
 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

## Table of Contents

<b>Purpose</b> .....	<b>2</b>
<b>1. Transmission Emergency</b> .....	<b>3</b>
<b>2. System Emergency</b> .....	<b>5</b>
2.1.1. Contingencies During Non-Emergency Conditions .....	7
2.1.2. Contingencies During Emergency Conditions .....	8
<b>3. System Reserve Deficiency</b> .....	<b>10</b>
3.1. Day Ahead (Alert Notice or 24-Hour Forecast Notice).....	10
3.2. Forecast Update Notice.....	11
3.3. Real-Time Market (Warning Notice or 1-Hour Probability Notice) .....	12
3.4. Stage 1 Emergency .....	13
3.5. Stage 2 Emergency .....	15
3.6. Stage 3 Emergency .....	17
<b>4. Regional Reserve Deficiency</b> .....	<b>19</b>
4.1. Day Ahead (Alert Notice or 24-Hour Forecast Notice - Regional).....	20
4.2. Forecast Update Notice - Regional.....	21
4.3. Real-Time Market (Warning Notice or 1-Hour Probability Notice - Regional) .....	22
4.4. Stage 1 Emergency – Regional.....	24
4.5. Stage 2 Emergency - Regional.....	26
4.6. Stage 3 Emergency - Regional.....	27
<b>Supporting Information</b> .....	<b>30</b>
Operationally Affected Parties .....	30
Responsibilities & Authority .....	30
References.....	31
Policy .....	31
Definitions .....	32
Version History.....	34
<b>Technical Review</b> .....	<b>35</b>
<b>Approval</b> .....	<b>35</b>
<b>Appendix</b> .....	<b>35</b>
Attachment A: Involuntary Load-Reduction Worksheets .....	35
Attachment B: Alert/Warning/Emergency (AWE) Guide.....	35
Attachment C: Electrical Emergency Notices .....	35
Attachment D: CAISO Switching and System Emergency Declaration Guidelines.....	35

	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
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## Purpose


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Describes the process utilized by the CAISO during a:

- 1) Transmission Emergency
- 2) System Emergency
- 3) System Reserve Deficiency
- 4) Regional Reserve Deficiency

Also addresses the associated messaging and notification requirements.

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	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
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## 1. Transmission Emergency

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


- Transmission line/path overloads or loss (inc. Interconnection Reliability Operating Limits (IROL) and System Operating Limits (SOL))
- Transformer overloads or loss
- Instability
- Frequency deviations or decay
- Voltage that exceeds limits
- Fires, earthquake, severe weather, sabotage, terrorism

**If a Transmission Emergency occurs, take the following actions:**

Step	Shift Supervisor Actions
<i>Note: The CAISO tariff binds participants to immediately respond to dispatch orders without regard to the issuance of a notice. Periodically throughout the emergency the Shift Supervisor must analyze the need for 1) additional/rotating staffing, 2) supplies, 3) services, and 4) support.</i>	
1	<b>Advise</b> all related external parties verbally that the CAISO is operating under a Transmission Emergency (immediate response to all instructions is required whether or not a Market Notice has yet been issued; verbal advisory is sufficient).
2	<b>Direct</b> the Market Operator to issue a Transmission Emergency notice to Market Participants advising them of the Transmission Emergency, which includes the following relevant details: <ul style="list-style-type: none"> <li>- The time the Emergency began</li> <li>- The time the Emergency ended (if it has)</li> <li>- A brief description of the circumstances that caused the System Emergency</li> </ul>
3	<b>Direct</b> the Transmission Dispatcher to issue a Transmission Emergency WECCNet message.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

4	<p><b>Take</b> all actions necessary as appropriate to mitigate or eliminate the Transmission Emergency up to and including:</p> <ul style="list-style-type: none"> <li>• <b>Suspend</b> Day-Ahead, HASP and Real-Time Markets.</li> <li>• <b>Dispatch</b> Black Start Generation.</li> <li>• <b>Direct</b> UDCs and MSSs to disconnect Load from the CAISO Controlled Grid.</li> <li>• <b>Curtail</b> Interruptible Demand.</li> <li>• <b>Purchase</b> Out of Market energy or capacity.</li> <li>• <b>Instruct</b> Scheduling Coordinators to shut down Generating Units not required by the CAISO, or start any Generating Units that can be started quickly enough to assist with the System Emergency.</li> <li>• <b>Instruct</b> Scheduling Coordinators to increase or curtail the output of any of its Generating Units.</li> <li>• <b>Request</b> schedule changes for deliveries of Energy and/or Ancillary Services into or out of the CAISO Controlled Grid, as necessary.</li> </ul>				
5	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> </thead> <tbody> <tr> <td>A Participant fails to immediately respond to Dispatch Instructions,</td> <td><b>Advise</b> the Participant that during a Transmission Emergency, they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies.</td> </tr> </tbody> </table>	If...	Then...	A Participant fails to immediately respond to Dispatch Instructions,	<b>Advise</b> the Participant that during a Transmission Emergency, they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies.
If...	Then...				
A Participant fails to immediately respond to Dispatch Instructions,	<b>Advise</b> the Participant that during a Transmission Emergency, they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies.				
<b>Step</b>	<b>Market Operator Actions</b>				
6	<p><b>Disseminate</b> the Notice via the AWE messaging system to the following entities:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>				
<b>Step</b>	<b>Transmission Dispatcher Actions</b>				
7	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.				

	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
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## 2. System Emergency

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The CAISO may declare a System Emergency for any event that limits or prevents the ability of the CAISO to safely and reliably operate the grid or energy markets through normal modes of operation. Declaration of a System Emergency is caused by events including but not limited to:

- Insufficient generating capacity
- Harm or threats of harm, to control room personnel, utility personnel, or the public.
- Damage or threats of damage to generating facilities or any transmission facilities, grid control facilities, grid or market computing and monitoring systems, grid or market data, telemetry, voice or data communications.
- Unmanageable and unrecoverable imbalance between system supply and system demand, or severe Area Control Error (ACE) that threatens grid reliability.


*Note: Periodically throughout the emergency the Shift Supervisor must analyze the need for 1) additional/rotating staffing, 2) supplies, 3) services, and 4) support.*

**If a System Emergency occurs, take the following steps:**

Step	Shift Supervisor Actions
1	<b>Advise</b> all related external parties that the CAISO is operating under a System Emergency (immediate response to all instructions is required whether or not a Market Notice has yet been issued; verbal advisory is sufficient).
2	<b>Direct</b> the Market Operator to issue System Emergency notice to Market Participants, even if the event has already subsided or terminated.
3	<b>Inform</b> the WECC RC of the System Emergency declaration.
4	<b>Direct</b> the Transmission Dispatcher to issue a System Emergency WECCNet message.

