

 <b>California ISO</b>	<b>Operating Procedure</b>	<b>Procedure No.</b>	4420
		<b>Version No.</b>	14.0
		<b>Effective Date</b>	5/01/2022
<b>System Emergency</b>		<b>Distribution Restriction:</b> <b>None</b>	

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## Purpose

This procedure outlines the steps that may be taken to prevent a System Emergency and to stabilize the system should a System Emergency occur.

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## 1. Responsibilities

<b>CAISO Shift Manager</b>	Directs timely and appropriate Real-Time actions necessary to ensure reliable operation of the CAISO Controlled Grid and Balancing Authority Area.
<b>CAISO System Operator</b>	Ensures reliable operation of the CAISO Controlled Grid and Balancing Authority Area.
<b>Participating Transmission Owner (PTO)</b>	Maintain a single point of contact with CAISO through their Power Grid Operations Centers and are subject to Operating Instructions issued by CAISO.
<b>Utility Distribution Company (UDC)</b>  <b>Metered Subsystem (MSS) Company</b>	Comply with all operating instructions from CAISO concerning the management of System Emergencies, as per the CAISO Tariff.
<b>Scheduling Coordinator (SC)</b> <b>Participating Generator (PG)</b>	Follow all operating instructions and is subject to operating instructions issued by CAISO during a System Emergency and any circumstances in which CAISO considers that a System Emergency is imminent, anticipated or threatened, as per the CAISO Tariff.

## 2. Scope/Applicability

### 2.1. Background

Power system disturbances typically occur due to the loss of generating equipment, transmission facilities, or unexpected load changes. These disturbances may affect the reliable operation of the California ISO (CAISO) Controlled Grid, CAISO Balancing Authority Area, and the WECC interconnected Bulk Electric System. Severe system disturbances generally result in critically loaded transmission facilities, significant frequency and voltage deviations, high or low voltage conditions, or stability problems.

### 2.2. Scope/ Applicability

This procedure outlines the steps that may be taken to prevent a System Emergency and to stabilize the system should a System Emergency occur. A System Emergency can consist of a Transmission Emergency or an Energy Emergency, and may be sudden or progressive in nature. To prevent a System Emergency and to maintain system reliability, CAISO may issue a transmission emergency, restricted maintenance operations, **Energy Emergency Alert (EEA) Watch, Energy Emergency Alert (EEA) 1, 2, or 3.** CAISO will notify its Reliability Coordinator, Market Participants, load serving entities in its area and neighboring areas,

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regarding current and projected conditions, when anticipating or experiencing an operating Emergency.<sup>1</sup>

### 3. Procedure Detail

#### 3.1. Order of Steps

The order of the actions taken may vary due to system conditions or other operational issues. It may be necessary to skip actions due to the severity of the situation. To the extent possible, and when prudent, actions that were skipped may be implemented at a later time or date.

#### 3.2. CAISO Communications Regarding Forecasted System Conditions

CAISO Grid Operations will strive to communicate forecasted system conditions with as much time as possible through a variety of methods. These include, but not limited to, D+7 to D+2 resource adequacy forecast published on CAISO public website, heat wave bulletin, and other media **communications**. System conditions can rapidly change in real-time and any forecasted conditions are estimated based on available data.

#### 3.3. Flex Alert

Flex Alerts are part of a consumer educational and alert program for voluntary conservation of electricity during heat waves and other challenging grid conditions.

For more information visit <http://www.flexalert.org>.

A Flex Alert is most effective when issued a day or more in advance of when conservation is needed so consumers can adjust their electricity usage ahead of time (i.e., adjusting thermostats before leaving for work).

However, grid emergencies can happen suddenly, so if conservation is needed, CAISO can issue a Flex Alert with little or no advance notification. When possible, Flex Alerts are targeted to the regional or local areas where the system is stressed.

**Note:** Any of the following Day-Ahead conditions could trigger a Flex Alert:

- Prior to IFM, based on:
  - D+2 results indicate deficiency of ~500 MW or more
  - Peak Load Forecast above 45,000 MW

<sup>1</sup> EOP-011-1 R1.2.1, R2.2.1

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- **After RUC results reviewed:**
  - **High Priority Export Awards Curtailed in RUC classified by self-schedule type PT (not related to congestion) and/or RUC Under-supply with Forecast Adjustment margins small or infeasibilities (refer to Day-Ahead Summer Report posted to [www.caiso.com](http://www.caiso.com) > Market & Operations > Reports and Bulletins > Market performance reports > Day-ahead daily market watch and summer reports).**
- **Other considerations:**
  - **Potential for Gas curtailment**
  - **Ongoing grid issue (Fire, Natural Disaster)**
  - **Variable or uncertain temperature forecast**
  - **Potential for cloud cover with significant solar impact**

