 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Purpose

Describes the Load Reduction Programs available to the CAISO during periods when:

- 1) Available resources are insufficient to maintain adequate Operating Reserves,


OR

- 2) The CAISO is operating under a Transmission Emergency

The two Load Reduction programs available to the CAISO include:

- Stage 1 Flex Alert
- Utility Distribution Center (UDC) Interruptible Service Program


Note: for emergency manual load shedding refer to [E-502, Emergency Manual Load Shedding](#).

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

1. Stage I Emergency is Declared

Stage 1 Flex Alert

Step	CAISO 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>A Stage 1 Emergency is declared and it is expected that Operating Reserves will decline further,</td> <td>Direct the GRC Desk to issue curtailment requests via a Stage 1 Flex Alert.</td> </tr> </tbody> </table>		If...	Then...	A Stage 1 Emergency is declared and it is expected that Operating Reserves will decline further,	Direct the GRC Desk to issue curtailment requests via a Stage 1 Flex Alert.
If...	Then...					
A Stage 1 Emergency is declared and it is expected that Operating Reserves will decline further,	Direct the GRC Desk to issue curtailment requests via a Stage 1 Flex Alert.					
Step	CAISO GRC Desk Actions					
2	Issue Stage 1 Flex Alert (when directed by the Shift Supervisor) with as much advanced notice as possible, but there is no lead-time requirement.					
3	Issue Stage 1 Flex Alert on Business Days prior to 1700 hours for the current operating day using the browser-based AWE Application, which issues an email, voice, and/or an text message to device addresses contained in a pre-defined group broadcast list contained in the MIR3 Dialogic System.					
4	Issue only one Stage 1 Flex Alert reduction request per operating day for any amount of hours required.					
5	Specify the start and end time of the requested Stage 1 Flex Alert curtailment.					

	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

2. Stage 2 Emergency is Declared or is Unavoidable

Utility Distribution Center (UDC) Interruptible Service offers a remedy for Operating Reserve emergencies and Transmission Emergencies. (refer to section 3).


Interruptible Service Program

Interruptible Service can require substantial amounts of time to fully implement, and is best used when the need is anticipated in advance. Accordingly, implementation of the Interruptible Service will be initiated when qualifying Emergency conditions are forecast, or during more rapid onset of Emergency conditions which are expected to be of sufficient duration to make the use of Interruptible Service a feasible option.

In all cases, prior to reduction of firm native Demand, the interruption of all available Interruptible Service will be requested. It is recognized that such requests may occur simultaneously. The timing of Interruptible Service contracts may not allow as rapid a response as is required to meet operating needs and a request for reduction of firm native Demand may be the only available and timely option. In such cases when firm native Demand must be reduced for system requirements, the UDCs shall interrupt all applicable Interruptible Service in addition to amounts requested for firm native Demand.


Step	CAISO Shift Supervisor Actions	
1	If... A Stage 2 Emergency is declared and is expected to continue for at least 60 min., OR a Stage 2 Emergency is forecasted, AND all potential added resources have been considered (e.g. out-of-market),	Then... Determine the amount of Interruptible Service to be interrupted in each UDC area (CAISO responsibility).
2	Verify the maximum amount of energy requested from each UDC is not exceeded or the limitations and conditions not violated (refer to Attachment B, UDC Interruptible Service Limitations and Conditions).	
3	Verify (periodically, through the UDC) the Availability Limitations of the Interruptible Service contract have not been exceeded for each UDC that will be dispatched (refer to Attachment B, UDC Interruptible Service Limitations and Conditions).	
4	Dispatch (via telephone) the amount of Load that needs to be interrupted from each UDC.	