	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
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5	<p><b>Take</b> all actions necessary as appropriate to mitigate or eliminate the System Emergency up to and including:</p> <ul style="list-style-type: none"> <li>• <b>Suspend</b> Day-Ahead, HASP and Real Time Markets.</li> <li>• <b>Dispatch</b> Black Start Generation.</li> <li>• <b>Direct</b> UDCs and MSSs to disconnect Load from the CAISO Controlled Grid.</li> <li>• <b>Curtail</b> Interruptible Demand.</li> <li>• <b>Purchase</b> Out of Market energy or capacity.</li> <li>• <b>Request Emergency Assistance</b></li> <li>• <b>Instruct</b> Scheduling Coordinators to shut down Generating Units not required by the CAISO, or to start any Generating Units that can be started quickly enough to assist with the System Emergency.</li> <li>• <b>Instruct</b> Scheduling Coordinators to increase or decrease the output of any of its Generating Units, as necessary.</li> <li>• <b>Request</b> schedule changes for deliveries of Energy and/or Ancillary Services into or out of the CAISO Controlled Grid, as necessary.</li> <li>• <b>Transfer</b> grid and market control to the alternate Control Room.</li> <li>• <b>Evacuate</b> the Control Room if necessary (refer to Emergency Operating Procedure E-518, Control Room Evacuation).</li> </ul>
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		<b>Version No.</b>	5.1
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Step	Shift Supervisor Actions					
6	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> </thead> <tbody> <tr> <td>Dispatch Instructions are not immediately followed,</td> <td><b>Advise</b> the Participant they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies (<a href="#">Section 7 of ISO Tariff</a>).</td> </tr> </tbody> </table>		If...	Then...	Dispatch Instructions are not immediately followed,	<b>Advise</b> the Participant they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies ( <a href="#">Section 7 of ISO Tariff</a> ).
If...	Then...					
Dispatch Instructions are not immediately followed,	<b>Advise</b> the Participant they are bound by the CAISO Tariff to respond to CAISO Dispatch Instructions with an immediate response during System Emergencies ( <a href="#">Section 7 of ISO Tariff</a> ).					
Step	Market Operator Actions					
7	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>					
Step	Transmission Dispatcher Actions					
8	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.					

**2.1.1. Contingencies During Non-Emergency Conditions**


Step	Shift Supervisor Actions					
1	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> </thead> <tbody> <tr> <td>           The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs that immediately threatens grid reliability, such as:           <ul style="list-style-type: none"> <li><input type="checkbox"/> Severe voltage declines,</li> <li><input type="checkbox"/> Stability limits to be exceeded,</li> <li><input type="checkbox"/> Path, line, inter-tie, or equipment overloads (i.e. SOL or IROL),</li> </ul> <b>And</b> reserves are inadequate to maintain or restore grid reliability,         </td> <td> <b>Order</b> UDCs and MSSs to manually shed Load, as necessary, in amounts and locations sufficient to mitigate the threat or harm (if the CAISO Shift Supervisor determines it necessary). Refer to E-502, <a href="#">Emergency Manual Load Shedding</a>, for specific instructions.         </td> </tr> </tbody> </table>		If...	Then...	The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs that immediately threatens grid reliability, such as: <ul style="list-style-type: none"> <li><input type="checkbox"/> Severe voltage declines,</li> <li><input type="checkbox"/> Stability limits to be exceeded,</li> <li><input type="checkbox"/> Path, line, inter-tie, or equipment overloads (i.e. SOL or IROL),</li> </ul> <b>And</b> reserves are inadequate to maintain or restore grid reliability,	<b>Order</b> UDCs and MSSs to manually shed Load, as necessary, in amounts and locations sufficient to mitigate the threat or harm (if the CAISO Shift Supervisor determines it necessary). Refer to E-502, <a href="#">Emergency Manual Load Shedding</a> , for specific instructions.
If...	Then...					
The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs that immediately threatens grid reliability, such as: <ul style="list-style-type: none"> <li><input type="checkbox"/> Severe voltage declines,</li> <li><input type="checkbox"/> Stability limits to be exceeded,</li> <li><input type="checkbox"/> Path, line, inter-tie, or equipment overloads (i.e. SOL or IROL),</li> </ul> <b>And</b> reserves are inadequate to maintain or restore grid reliability,	<b>Order</b> UDCs and MSSs to manually shed Load, as necessary, in amounts and locations sufficient to mitigate the threat or harm (if the CAISO Shift Supervisor determines it necessary). Refer to E-502, <a href="#">Emergency Manual Load Shedding</a> , for specific instructions.					

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		<b>Version No.</b>	5.1
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Step	Shift Supervisor Actions					
2	<table border="1"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs requiring conversion of <i>Spinning Reserves</i> to energy in amounts that cause actual <i>Spinning Reserve</i> levels to dip below WECC Operating Reserve requirements,</td> <td> <ul style="list-style-type: none"> <li>• <b>Begin</b> tracking the time at which the contingency occurred. From the time the contingency occurred, the CAISO has one hour to restore <i>Spinning Reserve</i> levels back to WECC Operating Reserve requirements.</li> <li>• <b>Declare</b> a System Emergency if Operating Reserve cannot be restored within one (1) hour.</li> <li>• <b>Order</b> UDCs and MSSs to shed Load as necessary to comply with WECC Operating Reserve requirements.</li> </ul> </td> </tr> </table>	If...	Then...	The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs requiring conversion of <i>Spinning Reserves</i> to energy in amounts that cause actual <i>Spinning Reserve</i> levels to dip below WECC Operating Reserve requirements,	<ul style="list-style-type: none"> <li>• <b>Begin</b> tracking the time at which the contingency occurred. From the time the contingency occurred, the CAISO has one hour to restore <i>Spinning Reserve</i> levels back to WECC Operating Reserve requirements.</li> <li>• <b>Declare</b> a System Emergency if Operating Reserve cannot be restored within one (1) hour.</li> <li>• <b>Order</b> UDCs and MSSs to shed Load as necessary to comply with WECC Operating Reserve requirements.</li> </ul>	
If...	Then...					
The CAISO is operating under <i>non-emergency</i> conditions and a contingency occurs requiring conversion of <i>Spinning Reserves</i> to energy in amounts that cause actual <i>Spinning Reserve</i> levels to dip below WECC Operating Reserve requirements,	<ul style="list-style-type: none"> <li>• <b>Begin</b> tracking the time at which the contingency occurred. From the time the contingency occurred, the CAISO has one hour to restore <i>Spinning Reserve</i> levels back to WECC Operating Reserve requirements.</li> <li>• <b>Declare</b> a System Emergency if Operating Reserve cannot be restored within one (1) hour.</li> <li>• <b>Order</b> UDCs and MSSs to shed Load as necessary to comply with WECC Operating Reserve requirements.</li> </ul>					
3	<table border="1"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td><i>Spinning Reserve</i> is restored within one (1) hour of the contingency,</td> <td><b>Resume</b> normal operations.</td> </tr> </table>	If...	Then...	<i>Spinning Reserve</i> is restored within one (1) hour of the contingency,	<b>Resume</b> normal operations.	
If...	Then...					
<i>Spinning Reserve</i> is restored within one (1) hour of the contingency,	<b>Resume</b> normal operations.					