<b>CAISO Grid Operations &amp; CAISO Communications</b>
<ol style="list-style-type: none"> <li>1. Grid Operations management will <b>determine</b> if a Flex Alert is <b>needed</b> given the planned or current operating conditions.</li> <li>2. If possible, Grid Operations will <b>notify</b> CAISO Corporate Communications at least an hour prior to issuing a Flex Alert.</li> <li>3. <b>Flex Alert</b> notice is <b>issued</b> by Shift Manager or their designee <b>via the AWE tool</b>.</li> <li>4. CAISO Corporate Communications will <b>issue</b> a Flex Alert related communications using available communications channels (Press release, social media, web site, email, etc.).</li> <li>5. <b>Notify</b> the Emergency Response Coordinator and others as needed.</li> <li>6. <b>CAISO off-shift management will coordinate</b> with the ELRP Board (Emergency Load Reduction Program) to <b>determine</b> if the IOUs are activating ELRP for the period 16:00 – 21:00 PPT, <b>and will provide</b> the MW by IOU to the Shift Manager.</li> </ol>

<b>Utilities</b>
<ol style="list-style-type: none"> <li>1. ELRP Board representatives <b>notify</b> CAISO Grid Operations Management if activating ELRP <b>and provide</b> estimated total MW within 1 hour of event notice being issued.</li> </ol> <p><b>Note:</b> <i>If activating, the utility DR programs will provide MW estimates on their updated Daily DR Reports.</i></p>

### 3.4. Restricted Maintenance Operations

Restricted maintenance operations apply to all pre-scheduled Outages and/or any planned maintenance.

Restricted maintenance operations apply to PTO Control Centers, Scheduling Coordinators and Participating Generators, for the hours identified in the notice. Restricted maintenance operations are applied for the shortest duration necessary to meet the reliability concern.

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CAISO maintains the authority to cancel or postpone any/or all work to preserve overall System Reliability, both prior to Real-Time and during Real-Time operations timeframes. CAISO will declare restricted maintenance operations when deemed necessary.

CAISO System Operator
<ol style="list-style-type: none"> <li>1. <b>Issue</b> a Restricted Maintenance Operations or a Generation Restricted Maintenance Operations Notice using the AWE Notification System.</li> <li>2. <b>Notify</b> the RC by phone.</li> <li>3. <b>Notify</b> PTOs and other affected Entities as needed.</li> <li>4. <b>Notify</b> the “ALL RELIABILITY” <b>and Market</b> distribution lists via the Grid Messaging System (GMS).</li> <li>5. <b>Notify</b> CAISO Emergency Response Coordinator (ERC) regarding system conditions.</li> <li>6. <b>Consider</b> postponing outages or returning equipment to service early.</li> <li>7. <b>Cancel</b> outages as needed to maintain system reliability.</li> <li>8. <b>Only approve</b> outages that will have no negative or potential negative effect on system reliability.</li> <li>9. <b>Utilize</b> Exceptional Dispatch to mitigate as necessary.</li> <li>10. <b>Utilize</b> Manual Dispatch on the Interties to mitigate as necessary.</li> <li>11. <b>Continue</b> to monitor the system.</li> <li>12. If conditions deteriorate, <b>consider</b> issuing a Transmission Emergency, or <b>Energy</b> Emergency notice.</li> <li>13. When conditions allow, <ul style="list-style-type: none"> <li>• <b>Back out</b> of each step performed,</li> <li>• <b>Notify</b> the RC by phone <b>and</b></li> <li>• <b>Terminate</b> the Restricted Maintenance Operations.</li> </ul> </li> <li>14. <b>Refer</b> to other CAISO Operating Procedure 4420 System Emergency attachments as needed.</li> </ol>

Scheduling Coordinator (SC), Participating Generator (PG), Participating Transmission Owner (PTO) Control Centers
<ol style="list-style-type: none"> <li>1. <b>Obtain</b> permission from CAISO to proceed with pre-scheduled or planned work, regardless of whether prior approvals were obtained from CAISO.</li> <li>2. For work, which may be allowed during an RMO, <b>refer</b> to CAISO Operating Procedure <a href="#">4420E Allowable Transmission Maintenance Activities During Restricted Maintenance Operations</a>.</li> </ol> <p><b>Note:</b> Outages postponed due to the issuance of a restricted maintenance operations notice may be considered for re-scheduling outside of the previously pre-scheduled Outage hours and/or outside of the hours of restricted maintenance operations.</p>

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### 3.5. Transmission Emergency

CAISO may declare a Transmission Emergency for any event that threatens, harms, or limits the capabilities of any element of the transmission grid and overall grid reliability. Declaration of a Transmission Emergency may be caused by events including but not limited to:

- Transmission line/path overloads or loss (including exceeding Interconnection Reliability Operating Limits (IROL) and System Operating Limits (SOL))
- Transformer overloads or loss
- Instability
- Frequency deviations or decay
- Voltage that exceeds or falls below predetermined limits
- Fires, earthquake, severe weather, sabotage, civil unrest, terrorism

The CAISO System Operator may take, but is not limited to, the following actions in any order needed, and to the extent necessary, to prevent, mitigate or otherwise manage a System Emergency:

CAISO System Operator
<ol style="list-style-type: none"> <li>1. <b>Issue</b> a Transmission Emergency notice using the AWE Notification System.</li> <li>2. <b>Notify</b> the RC by phone; include current and projected conditions.</li> <li>3. <b>Notify</b> PTOs and other affected entities as needed.</li> <li>4. <b>Notify</b> the “ALL RELIABILITY” and Market distribution lists via the GMS.</li> <li>5. <b>Consider</b> postponing outages or returning equipment to service early.</li> <li>6. <b>Cancel</b> outages as needed to maintain system reliability.</li> <li>7. <b>Only approve</b> outages that will have no negative or potential negative effect on system reliability.</li> <li>8. <b>Exhaust</b> available resources (except for Spin/Non-Spin) through the market.</li> <li>9. <b>Utilize</b> Exceptional Dispatch to mitigate as necessary.</li> <li>10. <b>Utilize</b> Manual Dispatch on the Interties to mitigate as necessary.</li> <li>11. <b>Enable</b> RDRRs in the market, globally or by region as needed, to make them available for dispatch through the market.</li> <li>12. <b>Notify</b> the PTO Transmission Control Centers that RDRR resources have been enabled and available for dispatch through the market.</li> <li>13. <b>Consider</b> if use of one or more State Power Augmentation Program (SPAP) resources could help mitigate a system wide or local area Transmission Emergency. <ul style="list-style-type: none"> <li>• If one or more SPAP generators can be utilized, <b>issue</b> Exceptional Dispatch instructions to the SCs each generator.</li> </ul> </li> <li>14. If 100 MW or more of emergency Demand Response is dispatched, <ul style="list-style-type: none"> <li>• <b>Notify</b> CAISO's ERC to file DOE OE-417.</li> </ul> </li> </ol> <p><b>Note:</b> If the ERC is unavailable, CAISO Shift Manager or designee has to file the OE-417. Refer to CAISO Operating Procedure <a href="#">4110A DOE, NERC and WECC Significant Event Reporting Requirements</a>.</p>

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CAISO System Operator
<p>15. <b>Conduct</b> a blast call with the PTOs Transmission Control Center (PG&amp;E, SCE, and SDG&amp;E) to <b>quantify</b> available Demand Response and UDC Interruptible Load (Non-Firm) programs, <b>and notify</b> the PTOs of possible implementation.</p> <p>16. <b>Call on</b> out-of-market Demand Response programs and UDC Interruptible Load (Non-Firm) programs (amount varies). This requires up to a 60-minute notification.</p> <ul style="list-style-type: none"> <li>• <b>Refer</b> to CAISO Operating Procedure <a href="#">4510 Load Management Programs and Underfrequency Load Shedding</a> and its attachments.</li> </ul> <p>17. <b>Reduce</b> participating pump load as available.</p> <p>18. <b>Utilize</b> Operating Reserve (Spinning and Non-Spinning Reserve).</p> <p>19. <b>Dispatch</b> effective Legacy RMR Units <b>and</b></p> <p>20. <b>Notify</b> market participants accordingly.</p> <p>21. If Legacy RMR units are assigned Operating Reserve,</p> <ul style="list-style-type: none"> <li>• <b>Send</b> the following message:</li> </ul> <p style="padding-left: 40px;"><i>“The CAISO is currently utilizing Legacy RMR units to provide additional Operating Reserve.”</i></p> <p>22. <b>Request</b> effective available Energy from MSS resources, if necessary.</p> <p>23. <b>Utilize</b> Firm Load interruption, if necessary.</p> <p>24. <b>Issue</b> a Transmission Emergency – Firm Load Interruptions notice using the AWE Notification System.</p> <p>25. <b>Advise</b> PTOs that they can take local control of Generating Resources to prevent islanding or to stabilize islands.</p> <ul style="list-style-type: none"> <li>• This may require PTOs to <b>suspend</b> the FERC standard of conduct.</li> </ul> <p>26. When conditions stabilize,</p> <ul style="list-style-type: none"> <li>• <b>Back out</b> of each step performed,</li> <li>• <b>Notify</b> the RC by phone, the “ALL RELIABILITY” <b>and Market</b> distribution lists via the GMS, <b>and</b></li> <li>• <b>Terminate</b> the Transmission Emergency – Firm Load Interruptions and the Transmission Emergency.</li> </ul>

### 3.6. Energy Emergencies within CAISO Balancing Authority Area

CAISO System Operators will take appropriate steps during Energy Emergencies as described below.

#### 3.6.1. EEA Watch

CAISO issues an Energy Emergency Alert Watch (EEA Watch) notice (formerly known as an “Alert” notice) by 15:00 PPT the day before when the Day-Ahead analysis is forecasting that one or more hours may be energy deficient. Reference the Day-Ahead Summer report “RUC under-supply” column for indications that system conditions may indicate EEA Watch is necessary.

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**Note:** EEA Watch can be issued after 15:00 or day of if a sudden onset event occurs.