Continued on next page

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Continued from page 3


Step	PTO/UDCs Actions					
5	Implement the Interruptible Service curtailment for the amount and at the time confirmed with the CAISO.					
6	Inform the Interruptible Service Customers of real time conditions affecting the probability and duration of the curtailments (using the Alert, Warning, and Emergency notices as guidelines).					
Step	CAISO Shift Supervisor Actions					
7	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e0f7fa;"> <th style="text-align: center;">If...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> Operating Reserve is restored due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency, </td> <td style="padding: 5px;"> THEN release the UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency). </td> </tr> </tbody> </table>		If...	Then...	Operating Reserve is restored due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency,	THEN release the UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency).
If...	Then...					
Operating Reserve is restored due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency,	THEN release the UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency).					
8	Restore <u>all</u> firm native Demand <u>prior</u> to restoring any Interruptible Service.					
9	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e0f7fa;"> <th style="text-align: center;">If...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> The Stage 2 Emergency is downgraded and the Interruptible Service program is no longer needed to maintain adequate reserves, </td> <td style="padding: 5px;"> Direct the UDC to restore all Interruptible Service Demand. </td> </tr> </tbody> </table>		If...	Then...	The Stage 2 Emergency is downgraded and the Interruptible Service program is no longer needed to maintain adequate reserves,	Direct the UDC to restore all Interruptible Service Demand.
If...	Then...					
The Stage 2 Emergency is downgraded and the Interruptible Service program is no longer needed to maintain adequate reserves,	Direct the UDC to restore all Interruptible Service Demand.					
Step	PTO/UDCs Actions					
10	Restore <u>all</u> firm native Demand <u>prior</u> to restoring any Interruptible Service (as directed by the CAISO).					
11	Restore interrupted Demand in amounts and time frames as directed by the CAISO.					

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

3. Curtailment of Interruptible Service for a Transmission Emergency

PG&E, SCE and SDG&E Interruptible Service Programs enables reduction of Demand to mitigate a Transmission Emergency. The time required to achieve Demand reduction is extensive and its use must be appropriately anticipated.

Step	CAISO Shift Supervisor Actions					
1	<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>Non-firm Load relief is required in a particular geographic area to mitigate a localized transmission constraint or a system under-voltage condition,</td> <td>Request UDCs to curtail only those non-firm customers within the applicable Non Firm Groups as listed in Attachment C, UDC Interruptible Service Curtailment Groups.</td> </tr> </tbody> </table>		If...	Then...	Non-firm Load relief is required in a particular geographic area to mitigate a localized transmission constraint or a system under-voltage condition,	Request UDCs to curtail only those non-firm customers within the applicable Non Firm Groups as listed in Attachment C, UDC Interruptible Service Curtailment Groups .
If...	Then...					
Non-firm Load relief is required in a particular geographic area to mitigate a localized transmission constraint or a system under-voltage condition,	Request UDCs to curtail only those non-firm customers within the applicable Non Firm Groups as listed in Attachment C, UDC Interruptible Service Curtailment Groups .					
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>The Transmission Emergency conditions return to acceptable limits due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency,</td> <td>Release UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency).</td> </tr> </tbody> </table>		If...	Then...	The Transmission Emergency conditions return to acceptable limits due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency,	Release UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency).
If...	Then...					
The Transmission Emergency conditions return to acceptable limits due to the implementation of Interruptible Service, AND firm native Demand had previously been interrupted due to the sudden onset nature of the emergency,	Release UDCs to restore appropriate amounts of firm native Demand (refer to Procedure E-508, Electrical System Emergency).					
3	Restore <u>all</u> firm native Demand <u>prior</u> to restoring any Interruptible Service.					
4	Direct PG&E to restore all Interruptible Service Demand.					
Step	UDC Actions					
5	Restore <u>all</u> firm native Demand <u>prior</u> to restoring any Interruptible Service (as directed by the CAISO).					
6	Restore interrupted Demand in amounts and time frames as directed by the CAISO.					

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	


Supporting Information

History

- The Stage 1 Flex Alert (formally known as the Voluntary Load Reduction Program) is intended to provide an additional level of Demand reduction on the system and can be implemented in real time after declaring a **Stage 1 Emergency**. The Stage 1 Flex Alert is administered by the state-run Flex Your Power program manager and is a purely voluntary program. The program participants are not compensated for load reduction and there is no obligation by program participants to reduce Demand by any set amount. There is no estimate of the amount of Demand relief that may be achieved under the Stage 1 Flex Alert.
 - The UDC Interruptible Service Program is a UDC program and was developed through arrangements with subscribing end-use customers under special UDC tariffs within the jurisdiction of California Public Utilities Commission (CPUC). This program may be called in real time after declaring a **Stage 2 Emergency or Transmission Emergency**, or by the UDC's for their own purposes. The sections of this procedure that discuss the Interruptible Service Program address the general amount of its availability, as well as the process and time constraints of its implementation.
-

Affected Parties

- **Market Participants**
 - **Stage 1 Flex Alert Participants**
 - **Scheduling Coordinators**
 - **IOU Utility Distribution Companies**
-