2.1.2. Contingencies During Emergency Conditions

Step	Shift Supervisor Actions					
1	<table border="1"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>The CAISO is operating under Stage 1 Emergency, Stage 2 Emergency, or Stage 3 Emergency, <b>and</b> a contingency occurs, <b>and</b> <i>Spinning Reserve</i> levels dip below WECC Operating Reserve requirements,</td> <td><b>Order</b> UDCs and MSSs to shed Load as necessary in amounts and locations sufficient to ensure that the CAISO complies with WECC Operating Reserve requirements.</td> </tr> </table>	If...	Then...	The CAISO is operating under Stage 1 Emergency, Stage 2 Emergency, or Stage 3 Emergency, <b>and</b> a contingency occurs, <b>and</b> <i>Spinning Reserve</i> levels dip below WECC Operating Reserve requirements,	<b>Order</b> UDCs and MSSs to shed Load as necessary in amounts and locations sufficient to ensure that the CAISO complies with WECC Operating Reserve requirements.	
If...	Then...					
The CAISO is operating under Stage 1 Emergency, Stage 2 Emergency, or Stage 3 Emergency, <b>and</b> a contingency occurs, <b>and</b> <i>Spinning Reserve</i> levels dip below WECC Operating Reserve requirements,	<b>Order</b> UDCs and MSSs to shed Load as necessary in amounts and locations sufficient to ensure that the CAISO complies with WECC Operating Reserve requirements.					
2	<table border="1"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>Operating Reserve is restored to WECC Operating Reserve requirements levels and all firm Load has been restored,</td> <td><b>Cancel</b> the System Emergency Notice and return to normal operating status.</td> </tr> </table>	If...	Then...	Operating Reserve is restored to WECC Operating Reserve requirements levels and all firm Load has been restored,	<b>Cancel</b> the System Emergency Notice and return to normal operating status.	
If...	Then...					
Operating Reserve is restored to WECC Operating Reserve requirements levels and all firm Load has been restored,	<b>Cancel</b> the System Emergency Notice and return to normal operating status.					

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
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Step	Market Operator Actions
3	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
Step	Transmission Dispatcher Actions
4	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
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### 3. System Reserve Deficiency


The CAISO may declare a System Reserve Deficiency when Reserve Requirements and Load Demand exceed available resources on a system-wide basis. When this occurs, the CAISO may issue an Alert, Warning, Forecast of Potential Firm Load Interruptions, Stage 1 Emergency, Stage 2 Emergency, or Stage 3 Emergency. The following section addresses these types of Emergencies and their associated actions.

***NOTE:** When severe conditions arise Operators may need to skip certain early steps of E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), to immediately begin steps found in later sections. To the extent possible and prudent, any action steps that were skipped should be implemented as time allows. Periodically throughout the emergency the Shift Supervisor must analyze the need for 1) additional/rotating staffing, 2) supplies, 3) services, and 4) support.*

#### 3.1. Day Ahead (Alert Notice or 24-Hour Forecast Notice)

**To declare an Alert or 24-Hour Forecast of Potential Firm Load Interruptions, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> After running the Day-Ahead Market (including RUC), Operating Reserves (including Ancillary Services and RMR availability), are forecast to be less than WECC Operating Reserve requirements,	<b>Then...</b> <b>Issue</b> an Alert notice by 1500 hrs for the next day and complete action steps in the Alert section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> The Market does <i>not</i> provide resources sufficient to satisfy WECC Operating Reserve requirements and non-market resources are unavailable,	<b>Then...</b> <b>Go to</b> Section 3.3 and complete the next set of actions associated with a Warning Notice.
Step	Market Operator Actions	
3	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>	
Step	Transmission Dispatcher Actions	
4	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.	


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Step	Shift Supervisor Actions					
5	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #e0f7fa;">If...</th> <th style="background-color: #e0f7fa;">Then...</th> </tr> </thead> <tbody> <tr> <td>There is a potential for <b>firm Load curtailment</b> within the next 24 hours based on forecasted Load and resources,</td> <td><b>Make</b> notifications per the 24hr Forecast section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a>.</td> </tr> </tbody> </table>		If...	Then...	There is a potential for <b>firm Load curtailment</b> within the next 24 hours based on forecasted Load and resources,	<b>Make</b> notifications per the 24hr Forecast section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
If...	Then...					
There is a potential for <b>firm Load curtailment</b> within the next 24 hours based on forecasted Load and resources,	<b>Make</b> notifications per the 24hr Forecast section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .					
6	Go to Section 3.2 or 3.3 as necessary and complete the next set of appropriate actions.					
Step	Market Operator Actions					
7	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>					
Step	Transmission Dispatcher Actions					
8	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.					

### 3.2. Forecast Update Notice

**If system conditions change significantly after the issuance of a 24-Hour Forecast Notice, then take the following actions:**

Step	Shift Supervisor Actions	
1	<b>Direct</b> the Market Operator to issue a Forecast Update Notice.	
Step	Market Operator Actions	
2	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>	
Step	Transmission Dispatcher Actions	
3	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.	


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### 3.3. Real-Time Market (Warning Notice or 1-Hour Probability Notice)

**To declare a Warning or 1-Hour Probability Notice of Firm Load Interruptions, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> After running the Real-Time Market, Operating Reserves (including all Ancillary Services and RMR availability) are forecast to be less than WECC Operating Reserve requirements,	<b>Then...</b> <b>Implement</b> a Warning by completing the Warning section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> The Market does <i>not</i> provide resources sufficient to satisfy WECC Operating Reserve requirements and non-market resources are unavailable,	<b>Then...</b> <b>Go</b> to section 3.4 and complete the next set of appropriate actions.
3	<b>If...</b> There is a potential for <b>firm Load curtailment</b> in the upcoming hour(s) based on forecasted Load and resources,	<b>Then...</b> <b>Direct</b> the Market Operator to issue a 1-Hour Probability Notice no less than ninety (90) <sup>1</sup> minutes prior to the first hour in which Load interruptions are anticipated to occur, <b>AND Direct</b> the Transmission Dispatcher to issue a WECCNet message no less than ninety (90) minutes prior to the first hour in which Load interruptions are anticipated to occur.
4	<b>Go</b> to Section 3.4 to complete the next set of appropriate actions.	
<i>Note: Sixty (60) minutes prior to the first hour in which Load interruptions are anticipated to occur; the One-Hour Probability Notice is automatically posted to the CAISO website by the AWE application.</i>		

<sup>1</sup> The CAISO has agreed to provide 90 minutes notice whenever possible. However, if unpredictable events occur the CAISO may at anytime require firm Load interruptions without providing advance notice to maintain grid reliability and grid stability.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

### 3.4. Stage 1 Emergency


It may be necessary to bypass certain Stage Emergency declarations entirely and proceed immediately to a higher-level emergency. If the preliminary emergency declarations are bypassed, appropriate actions listed in E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for those preliminary Stages should be completed during implementation of the higher-level emergency to the extent possible and prudent.