The CAISO System Operator may take, but is not limited to, the following actions in any order needed:

CAISO System Operator
<ol style="list-style-type: none"> <li>1. <b>Notify</b> the RC by phone <u>and discuss</u> potential EEA Watch declaration.</li> <li>2. <b>Issue</b> an EEA Watch notice <b>using</b> the AWE Notification System.   <b>Note:</b> AWE notices are also sent via the MNS system and the message indicates the need for conservation and additional bids into the market. Refer to examples in <a href="#">4420C Emergency Notice Templates</a>.</li> <li>3. <b>Issue</b> a “FlexAlert” notice using the AWE Notification System.   <b>Note:</b> ERC will notify CAISO Communications.   <b>Note:</b> a Flex Alert should always be issued in conjunction with an EEA Watch.</li> <li>4. <b>Evaluate</b> need for Restricted Maintenance Operations (RMO).</li> <li>5. <b>Notify</b> “ALL RELIABILITY” and Market distribution lists via the GMS.</li> <li>6. <b>Notify</b> ERC regarding system conditions.</li> <li>7. <b>Conduct</b> a blast call with PTOs and, if needed, all UDC/MSS entities.</li> <li>8. CAISO off-shift management will <b>coordinate</b> with the ELRP Board (Emergency Load Reduction Program) to <b>determine</b> if the IOUs are activating ELRP for the period 16:00 – 21:00 PPT, <u>and will provide</u> the MW by IOU to the Shift Manager.</li> <li>9. <b>Coordinate</b> with CAISO off-shift management to <b>issue</b> a System Status Update email to inform affected entities of detailed Operating Plan for <u>next day</u>.</li> </ol>

Utilities and Scheduling Coordinators
<ol style="list-style-type: none"> <li>1. ELRP Board representatives <b>notify</b> CAISO Grid Operations Management if activating ELRP <u>and provide</u> estimated total MW within 1 hour of event notice being issued.   <b>Note:</b> If activating, the utility DR programs will provide MW estimates on their updated Daily DR Reports.</li> <li>2. When the EEA Watch notice is received, <b>prepare</b> participating customers for a potential EEA emergency on the next day for the specified time period in the EEA Watch notice.</li> </ol>

### 3.6.2. EEA 1

CAISO issues an Energy Emergency Alert 1 (EEA 1) notice (formerly known as a “Warning” notice) when the real-time analysis reflects that during one or more hours all available

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resources are in use and/or are committed to be in use.<sup>2</sup> CAISO will request the Reliability Coordinator declare an EEA 1.

The CAISO System Operator may take, but is not limited to, the following actions in any order needed, and to the extent necessary, to prevent, mitigate or otherwise manage a System Emergency:

CAISO System Operator
<ol style="list-style-type: none"> <li>1. <b>Notify</b> the RC by phone of the system conditions <u>and request</u> EEA 1 declaration.</li> <li>2. <b>Issue</b> an EEA 1 notice <b>using</b> the AWE Notification System.</li> <li>3. <b>Issue/ update</b> a Flex Alert notice <b>using</b> the AWE Notification System, as needed.</li> </ol> <p><i>Note: AWE notices are also sent via the MNS system and the message indicates the need for conservation and additional bids into the market. Refer to examples in <a href="#">4420C Emergency Notice Templates</a>.</i></p> <ol style="list-style-type: none"> <li>4. <b>Notify</b> “ALL RELIABILITY” and Market distribution lists via the GMS.</li> <li>5. <b>Conduct</b> a blast call with the PTOs.</li> <li>6. <b>Notify</b> the ERC of system conditions, Flex Alert notices, and any need to file DOE OE-417 or NERC Event Reporting Form.</li> <li>7. CAISO off-shift management will <b>coordinate</b> with the ELRP Board (Emergency Load Reduction Program) to determine ELRP MW activated for the period 16:00 – 21:00 PPT, <u>and will provide</u> the MW by IOU to the Shift Manager.</li> <li>8. <b>Coordinate</b> with CAISO off-shift management to issue System Status Updates email to affected entities as needed.</li> </ol>

Utilities and Scheduling Coordinators
<ol style="list-style-type: none"> <li>1. ELRP Board representatives <b>notify</b> CAISO Grid Operations Management if activating ELRP <u>and provide</u> estimated total MW within 1 hour of event notice being issued.</li> </ol> <p><i>Note: If activating, the ELRP Board DR programs will provide MW estimates on their updated Daily DR Reports.</i></p>

### 3.6.3. EEA 2

CAISO issues an Energy Emergency Alert 2 (EEA 2) notice (formerly known as “Warning” and “Stage 1” notices) when all available resources are in use and CAISO will no longer able to meet expected energy requirements. During an EEA 2 CAISO is activating its emergency demand response (non-firm load) programs.<sup>3</sup> CAISO is still able to maintain minimum Contingency Reserve requirements.

<sup>2</sup> EOP-011-1 Attachment 1, Section B, 1

<sup>3</sup> EOP-011-1 Attachment 1, Section B, 2.

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The CAISO System Operator may take, but is not limited to, the following actions in any order needed, and to the extent necessary, to prevent, mitigate or otherwise manage a System Emergency:

