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Appendix **16**

Purpose

This procedure defines the actions performed by the California ISO (CAISO) and other entities to prepare for and report natural disasters, major outages, damage or destruction of BES (Bulk Electric System) equipment, and other Significant Events that affect the reliability of the grid.

1. Responsibilities

Scheduling Coordinator (SC) **Metered Sub System (MSS)** **Participating Generator (PG)** **Participating Transmission Owner (PTO)** **Small Utility Distribution Company (SUDC)** **Utility Distribution Company (UDC)**	Provide complete and timely notifications of Significant Events to the CAISO in accordance with CAISO procedures and DOE, NERC, and WECC requirements. Refer to CAISO Operating Procedure 4110A DOE, NERC, and WECC Significant Event Reporting Requirements to determine responsibilities for submitting required DOE and/or NERC reports.
CAISO System Operator	Provide complete and timely notifications of Significant Events to all applicable internal and external parties in accordance with CAISO procedures and DOE, NERC, and WECC requirements.
CAISO Manager, Balancing Authority (BA) Operations	Direct CAISO System Operator actions to manage Significant Events in accordance with CAISO Emergency Procedures and as otherwise necessary and appropriate for the prevailing conditions. Provide complete and timely notifications of Significant Events to all applicable internal and external parties in accordance with CAISO, DOE, NERC, and WECC requirements. Refer to CAISO Operating Procedure 4110A DOE, NERC, and WECC Significant Event Reporting Requirements to determine DOE, NERC, and WECC reporting requirements. Responsible for filing the initial DOE report as outlined in the procedures.
CAISO Joint Information Center (JIC) Lead	Serve as the information conduit between the CAISO Manager of BA Operations and internal and external stakeholders. Additionally, the JIC Lead, or their designee is responsible for notifying the Corporate Incident Commander directly if there is a System Operations incident that meets the criteria for being tracked or managed at the enterprise level. Initiates notification processes to internal and external stakeholders.

	Responsible for accumulating event information to prepare an external message, notifying regulatory agencies and others of operational events.
Communications Director	The Communications Director is responsible for representing the CAISO to media and news outlets via interviews and approved press releases, as well as internal employee communications.
CAISO Government Affairs	Inform the Governor's office, legislators, state, and federal agencies of power system conditions that significantly impact the public and/or require direct involvement of government entities.
CAISO Officers	Notify Board of Governors and/or external stakeholders as deemed necessary.
CAISO Incident Commander	Upon activation of the corporate incident management and response process, the Incident Commander leads the corporate incident management team during the response to and recovery from a disruptive incident that may impact the CAISO's business operations or reputation.

2. Scope/Applicability

2.1. Background

The CAISO Tariff requires entities within the CAISO Balancing Authority Area to promptly notify the CAISO of Significant Events that pose a threat to the reliability of the grid. In addition, NERC and the DOE have established requirements for reporting such events to NERC, DOE, WECC and other federal and state agencies. Generally, responsibility for the reporting events is detailed in CAISO Operating Procedure 4110A DOE, NERC, and WECC Significant Event Reporting Requirements. The CAISO is responsible for satisfying the reporting and notification requirements stated in this procedure.

2.2. Scope/ Applicability

The CAISO makes an assessment and prepares for potential adverse operating conditions such as extreme weather conditions, wildfires, earthquakes, flooding, tsunamis, GMD (Geomagnetic Disturbance), etc. that may potentially threaten elements of the BES. The CAISO reports Significant Events that occur within the CAISO Balancing Authority Area that may be of interest and/or require action by state agencies.

PTOs, UDCs, SUDCs, SCs on behalf of PGs, and MSSs report Significant Events that threaten grid reliability, which may cause interest and/or action by the CAISO, or may result in peril to life, property, or grid resources within the CAISO Balancing Authority area.

Additionally, the CAISO has a corporate incident management and response process in place utilizing the ICS to manage incidents with a greater corporate impact or for those incidents that may impact the CAISO's reputation.

3. Procedure Detail

3.1. Preparing for an Event

Take the following actions whenever a potential adverse operating condition exists:

CAISO System Operator
1. **Notify** the CAISO Manager of BA Operations of potential event.