**To declare a Stage 1 Emergency, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> Operating Reserves deplete or are anticipated to drop below WECC Operating Reserve requirements and cannot be restored,	<b>Then...</b> <b>Implement</b> a STAGE 1 Emergency by completing the Stage 1 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> Operating Reserves are re-established at or above the minimum requirements <b>and</b> all Stage 1 Emergency actions have been cancelled,	<b>Then...</b> <b>Cancel</b> the Stage 1 Emergency Notice.
3	<b>If...</b> Non-market resources are still required to maintain minimum Operating Reserve requirements, The Operating Reserve requirements are no longer forecast to be less than minimum,	<b>Then...</b> <b>Issue</b> a Warning Notice. <b>OR</b> <b>Cancel</b> the Stage 1 Emergency Notice <b>and return</b> to normal status.
Step	Small UDC Actions	
4	<b>If...</b> A Stage 1 Emergency is declared by the CAISO,	<b>Then...</b> <b>Implement</b> voluntary Load reduction.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Market Operator Actions
5	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
Step	Transmission Dispatcher Actions
6	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

### 3.5. Stage 2 Emergency


It may be necessary to bypass certain Stage Emergency declarations entirely and proceed immediately to a higher-level emergency. If the preliminary emergency declarations are bypassed, appropriate actions listed in E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for those preliminary Stages should be completed during implementation of the higher-level emergency to the extent possible and prudent.

**To declare a Stage 2 Emergency, take the following actions:**

Step	Shift Supervisor Actions															
1	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th colspan="2" style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>Operating Reserves deplete or are anticipated to drop below 5% of Load responsibility and cannot be restored,</td> <td colspan="2"> <b>Implement</b> a STAGE 2 Emergency by completing the Stage 2 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a>.         </td> </tr> </table>			If...	Then...		Operating Reserves deplete or are anticipated to drop below 5% of Load responsibility and cannot be restored,	<b>Implement</b> a STAGE 2 Emergency by completing the Stage 2 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .								
If...	Then...															
Operating Reserves deplete or are anticipated to drop below 5% of Load responsibility and cannot be restored,	<b>Implement</b> a STAGE 2 Emergency by completing the Stage 2 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .															
2	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th colspan="2" style="background-color: #e0ffff;">And...</th> </tr> <tr> <td rowspan="3">Operating Reserve is re-established to levels in excess of 5% of the load responsibility,</td> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>All Stage 2 Emergency actions have been cancelled and Stage 1 Emergency actions are still in effect while Operating Reserves remain below minimum requirements,</td> <td> <b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Stage 1 Emergency Notice.  <b>OR,</b> </td> </tr> <tr> <td>All Stage 2 Emergency actions have been cancelled and non-market resources are still required to maintain WECC Operating Reserve requirements,</td> <td> <b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Warning Notice.  <b>OR,</b> </td> </tr> <tr> <td>Market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements,</td> <td colspan="2"> <b>Cancel</b> the Stage 2 Emergency Notice and <b>return</b> to normal status.         </td> </tr> </table>			If...	And...		Operating Reserve is re-established to levels in excess of 5% of the load responsibility,	If...	Then...	All Stage 2 Emergency actions have been cancelled and Stage 1 Emergency actions are still in effect while Operating Reserves remain below minimum requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Stage 1 Emergency Notice. <b>OR,</b>	All Stage 2 Emergency actions have been cancelled and non-market resources are still required to maintain WECC Operating Reserve requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Warning Notice. <b>OR,</b>	Market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>return</b> to normal status.	
If...	And...															
Operating Reserve is re-established to levels in excess of 5% of the load responsibility,	If...	Then...														
	All Stage 2 Emergency actions have been cancelled and Stage 1 Emergency actions are still in effect while Operating Reserves remain below minimum requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Stage 1 Emergency Notice. <b>OR,</b>														
	All Stage 2 Emergency actions have been cancelled and non-market resources are still required to maintain WECC Operating Reserve requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>issue</b> a Warning Notice. <b>OR,</b>														
Market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements,	<b>Cancel</b> the Stage 2 Emergency Notice and <b>return</b> to normal status.															

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Market Operator Actions
3	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
Step	Transmission Dispatcher Actions
4	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	


### 3.6. Stage 3 Emergency

It may be necessary to bypass certain Stage Emergency declarations entirely and proceed immediately to a higher-level emergency. If the preliminary emergency declarations are bypassed, appropriate actions listed in E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for those preliminary Stages should be completed during implementation of the higher-level emergency to the extent possible and prudent.


**To declare a Stage 3 Emergency, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> The Spinning Reserve portion of Operating Reserves deplete or are anticipated to drop below the WECC Operating Reserve requirements <sup>2</sup> and cannot be restored,	<b>Then...</b> <b>Implement</b> a STAGE 3 Emergency by completing the Stage 3 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> Firm Load can be restored without causing Spinning Reserve to fall below WECC Spinning Reserve requirements,	<b>Then...</b> <ul style="list-style-type: none"> <li>• <b>Restore</b> firm Load in the order it was shed (i.e., the first Load shed will be the first Load restored), <b>AND</b></li> <li>• <b>Restore</b> all firm Load prior to restoration of any Interruptible Load, unless operating constraints dictate otherwise.</li> </ul>
<p><i><b>NOTE:</b> If operating constraints preclude restoration, Operators may leave Load in a particular zone off while other Loads are restored.</i></p>		
3	<b>If...</b> <ul style="list-style-type: none"> <li>• Stage 2 Emergency actions are still in effect,</li> <li>• Spinning Reserve meets or exceeds WECC Operating Reserve requirements,</li> <li>• All firm Load is restored, <b>and</b></li> <li>• Operating Reserve is greater than 5% of load responsibility,</li> </ul>	<b>Then...</b> <ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li>• <b>Issue</b> a Stage 2 Emergency Notice.</li> </ul>

<sup>2</sup> WECC Operating Reserve requirements state that Spinning Reserve shall be no less than 50% of the total Contingency Reserve requirement.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Shift Supervisor Actions	
4	<b>If...</b> <ul style="list-style-type: none"> <li>• Stage 1 Emergency actions are still in effect,</li> <li>• Operating Reserves exceed 5% of load responsibility, and</li> <li>• All firm Load and non-firm Load has been restored,</li> </ul>	<b>Then...</b> <ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li>• <b>Issue</b> a Stage 1 Emergency Notice.</li> </ul>
5	<b>If...</b> <p>Non-market resources are still required to maintain Operating Reserve at or above WECC Operating Reserve requirements and all firm and non-firm Load is restored,</p>	<b>Then...</b> <ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 3 Emergency Notice <b>and</b></li> <li>• <b>Issue</b> a Warning Notice.</li> </ul>
6	<b>If...</b> <p>Operating Reserve meets or exceeds WECC Operating Reserve requirements, is no longer forecast to be less than WECC Operating Reserve requirements, and all firm and non-firm Load has been restored,</p>	<b>Then...</b> <ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 3 Emergency, <b>and</b></li> <li>• <b>Return</b> to normal status.</li> </ul>
Step	Market Operator Actions	
7	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>	
Step	Transmission Dispatcher Actions	
8	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.	