CAISO System Operator
<ol style="list-style-type: none"> <li>1. <b>Notify</b> the RC by phone <b>and request</b> the RC declare an EEA 2.</li> <li>2. <b>Issue</b> an EEA 2 notice <b>using</b> the AWE Notification System.<sup>4</sup></li> <li>3. <b>Issue/ update</b> a Flex Alert notice <b>using</b> the AWE Notification System, as needed.</li> </ol> <p><b>Note:</b> AWE notices are also sent via the MNS system and the message indicates the need for conservation and additional bids into the market. Refer to examples in <a href="#">4420C Emergency Notice Templates</a>.</p> <ol style="list-style-type: none"> <li>4. Globally or by region, <b>enable</b> RDRRs to make them available for dispatch through the market, or force if necessary.</li> <li>5. <b>Notify</b> the PTO Transmission control centers that RDRR resources have been enabled and are available for dispatch through the market.</li> <li>6. If 100 MW or more of emergency Demand Response is dispatched, <ul style="list-style-type: none"> <li>• <b>Notify</b> CAISO's ERC to file DOE OE-417.</li> </ul> <p><b>Note:</b> If ERC is unavailable, CAISO Shift Manager or designee has to file the OE-417. Refer to CAISO Operating Procedure <a href="#">4110A DOE NERC, and WECC Significant Event Reporting Requirements</a>.</p> </li> <li>7. <b>Exhaust</b> available resources (except for Operating Reserve) through the market.</li> <li>8. <b>Use</b> Exceptional Dispatch, as needed.</li> <li>9. <b>Reduce</b> participating pump load as available.</li> <li>10. <b>Instruct</b>, as necessary, any storage resources that are consuming energy to <b>reduce power consumption</b>.</li> <li>11. <b>Dispatch</b>, as necessary, available unloaded generation Capacity without RT Energy Bids. This can include Exceptional Dispatch on a resource subject to CPM designation.</li> <li>12. <b>Dispatch</b> excess Operating Reserves, including contingent only reserves, as necessary while maintaining required Contingency Reserves.</li> <li>13. <b>Dispatch</b> Legacy RMR Units <b>and</b></li> <li>14. <b>Notify</b> market participants of the use of Legacy RMR for system needs.</li> <li>15. If Legacy RMR units are assigned AS, <ul style="list-style-type: none"> <li>• <b>Send</b> the following MNS message: <p style="text-align: center;"><i>“The CAISO is currently utilizing Legacy RMR units to provide additional Ancillary Services”.</i></p> </li> </ul> </li> <li>16. If Legacy RMR resources are dispatched for energy to serve load, CAISO <b>must send</b> the following MNS message prior to dispatching the resource: <p style="text-align: center;"><i>“The CAISO is going to dispatch Legacy RMR resources to meet forecast demand, the expected time of dispatch is from XX:XX to XX:XX”.</i></p> </li> </ol>

<sup>4</sup> EOP-011-1 Attachment 1, Section B, 2.1

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<b>System Emergency</b>		<b>Distribution Restriction:</b> <b>None</b>

CAISO System Operator
<p>17. <b>Conduct</b> a blast call with the PTOs Transmission Control Center (PG&amp;E, SCE, and SDG&amp;E) to quantify <b>out-of-market Load Modifying Demand Response (LMDR)</b> and UDC Interruptible Load (Non-Firm) programs.</p> <p>18. <b>Notify</b> PTOs and other applicable parties to dispatch <b>out-of-market Load Modifying Demand Response (LMDR)</b> programs and UDC Interruptible Load (Non-Firm) programs (amount varies). This <b>may</b> require up to a 60-minute notification.</p> <p>19. <b>Refer</b> to CAISO Operating Procedure <a href="#">4510 Load Management Programs and Underfrequency Load Shedding</a> and its attachments.</p> <p>20. <b>Coordinate</b> with CAISO off-shift management to <b>issue</b> System Status Updates email to affected entities as needed.</p> <p>21. <b>Canvas</b> other entities and Balancing Authorities for available Manual Dispatch Energy/Capacity on interties.</p> <p>22. <b>If not already communicated, request</b> the RC to <b>issue</b> a notice that Emergency Assistance may be required by CAISO.</p> <p>23. <b>Maintain</b> hourly updates to the RC until <b>EEA 0 – Termination</b> is issued.<sup>5</sup></p> <p>24. <b>Evaluate</b> the impacts of any in-progress Time Error Correction <b>and</b></p> <p>25. <b>Request</b> the RC to terminate Time Error Correction if it is contributing to resource deficiency.</p> <p>26. <b>Notify</b> the “ALL RELIABILITY” <b>and Market</b> distribution lists via the GMS.</p> <p>27. <b>Request</b> that other Balancing Authorities determine the amount of assistance they are able to provide.</p> <p><b>Note:</b> <i>If there are 2+ consecutive days of <b>EEA 1, 2 or 3 events</b>, ERC will <b>coordinate</b> with CalOES to request load reduction at the Ports for the time period in the <b>EEA 1, 2 or 3 notices</b>.</i></p> <p>28. <b>Coordinate</b> with CAISO off-shift management to <b>issue</b> a System Status Update email to <b>inform</b> affected entities as needed.</p>

<sup>5</sup> EOP-011-1 Attachment 1, Section B, 2.2

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Utilities and Scheduling Coordinators
<p>1. When the EEA 2 notice is received, SCs will <b>schedule</b> their SPAP generators to run for the time period in the EEA 2 declaration notice.</p> <p><b>Note:</b> For SPAP resources which are located in an adjacent Balancing Authority area, the native BA will coordinate with CAISO to verify that transmission is available at the intertie. CAISO and the native BA will <b>coordinate</b> tagging and manual market award.</p> <p>2. When the EEA 2 notice is received, utilities will <b>direct</b> participating customers to utilize generators approved for emergency use and to prepare to utilize Emergency Demand Response Programs during the specified time period in the EEA 2 notice.</p>

### 3.6.4. EEA 3

CAISO will issue an Energy Emergency Alert 3 (EEA 3) notice (formerly known as “Stage 2” and “Stage 3” notices) when CAISO is unable to meet minimum Contingency Reserve requirements and firm load interruption is imminent or in progress.

