, EIM Entity Balancing Authority, Step 1, bullet 2: Updated from expectedly to unexpectedly.  Section 3.3.1, EIM Entity Balancing Authority, Step 4: added bullet 3 and sub bullet.  Section 3.3.2, EIM Entity Balancing Authority, Step 5: added bullet 3 and sub bullet.  Section 5: Minor edit for consistency.  Minor punctuation and format edits throughout. | 4/22/21 |
| 4.2 | Added manual actions to avoid postponing a patch in Scenario 1-C. | 6/11/21 |
| 4.3 | 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.  Minor formatting and grammar updates throughout. | 12/01/21 |
| 4.4 | Updated Scenario 1-D to be named “High Impact Schedule Maintenance/Enhancement.” Added change in procedure that DB Model Builds do 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. Updated all instances of EIM to WEIM and updated title spelling out Western Energy Imbalance Market (WEIM). Removed history prior to five years. | 8/04/22 |
| 4.5 | Section 3.1.4: Updated Section 1-D to remove the 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 |
| 4.8 | Section 3.1.1, Actions When Returning from Event, WEIM Entity BA: Corrected "Note" under Item 4 under first bullet.  Minor formatting and grammar edits. | 8/15/24 |
| 5.0 | Complete rewrite to simplify the steps for Isolation, Separation and Suspension during Market Disruptions as well as creating Appendices 2720A and 2720B for communications and settlements expectations. (Changes not highlighted due to the extent of changes). Minor formatting and grammar edits and removed history prior to five years. | 12/08/25 |

# Periodic Review Procedure

##### Review Criteria & Incorporation of Changes

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

##### Frequency

Every three (3) Years.

# Appendix

2720A Market Disruption Communications

2720B Market Disruption Settlements Notification