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

## 4. Regional Reserve Deficiency

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The CAISO may declare a Regional Reserve Emergency when Regional Reserve Requirements and Load Demand exceed available resources and congestion restricts the movement of resources into a specific region. If regional procurement of A/S Reserve Requirements is deficient to meet area requirements, the CAISO may issue a(n):


- Alert ([Section 4.1.](#))
- Warning ([Section 4.3.](#)) forecast of potential Firm Load Interruptions
- Stage 1 Emergency ([section 4.4.](#))
- Stage 2 Emergency ([section 4.5.](#))
- Stage 3 Emergency ([section 4.6.](#)) on a regional basis only.

Region	Regional Reserve Deficiency Definition
<b>Northern California</b>	(NP15 + ZP26) Includes the zones associated with NP15 and ZP26; commonly identified as the PG&E service area.
<b>Southern California</b>	(SP15 – ZP26) Includes the zone associated with SP15, but does not include ZP26; commonly identified as the SCE and SDGE service area.

The following sections address these types of Regional Reserve Deficiencies and actions associated with them. The actions taken for a Regional Reserve Deficiency are the same as the actions taken for System Reserve Deficiencies, but only the entities in the deficient region are targeted. The same notices are generated, but specific regions are identified as deficient, or forecast to be deficient.

**NOTE:** Operators may need to skip certain early steps of E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), to immediately begin steps found in later sections when severe conditions arise. To the extent possible and prudent, any action items that were skipped should be later implemented. Periodically throughout the emergency the Shift Supervisor must analyze the need for 1) additional/rotating staffing, 2) supplies, 3) services, and 4) support.


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 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

**4.1. Day Ahead (Alert Notice or 24-Hour Forecast Notice - Regional)**

**To declare an Alert or 24-Hour Forecast of Potential Firm Load Interruptions on a regional basis, take the following actions:**


Step	Shift Supervisor Actions	
1	<b>If...</b> After running the Day-Ahead Market (including RUC), Regional Operating Reserves (including Ancillary Services and RMR availability), are forecast to be less than WECC Operating Reserve requirements, <b>AND</b> anticipated congestion will not allow for movement of reserves into a specific region,	<b>Then...</b> <b>Issue</b> an Alert notice by 1500 hrs for the next day in the deficient Region and complete action steps in the Alert section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> The Market does <i>not</i> provide resources sufficient to satisfy WECC Operating Reserve requirements and non-market resources are unavailable,	<b>Then...</b> <b>Go to</b> Section 4.3 and complete the next set of actions associated with a Warning Notice.
3	<b>If...</b> There is a potential for <b>firm Load curtailment</b> within the next 24 hours based on forecasted Load and resources, and procurement of regional reserves:	<b>Then...</b> <b>Make</b> notifications per the 24hr Forecast section of E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> , specifying the region affected.
4	<b>Go to</b> Section 4.2 or 4.3 as necessary and complete the next set of appropriate actions.	
Step	Market Operator Actions	
5	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>	
Step	Transmission Dispatcher Actions	
6	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.	

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

**4.2. Forecast Update Notice - Regional**

**If system conditions for the Region change significantly after the issuance of a 24-Hour Forecast Notice, than take the following actions:**

<b>Step</b>	<b>Shift Supervisor Actions</b>
1	<b>Direct</b> the Market Operator to issue a Forecast Update Notice.
<b>Step</b>	<b>Market Operator Actions</b>
2	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
<b>Step</b>	<b>Transmission Dispatcher Actions</b>
3	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

**4.3. Real-Time Market (Warning Notice or 1-Hour Probability Notice - Regional)**


**To declare a Warning or 1-Hour Probability of Potential Firm Load Interruptions on a regional basis, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> After running the Real-Time Market, Regional Operating Reserves (including all Ancillary Services and RMR availability) are forecast to be less than WECC Operating Reserve requirements, <b>AND</b> anticipated congestion will not allow for movement of reserves into a specific region,	<b>Then...</b> <b>Implement</b> a Warning in the deficient Region by completing the Warning section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> The Market does <i>not</i> provide resources sufficient to satisfy WECC Operating Reserve requirements and non-market resources are unavailable,	<b>Then...</b> <b>Go</b> to section 4.4 and complete the next set of appropriate actions.
3	<b>If...</b> There is a potential for <b>firm Load curtailment</b> in the upcoming hour(s) based on forecasted Load and resources and procurement of regional reserves:	<b>Then...</b> <b>Direct</b> the Market Operator to issue a 1-Hour Probability Notice no less than ninety (90) <sup>3</sup> minutes prior to the first hour in which Load interruptions are anticipated to occur, <b>AND</b> <b>Direct</b> the Transmission Dispatcher to issue a WECCNet message no less than ninety (90) minutes prior to the first hour in which Load interruptions are anticipated to occur.
4	<b>Go</b> to Section 4.4 to complete the next set of appropriate actions.	
<i><b>Note:</b> Sixty (60) minutes prior to the first hour in which Load interruptions are anticipated to occur; the One-Hour Probability Notice is automatically posted to the CAISO website by the AWE application.</i>		

<sup>3</sup> The CAISO has agreed to provide 90 minutes notice whenever possible. However, if unpredictable events occur the CAISO may at anytime require firm Load interruptions without providing advance notice to maintain grid reliability and grid stability.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Market Operator Actions
5	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
Step	Transmission Dispatcher Actions
6	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

#### 4.4. Stage 1 Emergency – Regional


It may be necessary to bypass certain Stage Emergency declarations entirely and proceed immediately to a higher-level emergency. If the preliminary emergency declarations are bypassed, appropriate actions listed in E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for those preliminary Stages should be completed during implementation of the higher-level emergency to the extent possible and prudent.

**To declare a Stage 1 Emergency on a regional basis, take the following actions:**

Step	Shift Supervisor Actions	
1	<b>If...</b> Regional Operating Reserves deplete or are anticipated to drop below WECC Operating Reserve requirements and cannot be restored, <b>AND</b> anticipated congestion will not allow for movement of reserves into a specific region,	<b>Then...</b> <b>Implement</b> a STAGE 1 Emergency in the deficient Region by completing the Stage 1 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .
2	<b>If...</b> Operating Reserve is re-established in that Region at, or above the minimum requirements <b>and</b> all Stage 1 Emergency actions have been cancelled,	<b>Then...</b> <b>Cancel</b> the Stage 1 Emergency Notice.
3	<b>If...</b> Non-market resources are still required to maintain minimum Operating Reserve requirements in that Region, <b>OR</b> The Operating Reserve requirements are no longer forecast to be less than minimum in that Region,	<b>Then...</b> <b>Issue</b> a Warning Notice for the deficient region <b>OR</b> <b>Cancel</b> the Stage 1 Emergency Notice <b>and return</b> to normal status.
Step	Small UDC Actions	
4	<b>If...</b> A Stage 1 Emergency is declared by the CAISO,	<b>Then...</b> <b>Implement</b> voluntary Load reduction.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Market Operator Actions
5	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>
Step	Transmission Dispatcher Actions
6	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

**4.5. Stage 2 Emergency - Regional**

It may be necessary to bypass certain Stage Emergency declarations entirely and proceed immediately to a higher-level emergency. If the preliminary emergency declarations are bypassed, appropriate actions listed in E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for those preliminary Stages should be completed during implementation of the higher-level emergency to the extent possible and prudent.