The CAISO System Operator may take, but is not limited to, the following actions in any order needed, to the extent necessary, to prevent, to mitigate, or otherwise manage a System Emergency:

CAISO System Operator
<p>1. <b>Notify</b> the RC and request the RC to issue an Energy Emergency Alert 3 (EEA 3) for the CAISO BA area.</p> <p>2. <b>Issue</b> an EEA 3 notice using the AWE Notification System.<sup>6</sup></p> <p>3. <b>Issue/ update</b> a Flex Alert notice using the AWE Notification System, as needed.</p> <p><b>Note:</b> AWE notices are also sent via the MNS system and the message indicates the need for conservation and additional bids into the market. Refer to examples in <a href="#">4420C Emergency Notice Templates</a>.</p> <p><b>Note:</b> if experiencing a sudden onset event which requires an immediate EEA 3 emergency, ensure RDRR is dispatched as soon as possible, ahead of or to coincide with, the SPAP being directed by the utilities and Scheduling Coordinators for the EEA 3 time period.</p> <p>4. <b>Canvas</b> PTOs for available firm load to be armed and counted towards Contingency Reserve requirements.</p> <p><b>Note:</b> in the event of a contingency, this load must be able to be removed within 10 minutes.</p>

<sup>6</sup> EOP-011-1 Attachment 1, Section B, 3.1

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CAISO System Operator
<p>5. <b>Issue</b> operating instructions to each PTO to arm load needed to count as Contingency Reserves.</p> <p>6. <b>Maintain</b> hourly updates to the RC until EEA 0 – Termination is issued.<sup>7</sup></p> <p>7. <b>Evaluate</b> the impacts of any in-progress Time Error Correction and</p> <p>8. <b>Request</b> the RC to terminate Time Error Correction if it is contributing to resource deficiency.</p> <p>9. <b>Notify</b> the “ALL RELIABILITY” and Market distribution lists via the GMS.</p> <p>10. <b>Conduct</b> a blast call with PTOs and UDC/MSS entities.</p> <p>11. <b>Notify</b> the ERC of system conditions, Flex Alert notices, and any need to file DOE OE-417 or NERC Event Reporting Form.</p> <p><i>Note: If the ERC is unavailable, CAISO Shift Manager or designee has to file the OE-417. Refer to CAISO Operating Procedure <a href="#">4110A DOE, NERC and WECC Significant Event Reporting Requirements</a>.</i></p> <p>12. <b>Coordinate</b> with CAISO off-shift management to issue System Status Updates email to affected entities as needed.</p> <p>13. <b>Procure</b> Legacy RMR and any other available Out-of-Market Operating Reserve as available.</p> <p>14. If Legacy RMR units are assigned AS,</p> <ul style="list-style-type: none"> <li>• <b>Send</b> the following MNS message: <p style="margin-left: 40px;"><i>“The CAISO is currently-utilizing Legacy RMR units to provide additional Operating Reserve.”</i></p> </li> </ul> <p>15. If firm load interruptions are imminent, <b>conduct</b> a blast call to pre-arrange (whenever possible) with UDC/MSS entities in order to minimize any time-lag in removing the load.</p> <p><i>Example: On a peak-load day if it is anticipated that EEA 3 Firm load reductions may be needed, there will be an early morning reliability blast call to advise the PTOs, MSS and UDC entities to attend stations and/or standby at facilities, as required, to support immediate load removal at the direction of the CAISO Shift Manager.</i></p> <p>16. To initiate Firm Load Interruptions, <b>provide</b> the megawatt quantity to be interrupted to each UDC/MSS.</p> <p><i>Note: Interruptions should be coordinated with CAISO, may occur in rotating blocks under the direction of the PTO’s Transmission Control Center, and are dependent on Contingency Reserve requirements and/or ACE and frequency.</i></p> <p>17. <b>Refer</b> to CAISO Operating Procedure <a href="#">4510A Load Shed Calculation Guideline</a>.</p> <p>18. <b>Issue</b> an EEA 3 – Firm Load Interruptions notice using the AWE Notification System.</p>

<sup>7</sup> EOP-011-1 Attachment 1, Section B, 3.2

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CAISO System Operator
<p><b>Note:</b> AWE notices are also sent via the MNS system and the message indicates the need for conservation and total MW requested for firm load interruptions.</p> <p>19. <b>Notify</b> the “ALL RELIABILITY” and Market distribution lists via the GMS.</p> <p>20. <b>Conduct</b> a blast call with PTOs, UDCs and MSSs as needed.</p> <p>21. <b>Maintain</b> hourly updates to the RC until EEA 0 – Terminated is issued.</p> <p>22. <b>Coordinate</b> with CAISO off-shift management to issue a System Status Updates email to affected entities as needed.</p>

Utilities and Scheduling Coordinators
<p>1. If a sudden onset event has occurred, and no EEA 1 or EEA 2 notice was issued by CAISO, when the EEA 3 notice is received, for the time period specified in the EEA 3 notice,</p> <ul style="list-style-type: none"> <li>ELRP Board (Emergency Load Reduction Program) <b>notify</b> CAISO Grid Operations Management if activating ELRP and <b>provide</b> estimated total MW within 1 hour of event notice being issued.</li> <li><b>Direct</b> participating customers to utilize State Power Augmentation Program (SPAP) generators and any additional generators approved for emergency use, <b>as well as</b> other load reduction and Emergency Demand Response programs.</li> </ul>

### 3.7. Emergency Downgrade

CAISO will make notifications and downgrade (step down) to necessary level of emergency as conditions improve, or cancel the System Emergency and return to normal operations.