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	


Responsibilities

Shift Supervisor	After declaring a Stage 1 Emergency, directs implementation of VLRP. After declaring a Stage 2 Emergency, directs implementation of the UDC Interruptible Service Program.
GRC Desk	After declaring a Stage 1 Emergency, requests Voluntary Load Participants to reduce Load through the VLRP, after receiving instructions from the Shift Supervisor.
Utility Distribution Company (UDC)	After receipt of Interruptible Load requests by the CAISO, contacts Interruptible Load customers to instruct the amount of Load to be curtailed. Confirms with the CAISO the amount of Interruptible Load that is available and the expected reduction in their individual area.
Interruptible Load Customers	After being instructed by their UDC, reduces their Demand to the level required by their UDC contract.
Stage 1 Flex Alert Participants	After receiving curtailment requests from the CAISO through the <i>Flex Your Power</i> program manager, curtails their respective Loads by the amount they are willing to make available.

References

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

CAISO Operating Procedure	E-502, Emergency Manual Load Shedding
CAISO Operating Procedure	E-507, Emergency Response Team Procedure
CAISO Operating Procedure	E-508, Electrical Emergency Plan
CAISO Operating Procedure	E-509, Restricted Maintenance Operations

	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Policy


The CAISO minimum Operating Reserves will be maintained, as described in the Western Electricity Coordinating Council (WECC) Minimum Operating Reliability Criteria (MORC). In extreme cases, reserves may be forecast to drop below the MORC requirement level, and it is CAISO policy to utilize the available Load Reduction Programs to avoid violation of MORC requirements. If a Stage 1 Emergency is declared, the CAISO will first utilize the additional Demand relief offered through the Voluntary Load Curtailment process to prevent further degradation of the Operating Reserve margins. Should Operating Reserve margins drop lower and a Stage 2 Emergency is declared, the CAISO will initiate the UDC Interruptible Service Program. It is the CAISO policy to only interrupt firm Load as the last option for maintaining minimum acceptable Operating Reserve levels.

Definitions

Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff will have that meaning when capitalized in this Operating Procedure.


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

UDC Interruptible Service Program	Offers a near-last-resort remedy for Operating Reserve emergencies and, in the case of Interruptible Service offered by PG&E, for relief of transmission overloading and, in some cases, undervoltage conditions.
Voluntary Load Participant	End-Use Customers who have agreed to receive reduction requests from the CAISO and reduce Loads on an uncompensated, free-will basis.

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Version History

Version	Change	By	Date
1.0	Drafted		6/2/00
2.0	Section 2.3- DRP no longer implemented as immediate. Section 2.4-removed "quickly as possible" Section 2.5-ditto Section 2.6-now requires 30 minutes notice to extend interruption duration Section 3.1-ditto		7/1/00
4.0	Added E-506, UDC Interruptible Service contents to this procedure. Added Discretionary Load curtailment Program.		7/11/01
4.1	Removed Voluntary Demand Response Program (VDRP), program ended. Added Legacy Energy Group to Attachments H and I.		7/18/01
4.2	Changed the DLCP confirmation responsibility from the Hour Ahead Desk to the Help Desk. Changed the responsibility for issuing DLCP requests from the Senior GRC to the Hour Ahead Desk.		8/2/01
5.0	Removed Demand Response Program and Discretionary Curtailment Program, program termination times were up. Removed attachments associated with these programs.		3/31/02
5.1	Annual review, no changes		4/28/04
6.0	Changed title "Load Curtailment" to "Load Reduction" and added contact information for the California Manufacturers and Technology Association		7/23/04
6.1	Annual review, information mapped.		3/1/05
6.2	Changed VLRP to "Stage 1 Flex Alert". Withdrew E-511A since the VLRP program no longer exists.		8/17/07
6.3	Annual review – no changes		6/5/08


 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Technical Review

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

Approval

Approved By	Signature	Date
Director of Regional Transmission		
Director of Grid Operations		

 California ISO Your Link to Power	OPERATING PROCEDURE	Procedure No.	E-511
		Version No.	6.3
		Effective Date	6/5/08
Load Reduction Programs		Distribution Restriction: NONE	

Appendix

Attachment B: [UDC Interruptible Service Limitations and Conditions](#)

Attachment C: [UDC Interruptible Service Curtailment Groups](#)