**To declare a Stage 2 Emergency on a regional basis, take the following actions:**

<b>Step</b>	<b>Shift Supervisor Actions</b>	
1	<b>If...</b>	<b>Then...</b>
	Regional Operating Reserves deplete or are anticipated to drop below 5% of Load responsibility and cannot be restored,	<b>Implement</b> a STAGE 2 Emergency in the deficient Region by completing the Stage 2 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
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2	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #e0f7fa;">If...</th> <th style="background-color: #e0f7fa;">Then...</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">           Operating Reserve is re-established in the deficient Region to levels in excess of 5% of Load responsibility:         </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 2 Emergency Notice when all Stage 2 Emergency actions have been cancelled and issue a Stage 1 Emergency Notice for the deficient region if Stage 1 Emergency actions are still in effect and Operating Reserves remain below minimum requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice, when all Stage 2 Emergency actions have been cancelled, and issue a Warning Notice for the deficient region if non-market resources are still required to maintain WECC Operating Reserve requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if Operating Reserve requirements are no longer less than minimum and no longer forecast to be less than minimum, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements.</li> </ul> </td> </tr> </tbody> </table>	If...	Then...	Operating Reserve is re-established in the deficient Region to levels in excess of 5% of Load responsibility:	<ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 2 Emergency Notice when all Stage 2 Emergency actions have been cancelled and issue a Stage 1 Emergency Notice for the deficient region if Stage 1 Emergency actions are still in effect and Operating Reserves remain below minimum requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice, when all Stage 2 Emergency actions have been cancelled, and issue a Warning Notice for the deficient region if non-market resources are still required to maintain WECC Operating Reserve requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if Operating Reserve requirements are no longer less than minimum and no longer forecast to be less than minimum, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements.</li> </ul>
If...	Then...				
Operating Reserve is re-established in the deficient Region to levels in excess of 5% of Load responsibility:	<ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 2 Emergency Notice when all Stage 2 Emergency actions have been cancelled and issue a Stage 1 Emergency Notice for the deficient region if Stage 1 Emergency actions are still in effect and Operating Reserves remain below minimum requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice, when all Stage 2 Emergency actions have been cancelled, and issue a Warning Notice for the deficient region if non-market resources are still required to maintain WECC Operating Reserve requirements, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if Operating Reserve requirements are no longer less than minimum and no longer forecast to be less than minimum, <b>OR</b></li> <li>• <b>Cancel</b> the Stage 2 Emergency Notice and return to normal status if market resources provide Operating Reserve sufficient to satisfy WECC Operating Reserve requirements.</li> </ul>				
<b>Step</b>	<b>Market Operator Actions</b>				
3	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>				
<b>Step</b>	<b>Transmission Dispatcher Actions</b>				
4	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.				

#### 4.6. Stage 3 Emergency - Regional


It may be necessary to bypass the Stage 1 and/or 2 Emergency entirely and proceed immediately to a Stage 3 Emergency. If the Stage 1 and/or 2 Emergency declarations are bypassed, appropriate actions from E-508B, [Alert/Warning/Emergency \(AWE\) Guide](#), for Stage 1 and/or 2 should be completed during implementation of the higher-level emergency.

**To declare a Stage 3 Emergency on a regional basis, take the following actions:**


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

Step	Shift Supervisor Actions					
1	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>The Spinning Reserve portion of Regional Operating Reserves deplete or are anticipated to drop below the WECC Operating Reserve requirements<sup>4</sup> and cannot be restored,</td> <td><b>Implement</b> a STAGE 3 Emergency in the deficient region by completing the Stage 3 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a>.</td> </tr> </table>	If...	Then...	The Spinning Reserve portion of Regional Operating Reserves deplete or are anticipated to drop below the WECC Operating Reserve requirements <sup>4</sup> and cannot be restored,	<b>Implement</b> a STAGE 3 Emergency in the deficient region by completing the Stage 3 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .	
If...	Then...					
The Spinning Reserve portion of Regional Operating Reserves deplete or are anticipated to drop below the WECC Operating Reserve requirements <sup>4</sup> and cannot be restored,	<b>Implement</b> a STAGE 3 Emergency in the deficient region by completing the Stage 3 Emergency section in E-508B, <a href="#">Alert/Warning/Emergency (AWE) Guide</a> .					
2	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td>Firm Load can be restored without causing Spinning Reserve to fall below WECC Spinning Reserve requirements,</td> <td> <ul style="list-style-type: none"> <li><b>Restore</b> firm Load in the order it was shed (i.e., the first Load shed will be the first Load restored), <b>and</b></li> <li><b>Restore</b> all firm Load prior to restoration of any Interruptible Load, unless operating constraints dictate otherwise.</li> </ul> </td> </tr> </table>	If...	Then...	Firm Load can be restored without causing Spinning Reserve to fall below WECC Spinning Reserve requirements,	<ul style="list-style-type: none"> <li><b>Restore</b> firm Load in the order it was shed (i.e., the first Load shed will be the first Load restored), <b>and</b></li> <li><b>Restore</b> all firm Load prior to restoration of any Interruptible Load, unless operating constraints dictate otherwise.</li> </ul>	
If...	Then...					
Firm Load can be restored without causing Spinning Reserve to fall below WECC Spinning Reserve requirements,	<ul style="list-style-type: none"> <li><b>Restore</b> firm Load in the order it was shed (i.e., the first Load shed will be the first Load restored), <b>and</b></li> <li><b>Restore</b> all firm Load prior to restoration of any Interruptible Load, unless operating constraints dictate otherwise.</li> </ul>					
3	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Stage 2 Emergency actions are still in effect in the deficient region,</li> <li>Spinning Reserve meets or exceeds WECC Operating Reserve requirements,</li> <li>All firm Load is restored, <b>and</b></li> <li>Operating Reserves are greater than 5% of Load responsibility,</li> </ul> </td> <td> <ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 2 Emergency Notice for the deficient region.</li> </ul> </td> </tr> </table>	If...	Then...	<ul style="list-style-type: none"> <li>Stage 2 Emergency actions are still in effect in the deficient region,</li> <li>Spinning Reserve meets or exceeds WECC Operating Reserve requirements,</li> <li>All firm Load is restored, <b>and</b></li> <li>Operating Reserves are greater than 5% of Load responsibility,</li> </ul>	<ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 2 Emergency Notice for the deficient region.</li> </ul>	
If...	Then...					
<ul style="list-style-type: none"> <li>Stage 2 Emergency actions are still in effect in the deficient region,</li> <li>Spinning Reserve meets or exceeds WECC Operating Reserve requirements,</li> <li>All firm Load is restored, <b>and</b></li> <li>Operating Reserves are greater than 5% of Load responsibility,</li> </ul>	<ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 2 Emergency Notice for the deficient region.</li> </ul>					
4	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e0ffff;">If...</th> <th style="background-color: #e0ffff;">Then...</th> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Stage 1 Emergency actions are still in effect in the deficient region,</li> <li>Operating Reserves are greater than 5% of Load responsibility, <b>and</b></li> <li>All firm Load and non-firm Load has been restored,</li> </ul> </td> <td> <ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 1 Emergency Notice for the deficient region.</li> </ul> </td> </tr> </table>	If...	Then...	<ul style="list-style-type: none"> <li>Stage 1 Emergency actions are still in effect in the deficient region,</li> <li>Operating Reserves are greater than 5% of Load responsibility, <b>and</b></li> <li>All firm Load and non-firm Load has been restored,</li> </ul>	<ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 1 Emergency Notice for the deficient region.</li> </ul>	
If...	Then...					
<ul style="list-style-type: none"> <li>Stage 1 Emergency actions are still in effect in the deficient region,</li> <li>Operating Reserves are greater than 5% of Load responsibility, <b>and</b></li> <li>All firm Load and non-firm Load has been restored,</li> </ul>	<ul style="list-style-type: none"> <li><b>Cancel</b> the Stage 3 Emergency Notice, <b>and</b></li> <li><b>Issue</b> a Stage 1 Emergency Notice for the deficient region.</li> </ul>					