CAISO System Operator
<ol style="list-style-type: none"> <li><b>Conduct a blast</b> call with affected entities to <b>provide</b> updated system information and when preparing to restore firm load.</li> <li><b>Issue</b> System Status Updates email to affected entities as needed.</li> <li>Whenever possible, <b>restore</b> firm load before interruptible load and /or Schedules.</li> <li><b>Terminate</b> the EEA 3 - Load Interruptions notice <b>using</b> the AWE Notification System.</li> <li><b>Maintain</b> hourly updates to the RC until EEA 0 – Termination is issued.<sup>8</sup></li> <li><b>Notify</b> the RC to provide updates as the system returns to normal.</li> </ol>

<sup>8</sup> EOP-011-1 Attachment 1, Section B, 2.2

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CAISO System Operator
<p>7. As needed, <b>request</b> the RC to downgrade the emergency alert levels for the CAISO BA area.</p> <p>8. <b>Downgrade</b> the emergency alert levels when possible by <b>backing out</b> of each step that was performed for that alert level.<sup>9</sup></p> <p>9. <b>Issue</b> a cancellation notice for the current emergency alert level.</p> <p><i>Note: there is no need to reissue an implementation notice for downgraded emergency alert if still in effect. (i.e., when cancelling an EEA 3 no reissue needed if EEA 2 was issued previously and is still in effect).</i></p> <p>10. If no lower emergency alert level is still in effect,           <ul style="list-style-type: none"> <li>• <b>Issue</b> a new notice with the lower current emergency alert level.</li> <li>• If Non-Market resources are still required to maintain Contingency Reserve requirements, <b>issue</b> an EEA 2.</li> </ul> </p> <p>11. <b>Coordinate</b> with CAISO off-shift management to <b>issue</b> System Status Updates email to affected entities as needed.</p>

Utilities and Scheduling Coordinators
<p>1. As the declared Energy Emergency Alert (EEA) levels are cancelled and downgraded, CAISO will <b>coordinate</b> with the utility grid control centers to <b>restore</b> firm load <b>and</b> <b>end</b> the dispatches for RDRR, out-of-market LMDR and other out-of-market resource dispatches.</p>

## 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	7.7.1, 7.7.2, <b>and</b> 7.7.3
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<sup>9</sup> EOP-011-1 Attachment 1, Section B, 3.4

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CAISO Operating Procedure	<a href="#">4410 Emergency Assistance</a> <a href="#">4420E Allowable Transmission Maintenance Activities During Restricted Maintenance Operations</a> <a href="#">4510 Load Management Programs and Underfrequency Load Shedding</a> <a href="#">4510A Load Shed Calculation Guideline</a> <a href="#">4510B Demand Response and UDC Interruptible Programs</a>
NERC and WECC Requirements	BAL-002-WECC-3 R1 (effective 6/28/2021), R3, and R4 EOP-011-1, R1, R2, R2.2.1, R2.2.2, R2.2.4, R2.2.8, and Attachment 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:

<b>Operating Reserve (Tariff)</b>	The combination of Spinning and Non-Spinning Reserve required to meet NERC and WECC reliability standards and any requirements of the NRC for reliable operation of the CAISO Balancing Authority Area.
<b>Contingency Only (Tariff)</b>	A resource providing Operating Reserve capacity that may be dispatched by CAISO only in the event of a Contingency or an imminent or actual System Emergency.
<b>Contingency Reserve (NERC)</b>	The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard).  A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority: <ul style="list-style-type: none"> <li>Is experiencing a Reliability Coordinator declared Energy Emergency Alert level, and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.</li> </ul>

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	<ul style="list-style-type: none"> <li>Is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan</li> </ul>
<b>Emergency Load Reduction Program (ELRP)</b>	Investor Owned Utilities may trigger ELRP events when CAISO declares a Flex Alert, EEA Watch, EEA 1, 2 or 3. ELRP events generally 16:00 – 21:00 timeframe, minimum 1 hour (max 5 hours). Program runs May to October in the years 2021 to 2025.
<b>Reliability Demand Response Resource (RDRR)</b>	May be dispatched in conjunction with a Transmission Emergency, EEA 2 and 3 notices (formerly known as “Warning” “Stage 1”, “Stage 2” and “Stage 3” notices). Cannot have a minimum run time of greater than one (1) hour. Must have sustained response period or maximum run time of at least four (4) hours.