CAISO Manager, BA Operations
1. In collaboration with System Operators and appropriate personnel, • **Assess** the potential risk to the CAISO Controlled Grid and the BES based on the information available. • During the assessment, ○ **Consider** the following: – Lines or equipment that may be threatened – Location impacted – Estimated time the event will occur – Ability to sustain the loss / recover 2. **Communicate** notifications as needed, as outlined in Section 3.2. ***Note**: All notifications of a Significant Event must also be reported to the Reliability Coordinator and affected parties.*[1] 3. **Prepare** for credible BES failures identified in the risk evaluation or in response to a request or Operating Instruction by the Reliability Coordinator. 4. **Monitor** available information regarding the status of the event and 5. **Continue to evaluate** the risk and 6. **Take** appropriate actions as needed. 7. **Direct** System Operators to take mitigation actions, as needed. 8. **Refer** to CAISO Operating Procedure 4420B Emergency Guide, and other area specific procedures, as needed.

[1] EOP-011-4 R1.2.1, R2.2.1

3.1.1. Additional Preparation for Natural Disasters and Extreme Weather Events

In addition, perform the following actions in preparation for or in response to fire, flood, earthquake, tsunami, or any other potential natural disaster.

3.1.1.1. Fires

CAISO System Operator

In the event of a fire that is a potential threat to the BES:

1. **Gather** the following information, if possible:
   - Name of fire
   - Location (include city or county, nearest streets, roads, or highways, USGS coordinates, as possible)
   - Estimated size (in acres) of fire
   - Direction fire is burning
   - Approximate wind conditions
   - Fuel source (grass, brush, timber, etc.)
   - Agencies responding or already on scene
   - Facilities involved or threatened
   - Distance fire is from facilities
   - Estimated containment time
   - First report or an update
2. When communicating with Cal Fire, PTOs, and any other entity providing information regarding major facilities (500 kV, 230 kV, or radial fed generating stations or substations),
   - **Provide** all known information, and
   - **Communicate** any additional information, in a timely manner.
3. If a fire is burning in the vicinity of lines or facilities, but is not an immediate threat to an element of the BES:
   - **Continue** to **monitor**, **assess** conditions, and **plan** accordingly.
   - **Provide** updates as needed until the fire is considered contained or is no longer burning in the vicinity of the lines or facilities.
4. If a fire is burning in the vicinity of lines or facilities and it is an immediate threat to an element of the BES,
   - **Consider floating** the lines to prepare for losses and/or path derates.
5. If a fire is burning in the vicinity of lines or facilities from one of our Adjacent Balancing Authorities or PTO's,
   - **Ensure** Cal Fire is aware of the fire and is in contact with the appropriate entity or the lead regional/state/federal agency.

3.1.1.2. Flooding

CAISO Manager, BA Operations
In case of potential flooding: 1. **Calculate** the total generation capacity and **estimate** the amount of load that may be impacted by the flood in the watch/warning area. 2. **Consider committing** additional generation resources (outside the flood area) in the event generation in flood area is forced offline. 3. **Gather** the following information, if possible: • Area affected by the flooding • Expected duration of flooding • Expected long-term damage caused by the flooding • Plan of action to mitigate damage • Assisting outside agencies

3.1.1.3. Earthquake

***Note**: Although earthquakes are unpredictable, the CAISO System Operator should prepare for aftershocks. It is highly likely that following an earthquake of a magnitude greater than 5.0 in or near a population center, some areas may be experiencing various levels of Emergency Operation.*

CAISO Manager, BA Operations
In case of earthquake: 1. **Gather** the following information, if possible: • Condition of the BES • Damage to the BES caused by the earthquake • Units available for dispatch ETR (Estimated Time to Return) for generation tripped or forced offline Stations being staffed • Preparation for aftershocks

3.1.1.4. Tsunami

***Note**: The CAISO relies on facility owners to perform tsunami risk analysis of their assets and communicate their plan of action back to the CAISO.*

CAISO Manager, BA Operations
In case of Tsunami warning: 1. **Gather** the following information, if possible: • Expected time the tsunami will arrive • Facilities being removed from service or de-rated • Efforts to mitigate damage • Expected long term damage

3.1.1.5. Extreme Weather Events

***Note:** There were no notable events when cold weather had significantly restricted the generation in CAISO Controlled Grid.*