<sup>4</sup> WECC Operating Reserve requirements state that Spinning Reserves shall be no less than 50% of the total Contingency Reserve requirement.

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

5	<b>If...</b>	<b>Then...</b>
	Non-market resources are still required to maintain Regional Operating Reserve at or above WECC Operating Reserve requirements and all firm Load is restored,	<ul style="list-style-type: none"> <li>• <b>Cancel</b> the Stage 3 Emergency Notice <b>and</b></li> <li>• <b>Issue</b> a Warning Notice for the deficient region.</li> </ul>
6	<b>If...</b>	<b>Then...</b>
	Regional Operating Reserve meets or exceeds WECC Operating Reserve requirements, is no longer forecast to be less than WECC Operating Reserve requirements, and all firm Load has been restored,	<b>Cancel</b> the Stage 3 Emergency for the deficient Region and return to normal status.
<b>Step</b>	<b>Market Operator Actions</b>	
7	<b>Disseminate</b> the Notice via the AWE messaging system to the following entities: <ul style="list-style-type: none"> <li><input type="checkbox"/> CAISO Operations and Communications management</li> <li><input type="checkbox"/> State and Federal regulatory and oversight agencies</li> <li><input type="checkbox"/> Market Participants</li> </ul>	
<b>Step</b>	<b>Transmission Dispatcher Actions</b>	
8	<b>Disseminate</b> appropriate Notice to WECCNet distribution group.	

	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	


## Supporting Information

### Operationally Affected Parties

- N/A Posted on the Internet

### Responsibilities & Authority

<b>CAISO Shift Supervisor</b>	Directs implementation of this Procedure. Periodically throughout the emergency the Shift Supervisor analyzes the need for 1) additional/rotating staffing, 2) supplies, 3) services, and 4) support.
<b>CAISO Emergency Response Team</b>	Comprised of an Executive in Charge, Public Information Coordinator and Emergency Response Coordinator. Coordinates the implementation of the CAISO Electrical System Emergency Plan. Additional CAISO Emergency Response Team members and other personnel will be named to this team at the direction of the Executive in Charge.
<b>CAISO NERC Certified RT Operating Personnel</b>	Hold authority, as delegated by the Executive Officers of the CAISO, to take or direct timely and appropriate real-time actions necessary to ensure reliable operation of the CAISO Controlled Grid, up to and including shedding of Firm Load to prevent or alleviate System Operating Limit or Interconnection Reliability Operating Limit violations. These actions may be performed without obtaining approval from higher-level personnel within the CAISO.
<b>Executive in Charge</b>	Heads the team and has overall responsibility for coordination and implementation of the CAISO EEP.
<b>Participating Transmission Owners (PTOs) and Other Responsible Parties</b>	Maintain a single point of contact with the CAISO through their Power Grid Operations Centers. These entities are identified as follows: <ul style="list-style-type: none"> <li>• Pacific Gas and Electric Co.</li> <li>• Southern California Edison Co.</li> <li>• San Diego Gas &amp; Electric Co.</li> <li>• City of Pasadena</li> <li>• City of Vernon</li> <li>• Lassen Municipal Utility District</li> <li>• City of Anaheim</li> <li>• City of Azusa</li> <li>• City of Banning</li> <li>• NCPA</li> <li>• City of Riverside</li> </ul>

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
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<b>Utility Distribution Companies (UDCs) and Small UDCs</b>	<ul style="list-style-type: none"> <li>• Completes the notification and initiates Load curtailments in accordance with their procedures.</li> <li>• Small UDCs are required to voluntarily shed Load when the ISO declares a Stage 1 Emergency.</li> </ul>
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## References

• <b>CAISO Tariff</b>	
• <b>CAISO Operating Procedure</b>	<a href="#">E-502, Emergency Manual Load Shedding</a>
• <b>CAISO Operating Procedure</b>	<a href="#">E-507, Emergency Response Team</a>
• <b>CAISO Operating Procedure</b>	<a href="#">E-511, Load Reduction Programs</a>
• <b>CAISO Operating Procedure</b>	<a href="#">N-703, Event Reporting and Notifications</a>
• <b>NERC Reliability Standards</b>	<a href="#">EOP-001</a> bookmark: <a href="#">R3.1</a> , <a href="#">R3.2</a> , <a href="#">R3.3</a> , R4, <a href="#">R4.2</a> , R4.3, <a href="#">R4.4</a> , R5 <a href="#">EOP-002</a> bookmark: <a href="#">R2</a> , <a href="#">R3</a> , R4, R6, <a href="#">R7.1</a> , <a href="#">R7.2</a> <a href="#">EOP-003</a> bookmark: <a href="#">R1</a> , R3 <a href="#">PER-001</a> bookmark: <a href="#">R1</a>
• <a href="#">UDC Electrical Emergency Plans- 7.7 of the CAISO Tariff</a>	
• WECC Regional Reliability Standard <a href="#">BAL-STD-002</a>	
• California Energy Commission’s Energy Shortage Contingency Plan	


## Policy

The CAISO will always comply with WECC Operating Reserve requirements.

The CAISO Non-Spinning Reserve requirement can be met with firm Load Shedding capacity. Since thousands of MWs of firm Load Shedding are available within 10 minutes- the CAISO’s non-spin requirement can always be satisfied.