### Version History

Version	Change	Date
11.0	Annual Review - Page 15 & 16 Added Restricted Maintenance Operations to Definitions Section. Replaced references to CAISO with ISO except when referring to the tariff. Replaced references to Shift Supervisor with Shift Manager. Replaced “Transmission Operator Directive” with “Transmission Operator Operating Instruction”, pursuant to IRO-001-4. Updated all NERC and WECC references.	4/01/17
11.1	Formatting and grammar corrections. Minor update to bold content.	6/22/17
11.2	Section 3.4: Added new Step 3 and added “up to” in Step 15 for clarification. Section 3.5.1, Step 7: Removed step Section 3.5.2, Step 5, 6: Removed “Flex Alert Notices.” Step 7: Removed. Step 19: Added “up to” for clarification. Section 3.5.3, Step 7: Added “Request that ISO Communications.” Removed “Flex Alert Notices.” Sections 3.5.4 & 3.5.5: Corrected labeling of section title. Removed references to “Flex Alert Notices” References: Updated WECC Criterion. Minor grammar and formatting updates throughout.	9/18/17
11.3	Added new Section 3.2 for Flex Alert. Section 3.4, Step 15: Minor update.	8/28/18

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Version	Change	Date
	Section 3.5.1: New Step 7 added for Flex Alert. Section 3.5.2: Updated Step 5 and added new Step 6 regarding Flex Alert notice. Minor update to Step 20 regarding notification. Section 3.5.3: Minor update to first paragraph. Updated Step 5 and added new Step 7 regarding Flex Alert notice. Section 3.5.4: Minor update to Section title and first paragraph. Updated Step 5 for Flex Alert notices. Replaced Peak RC with the RC in most instances. Replaced A/S with AS. Updated NERC standard BAL reference Minor format and grammar updates throughout. Removed version history prior to 3-years.	
12.0	Annual Review: Section 3.4: Removed Steps 19, 20, 22 & 23 to remove declaration of EEA2 and EEA3 per updated RC procedures. Section 3.5: Updated BAL-002 reference. Section 3.5.2: Moved Steps 15, 16, and 17 to Steps 7, 8 and 9. Sections 3.5.2, 3.5.3 & 3.5.4: Updated Step 5 note to be consistent with other notes regarding Shift Manager or designee to file OE-417 if ERC is unavailable. Replaced Reliability Messaging Tool (RMT) with Reliability messaging system throughout. Replaced Peak RC with the RC under Operationally Affected Parties. References Section: Removed BAL-004 reference from NERC Requirements. Minor format and grammar updates.	6/11/19
12.1	Updated procedure per changes to 4420B EOP-011-1 EEA levels with BAL-002 WECC 2A in sections Warning, Emergency Stage 1, 2 & 3. Removed "WECC" from Notify the "All Reliability" distribution list. Section 3.5.3 Emergency Stage 1 removed Step 6. Section 3.5.5 Emergency Stage 3 changed "Spinning Reserve" to "Contingency Reserve". Removed Public Relations from section. Removed Public Relations from issuing a Flex Alert notification, as no longer performing this notification.	10/31/19
13.0	Annual Review: Changed all references of 'RMR' to 'Legacy RMR' to align with Operating Procedure 2310. Replaced Staged Emergency with Energy Emergency. Replaced System Operations with Grid Operations. Updated Warning section. Added Metered Subsystem (MSS) to Responsibilities section.	6/15/21

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Version	Change	Date
	Changed “call” and “conference call” to “conduct a blast call” throughout. Added new Operating Procedure 4420H Customer Agreements to Appendix section. Added Section 3.2 CAISO Communications Regarding Forecasted System Conditions. Updated Tariff references. Replaced ISO with CAISO and minor format and grammar updates for consistency.  <b>6/25/21 - Errata Change:</b> Section 3.6.1: Updated first paragraph to include “...by 1500 PPT the day before...”, as this was removed in error.	
13.1	Updated the following sections to include ELRP and CSEP: Alert, Warning, Stage 1, Stage 2, Stage 3 and Emergency downgrade. Added Definitions for ELRP, RDRR and CSEP. Added reference to new Procedure Attachment 4420I in Appendix Section.	8/20/21
13.2	Updated with State Power Augmentation Program (SPAP) references through sections for Transmission Emergency, Alert, Warning, Stage 1, Stage 2, Stage 3, Emergency Downgrade and Definitions.	10/21/21
14.0	Annual Review: Major Update - See yellow highlighting. Converted AWE levels Alert, Warning, Stage 1, 2 and 3 to EEA Watch, EEA 1, 2 and 3 throughout procedure. Section 3.3 - Added Flex Alert criteria. Clarified ELRP references through procedure. Removed references to CSEP program throughout procedure. Removed history prior to five years. Minor format and grammar edits made.	5/01/22

## 5. Periodic Review Procedure

### Review Criteria & Incorporation of Changes

This procedure review may be conducted through a collaborative process including Operationally Affected Parties. The process includes an appropriate review of the NERC and WECC Mandatory Reliability standards.

### Frequency

Annual

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## Appendix

- 4420B **Emergency Guide**
- 4420C **Emergency** Notice Templates
- 4420E Allowable Transmission Maintenance Activities During Restricted Maintenance Operations
- 4420H **Energy Emergencies** and Customer Agreements
- 4420I Emergency MW