CAISO Manager, BA Operations
In case of extreme cold weather: 1. **Gather** the following information, if possible: • Expected time the of the extreme cold weather start and duration • Facilities being affected removed from service or de-rated 2. **Consider** • actions to minimize generation outages • declaring restricted maintenance operations • potential gas supply issues and coordination

3.1.2. Events that Require Notification from PTO, UDC, MSS, SUDC

Take the following actions regarding events that require notification to the CAISO:

Metered Sub System (MSS), Participating Transmission Owner (PTO), Small Utility Distribution Company (SUDC), Utility Distribution Company (UDC)	Time Frame for Reporting
1. **Notify** the CAISO Transmission Dispatcher by telephone of: • Any event, which requires an OE-417 or EOP-004 report to be filed.[2] **Refer** to CAISO Operating Procedure attachment 4110A DOE, NERC, and WECC Significant Event Reporting Requirements.	As soon as practicable - within no longer than one (1) hour

3.1.3. Events that Require Notification from Participating Generators

Take the following actions to notify the CAISO of events:

Scheduling Coordinator (SC), Participating Generator (PG)
1. **Notify** the CAISO Generation Dispatcher by telephone of: • Any event that results in damage or destruction to a generation Facility or adversely impacts the health and safety of personnel. • Fuel supply emergencies. • Physical threats to a BES Control Center. • Communications cannot be established with the respective SC. • The system frequency decays to 59.5 Hz, with no immediate recovery, as indicated by charts, frequency alarms, or Automatic Generation Control. • Changes to the status of AVRs or PSSs. • A change in Schedules and/or services will be required. **Fuel Supply Emergencies:** 2. If an existing, immediate, or anticipated fuel supply emergency threatens a plant's ability to run at full capacity, • **Notify** the CAISO Generation Dispatcher by telephone. 3. **Refer** to CAISO Operating Procedure 4120 Gas Transmission Pipeline System Limitations or Outages. 4. **Include** as appropriate: • Fuel inventories.

[2] Refer to the DOE website https://doe417.pnnl.gov/ and NERC requirements for EOP-004-4.

Scheduling Coordinator (SC), Participating Generator (PG)
• Hydro project water storage levels that are less than expected and may limit the output of the plant. • Emergency Generation that requires abnormal use of fuel with the potential to reduce supply or stocks to a level that may threaten the reliability or adequacy of electric service. • Expected duration of fuel supply emergency, if known. • Cause of the fuel supply emergency, if known. • Units affected by the fuel supply emergency. **Other Conditions Requiring Reports/Notifications:** 5. If conditions exist or Significant Events occur that threaten grid reliability or may cause interest and/or action by the CAISO, • **Notify** the CAISO Generation Dispatcher by telephone.

3.2. Communications between the Manager, BA Operations and the JIC Lead

Notification of potential or actual events can be to the control room or via back-office support processes. The following are examples of events where the CAISO Manager of BA Operations and Joint Information Center (JIC) Lead often have touchpoints to confirm whether there are impacts to the bulk electric system.

Events:

1. System Emergency declaration or anticipated declaration.
2. Loss of firm Load: A major Outage* or the possibility of a major Outage within a system served by CAISO Controlled Grid facilities.
3. External EOC activation: An IOU or an adjacent BA or TOP activates their EOC.
4. Emergency or Significant Event at a California Nuclear Generating Station.
5. Emergency proclaimed by the Governor and/or coordinated by California State Warning Center (Cal OES) or the CEC.
6. Natural events or disasters that may threaten the operation of the CAISO Controlled Grid or may cause a major Outage to CAISO controlled grid facilities or BAs.
7. Application failures that threaten or cause a disruption to grid reliability, control room performance, or markets.

8. Any condition that threatens or causes harm to life, property or resources within the CAISO BAA or causes interest and/or remedial action by the state agencies, public safety agencies, or other select organizations.
9. Any event that although it does not meet the criteria 1-9, may attract news media coverage.

   Examples of such events are:

   - Fires/Wildfires/Explosions
     - Fires, whether wildfire driven or by some other cause, and explosions at or near grid connected facilities
   - Earthquake/Tsunami/Natural Disasters
     - Earthquakes of greater than 6.0, Tsunami warnings along the West coast, or unanticipated natural disasters
   - Cybersecurity/Terrorism
     - Threats of illegal activity for the purpose of fraud, extortion, or terrorism or technological failures that result in or are perceived to result in possible impacts to the grid.