The CAISO will request the Reliability Coordinator declare a capacity or energy emergency prior to utilizing load, other than Interruptible Load, for Contingency Reserves.

The CAISO has one hour to restore operating reserve to the minimum levels specified in WECC Operating Reserve requirements if operating reserves are converted to energy to mitigate a contingency.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
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**Definitions**


Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the ISO Tariff shall have the same meaning wherever capitalized in this procedure.

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

Term	Definition
<b>Alert</b>	Notice issued after the Day Ahead Market closes if it appears that Operating Reserves are forecast to be less than WECC Operating Reserve requirements. Can be issued on a system-wide or regional basis.
<b>Warning</b>	Notice issued after the Real-Time Market closes if it appears that Operating Reserves are forecast to be less than WECC Operating Reserve requirements. Can be issued on a system-wide or regional basis.
<b>24-Hour Forecast Notice</b>	Notice issued if there is a potential for firm Load curtailment within the next 24 hours. Can be issued on a system-wide or regional basis.
<b>Forecast Update Notice</b>	Notice issued if system conditions change significantly after the issuance of a 24-Hour Forecast Notice. Can be issued on a system-wide or regional basis.
<b>1-Hour Probability Notice</b>	Notice issued if there is a potential for firm Load curtailment in the upcoming hour(s). Can be issued on a system-wide or regional basis.
<b>Stage 1 Emergency</b>	Notice issued if Operating Reserves deplete or are anticipated to drop below WECC Operating Reserve requirements and cannot be restored. Can be issued on a system-wide or regional basis.
<b>Stage 2 Emergency</b>	Notice issued if Operating Reserves deplete or are anticipated to drop below 5% of Load responsibility and cannot be restored. Can be issued on a system-wide or regional basis.
<b>Stage 3 Emergency</b>	Notice issued when the Spinning Reserve portion of Operating Reserves deplete or are anticipated to drop below the WECC Operating Reserve requirements and cannot be restored. Can be issued on a system-wide or regional basis.
<b>Northern California</b>	Includes the zones associated with NP15 and ZP26; commonly identified as the PG&E service area.


 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
<b>Electrical System Emergency</b>		<b>Distribution Restriction: None</b>	

<b>Regional Reserve Deficiency</b>	When Regional Reserve Requirements and Load Demand exceed available resources and congestion restricts the movement of resources into a specific region						
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">▪ Region</th> <th style="text-align: center;">▪ Definition</th> </tr> </thead> <tbody> <tr> <td>Northern California</td> <td><b>(NP15 + ZP26) Includes the zones associated with NP15 and ZP26; commonly identified as the PG&amp;E service area.</b></td> </tr> <tr> <td>Southern California</td> <td><b>(SP15 – ZP26) Includes the zone associated with SP15, but does not include ZP26; commonly identified as the SCE and SDGE service area.</b></td> </tr> </tbody> </table>	▪ Region	▪ Definition	Northern California	<b>(NP15 + ZP26) Includes the zones associated with NP15 and ZP26; commonly identified as the PG&amp;E service area.</b>	Southern California	<b>(SP15 – ZP26) Includes the zone associated with SP15, but does not include ZP26; commonly identified as the SCE and SDGE service area.</b>
	▪ Region	▪ Definition					
Northern California	<b>(NP15 + ZP26) Includes the zones associated with NP15 and ZP26; commonly identified as the PG&amp;E service area.</b>						
Southern California	<b>(SP15 – ZP26) Includes the zone associated with SP15, but does not include ZP26; commonly identified as the SCE and SDGE service area.</b>						
<b>Regional Reserve Emergency</b>	Can be declared by the Shift Supervisor when a Regional Reserve Deficiency exists.						
<b>Regional Reserve Requirements</b>	The Reserve Requirement that is necessary for a region.						
<b>Southern California</b>	Includes the zone associated with SP15, but does not include ZP26; commonly identified as the SCE and SDGE service area.						
<b>System Reserve Deficiency</b>	A condition when the system has less than the Reserve Requirements.						
<b>Transmission Emergency</b>	<p>Any event that threatens, harms, or limits capabilities of any element of the transmission grid and threatens grid reliability, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Transmission line overloads or loss</li> <li>• Transmission path overloads or loss</li> <li>• Transformer overloads or loss</li> <li>• Instability</li> <li>• Frequency deviations or decay</li> <li>• Voltage that exceeds limits</li> <li>• Fires, earthquake, severe weather, sabotage, terrorism</li> </ul>						

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
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### Version History

Version	Change	By	Date
1.0	Drafted		3/19/00
1.5	Format, Update		6/1/00
1.6	Edited		8/24/00
1.7	Revised curtailment percentages for 2001, revised Emergency notice wording and added extension notices, minor edits		2/7/01
2.0	Combined E-504 into E-508 and added 48-Hour, 24-Hour, Update and 1-Hour Probability Notices		6/14/01
3.0	Edited- additional actions for emergencies noted, details added in E-508B		10/25/01
4.0	Added System Emergency section and Transmission Emergency section.		8/1/03
4.1	Annual review, reformatted.		12/13/04
4.2	Instructed the Shift Supervisor to have the Transmission Dispatcher send out a WECCNet message when issuing AWE notices for anticipated Load reductions.		2/10/06
4.3	Corrected various capitalized terms		2/27/06
4.4	Updated WECCNet message guidance.		6/13/06
4.5	Added CAISO NERC Certified RT Operating Personnel to Responsibility section.		11/15/06
4.6	Added note for Shift Supervisor to analyze staffing, supplies, services and support. Added Transmission Dispatcher and Market Operator detail to issue WECCNet messages and AWE Notices to various notice issuance sections. Updated "CAISO NERC Certified RT Operating Personnel" description / responsibility		5/18/07
4.7	Added instruction to request Reliability Coordinator to declare an energy or capacity emergency prior using non-interruptible load as Contingency Reserves.		5/16/08
4.8	Removed instruction put in version 4.7		6/10/08
5.0	MRTU - Deleted HA, added HASP, deleted Must Offer		4/1/09
5.1	Minor Revisions		9/14/09

 <b>California ISO</b> Your Link to Power	<b>OPERATING PROCEDURE</b>	<b>Procedure No.</b>	E-508
		<b>Version No.</b>	5.1
		<b>Effective Date</b>	9/14/09
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## Technical Review

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Reviewed By Content Expert	Signature	Date
Ops Support		
Operations Compliance		
Regional Transmission		
Grid Ops		
Market Ops		
Scheduling		

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## Approval

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Approved By	Signature	Date
Manager, Operations Compliance		
Director of Grid Operations		

## Appendix

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Attachment A: [Involuntary Load-Reduction Worksheets](#)

Attachment B: [Alert/Warning/Emergency \(AWE\) Guide](#)

**Attachment B is not posted due to systems security restrictions**

Attachment C: [Electrical Emergency Notices](#)

Attachment D: [CAISO Switching and System Emergency Declaration Guidelines](#)

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