10. Any other events as determined by the CAISO Manager of BA Operations.
11. Flex Alerts
12. EEA 1, 2, and 3.
13. Transmission Emergency.

Note: Major Outage - Consistent with Public Utilities Code Section 349, a Major Outage occurs when at least ten (10) percent of the serviceable customers of the entity providing the local distribution service (i.e., Utility Distribution Company (UDC) experience a simultaneous, non-momentary interruption of service. For UDCs with fewer than 150,000 customers within California, a Major Outage occurs when fifty (50) percent of the UDC's serviceable customers within California experience a simultaneous, non-momentary interruption of service.*

CAISO Manager, BA Operations
1. **Notify** the on-duty JIC Lead of the event. 2. If attempts to contact the on-duty JIC Lead are unsuccessful using all available contact information, or the JIC Lead has not acknowledged receipt of the notification within 15-minutes, **contact** the back-up JIC Lead. 3. If you are unable to reach a JIC Lead, **contact** the Director of BA Operations. 4. **Maintain** close communication with the JIC Lead and Director. 5. **Report** all notifications of a Significant Event to the Reliability Coordinator.

3.2.1. Event Reporting to NERC, DOE, and Other External Parties

The CAISO has established a corporate incident management response process to manage operating events that require reporting to agencies such as NERC, DOE, WECC, law enforcement, and other state and federal agencies. A team of support personnel for Real-Time Operations that includes the JIC Lead, Communications Director, Government Affairs, CAISO Officers, and Incident commander have been designated to help manage reporting and communications with external agencies.

CAISO Manager, BA Operations
1. **Determine** whether the event requires a DOE or a NERC Event Report and, if so, which entity(ies) are responsible for filing. ***Note**: Refer to CAISO Operating Procedure 4110A DOE, NERC, and WECC Significant Event Reporting Requirements.* 2. **Complete** and **submit** a DOE OE-417 report or a NERC Event Report within the required period. ***Note:** If the report needs an update later, **email** Operations Compliance mailbox at OperationsCompliance@caiso.com for assistance.*

3.2.2. JIC Lead, Communications Director, Government Affairs, CAISO Officers Notifications and CAISO Incident Commander

Take the following actions upon notification of an event:

CAISO JIC Lead
1. **Determine** required internal and external notifications. 2. **Contact** and **update:** • "Real-Time Events" email distribution list - **Send** email with information regarding the event (Includes CAISO Officers, Communications Director, Government Affairs Director, Incident Commander, and other internal contacts). • In addition, if applicable, **send** a text message to Incident Commander and others, as needed for a heads-up to 'see email' for more details. 3. **Coordinate** with Communications Director and Government Affairs to gather information and develop talking points and other communications. ***Notes:*** • *If the corporate incident command management and response process has been activated, the coordination of all communications will be between the Incident Commander and the JIC Lead.*

CAISO JIC Lead
• *If the JIC Lead determines that SCs and Market Participants need to be notified, communication will be sent via email or* ***coordinate*** *an MNS message with a System Operator.*

CAISO Communications Director
1. **Coordinate** with JIC Lead and Government Affairs to approve and release public communications regarding the system event, including press statements. 2. **Coordinate** with the Public Information Officers at the Utilities, Media, and relevant agencies.

CAISO Government Affairs
1. **Coordinate** with JIC Lead and Communications Director to coordinate communications release with government or elected officials as appropriate to the event.

CAISO Officers
1. **Determine** whether additional notifications are required to Board of Governors and/or external stakeholders.

CAISO Incident Commander
1. **Convene** Initial Assessment Team (part of the corporate Incident Management Team) to analyze the System Operations incident details and determine whether the corporate incident management and response processes need to be activated to manage the incident.

4. Supporting Information

Operationally Affected Parties

CAISO Public

References

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

CAISO Tariff	Tariff Section 4
CAISO Operating Procedure	
NERC Requirements	EOP-004-4 R1 - R3; EOP-011-4 R1, R2 IRO-001-4 R2
WECC Criterion	
Other References	CAISO Corporate Incident Management Plan - Incident Management Plan CAISO ERC site - https://teams.oa.caiso.com/ERC/default.aspx U.S. Department of Energy Form DOE- 417 Electric Emergency Incident and Disturbance Report

Definitions

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

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

AGC	Automatic Generation Control
AVR	Automatic Voltage Regulator
BES	Bulk Electric System
CAISO	California Independent System Operator Corporation
CalOES	California Governor's Office of Emergency Services
DOC	Department Operations Center
DOE	Department of Energy

ERC	Emergency Response Coordination
ETR	Estimated Time to Return
GMD	Geomagnetic Disturbance
ICS	Incident Command System
Major Outage	Loss of service affecting 50,000 or more or ten (10) percent, whichever is greater, of the customers served by the Distribution System of a UDC.
MSS	Metered Sub System
NERC	North American Electric Reliability Corporation
PG	Participating Generator
PSS	Power System Stabilizer
PTO	Participating TO or Participating Transmission Owner
Sabotage	Any deliberate attempt or suspected attempt to disrupt the electric delivery system and any of the components thereof, including, but not limited to protection systems, metering systems, Generation systems, buildings, and communication systems vital to the operation of CAISO or an CAISO supplier energy delivery system.
SC	Scheduling Coordinator
Significant Event	Any condition that threatens or causes harm to life, property or resources within the CAISO Balancing Authority Area or causes interest and/or remedial action by the CAISO, state agencies, public safety agencies, or other select organizations.
SUDC	Small Utility Distribution Company - annual peak is less than 25 MW and is not in a local reliability area
TOP	Transmission Operator
UDC	Utility Distribution Company
WECC	Western Electric Coordinating Council

Version History

Version	Change	Date
9.2	Section 3.2, ISO Shift Manager Desk Task 3: Removed "or Director of System Operations." Section 3.2.3, Task 3: Removed 2nd bullet for "Executive Direct, System Operations." Minor format and grammar updates for consistency.	4/30/20
10.0	Periodic Review: Updated from ISO to CAISO throughout. Updated NERC EOP-004 references. Minor formatting and grammar updates.	10/28/21
10.1	Section 3.2: Replaced references to Alert, Warning and Staged Emergencies with EEA 1, 2, and 3.	5/01/22

Version	Change	Date
	Updated procedure references, including removal of references to 4110F and 4110G, as they were both retired on 2/10/22. Removed history prior to five years.	
10.2	Added extreme weather notifications and changed references for EOP-011.	4/01/23
10.3	Removed ERC references and added JIC Lead, added filing of initial DOE report to the Shift Manager responsibilities. Removed “Desk” from Shift Manager tasks and updated two instances of Generation “Desk” to Generation “Dispatcher.” Removed references of 4110C and 4110D from Appendix section, as they are being retired, effective 9/05/23. Minor format and grammar edits.	9/05/23
10.4	Replaced Shift Manager with Manager, Real-Time Operations or Manager of Real-Time Operations.	9/11/23
10.5	Periodic Review: Purpose: Defined first instance of CAISO. Section 3.2.2: Minor edits for clarification. References: Updated EOP-011 reference due to version update. Minor formatting and grammar edits and removed history prior to five years.	10/10/24
10.6	Replaced Public Information Officer and PIO with Communications Director where applicable for CAISO staff. Removed “External Affairs” from Joint Information Center Lead instances. Updated Section 3.2, removing Item 2 for filing DOE OE-417 or NERC Event Report and included examples of events not included above, but may still attract news media. Removed history prior to five years.	5/01/25
10.7	Replaced Manager, Real-Time Operations or Manager of Real-Time Operations with Manager, Balancing Authority (BA) Operations or Manager of BA Operations. Replaced Director, Real-Time Operations with Director, BA Operations. Minor formatting and grammar edits.	10/31/25
10.8	Section 3.1.3: Updated Footnote 2 with current DOE website link. Section 3.2: Updated for clarity based on current practice, including Section title. Section 3.2.2: Minor edits for clarity based on current practice and replaced "PIO's" with "Public Information Officers." Removed PIO from Definitions section.	8/27/26

5. Periodic Review Procedure

Review Criteria & Incorporation of Changes

There are no specific criteria for reviewing or changing this document, follow instructions in CAISO Operating Procedure 5510.

Frequency

Every three (3) Years.

Appendix

4110A DOE, NERC, and WECC Significant Event Reporting Requirements