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Purpose

Describes the CAISO System Operations communications policy and standards as related to the CAISO Tariff and WECC and NERC Registered Entities and establishes communication protocols.


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1. Responsibilities

CAISO System Operator	Responsible for conducting operational communications in compliance with this procedure, CAISO Tariff, WECC and NERC Reliability Standards.
Transmission Operator (TOP)	Inform the CAISO of any change or potential change in the current operating and/or communications status of a system element under the TOP operational control or controlled by a MSS, UDC, SUDC and DP, which the registered TOP represents.
Scheduling Coordinator (SC)	Inform the CAISO of any change or potential change in the current operating and communications status of any Generating Units under CAISO control.
Metered Sub System (MSS)	MSS and UDC entities coordinate with the CAISO via Scheduling Coordinators and Transmission Operators (TOPs). For Distribution Provider facilities and Generator Operators (GOPs) directly connected to an MSS or UDC distribution system, the CAISO and the UDC or MSS representatives, as applicable, will coordinate communications to avoid conflicting operating instructions.
Small Utility Distribution Company (SUDC)	MSS and UDC entities coordinate with the CAISO via Scheduling Coordinators and Transmission Operators (TOPs). For Distribution Provider facilities and Generator Operators (GOPs) directly connected to an MSS or UDC distribution system, the CAISO and the UDC or MSS representatives, as applicable, will coordinate communications to avoid conflicting operating instructions.
Utility Distribution Company (UDC)	MSS and UDC entities coordinate with the CAISO via Scheduling Coordinators and Transmission Operators (TOPs). For Distribution Provider facilities and Generator Operators (GOPs) directly connected to an MSS or UDC distribution system, the CAISO and the UDC or MSS representatives, as applicable, will coordinate communications to avoid conflicting operating instructions.
Generator Operator (GOP)	<p>A GOP shall communicate with the CAISO through its assigned SC.</p> <p>If communication methods with the Scheduling Coordinator become unavailable, then the Generator Operator shall communicate directly with the CAISO Generation Desk.</p> <p>Note: General Operator (GOP) is a NERC Registered entity. A Generator Owner (GO) should correlate with the CAISO Tariff defined entity Participating Generator Agreement (PGA). General Operators</p>

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	<i>which are not also GOPs form agreements with SCs and GOPs, as applicable, in order to fulfill their operational obligations and comply with the CAISO Tariff and NERC Standards.</i>
Distribution Provider (DP)	<p>A Distribution Provider (DP) shall communicate with the CAISO through either its assigned Scheduling Coordinator (SC) or Transmission Operator (TOP).</p> <p>If communication methods with the Scheduling Coordinator become unavailable, then the Distribution Provider shall communicate directly with the CAISO Generation Desk or Transmission Desk, as applicable.</p> <p>Note: DP is a NERC Registered entity. DPs which are not also MSSs/UDCs and/or Participating Transmission Owners (PTOs) and/or TOPs form agreements with SCs, MSSs and/or TOPs, as applicable, in order to fulfill their operational obligations and comply with the CAISO Tariff and NERC Standards.</p>

2. Scope/Applicability

2.1. Background


This procedure discusses Real-Time communication obligations between the CAISO, as a registered Balancing Authority (BA) and Transmission Operator (TOP), and its Reliability Coordinator (RC), as well as the Transmission Operators (TOPs), Generator Operators (GOPs), Distribution Providers (DPs) within the CAISO's BA (BAA) and TOP Areas, as well as adjacent BAs and TOPs.

The California ISO (CAISO) has jurisdiction for managing reliable operations within the CAISO Balancing Authority Area (BAA) and Transmission Operator (TOP) Area. Close coordination is required between the CAISO and the entities in its area. In accordance with the CAISO Tariff, the CAISO's agreements are with SCs, PTOs, UDCs and MSSs.

If there is disagreement between the CAISO and an entity relative to the action most appropriate for the reliable operation of the CAISO BAA or any sub-region thereof, and due to operating considerations there is insufficient time to reach concurrence, the CAISO will be the final authority. Inconsistent or otherwise questionable direction by the CAISO will be reviewed after-the-fact to improve coordination.

For GOPs within the CAISO BAA, during an emergency (as declared by the CAISO), the CAISO jurisdiction is expanded to include all operations of the Participating Generators, which impact or may impact the CAISO BAA. All GOPs, participating and non-participating, within the CAISO Balancing Authority area are subject to the Operating Instructions of the

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CAISO as the Balancing Authority. In cases where implementing CAISO Operating Instructions would violate safety, equipment, or regulatory or statutory requirements, the entity shall immediately inform the CAISO of the inability to perform the Operating Instructions so that the CAISO may implement alternate remedial actions.

2.2. Scope/ Applicability

The scope includes operational communications for reliability between the CAISO and SCs as related to the UDCs, MSSs, and other reliability entities, such as GOPs and DPs that those SCs represent. These operational expectations apply during normal, abnormal and emergency operations, and during periods when communications are disrupted.

3. Procedure Detail

3.1. Importance of Standard Communications


Conducting communications in accordance with the Reliability Standards and this procedure ensure that accurate data regarding Operational Events in both emergency and normal conditions is communicated and/or collected.

Regardless of the communication type, three-part-communication is highly encouraged, especially for Operating Instructions and transfer of critical information. It is mandatory when issuing and receiving Operating Instructions during all communications, especially under emergency operating conditions.

3.2. Professionalism

The following provides guidance for professional communication:

It is critical to remain professional in all verbal and electronic communications. Being professional can include being friendly, congenial, and helpful. It is important to remain neutral and factual and to not let emotions sway conversations or responses. In the event an external party's actions or comments causes concern, log the details and bring it to the attention of a manager. Adjust tone of voice to the situation, as needed (e.g. friendly, matter-of-fact, or authoritative), while still being professional.

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3.3. Types of Communications

The majority of operational communications can be grouped into two (2) categories:

1. Operating Instruction (NERC)

The CAISO, as a BA and a TOP, may issue Operating Instructions under normal, abnormal, and emergency conditions. Operating Instructions are defined as:

A command by operating personnel responsible for the Real-Time operation of the Interconnected Bulk Electric System to change or preserve the state, status, output, or input of an Element of the Bulk Electric System or Facility of the Bulk Electric System. (NERC Glossary of Terms)

2. Requests for Information

A discussion of general information and of potential options or alternatives to resolve Bulk Electric System operating concerns is not a command and is not considered an Operating Instruction.

3.3.1. Operating Instruction Guidelines

Under normal, abnormal and emergency conditions:

- The CAISO System Operator as a BA and TOP may issue Operating Instructions to its BA, TOPs, GOPs and DPs.¹
- GOPs and DPs shall comply with Operating Instructions issued by the CAISO unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements.²
- If unable to comply with the CAISO's instructions, the GOP or DP shall inform the CAISO of its inability to perform the Operating Instruction issued by the CAISO.³

The CAISO, as a BA and a TOP, shall comply with Operating Instructions issued by its RC and its TOPs unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements.⁴

- If unable to comply with RC or TOP's instructions, the CAISO shall inform the RC or TOP of its inability to perform the Operating Instruction.⁵


¹ TOP-001-4 R1, R2

² TOP-001-4 R3, R5

³ TOP-001-4 R4, R6

⁴ TOP-001-4 R3, R5, IRO-001-4 R2

⁵ TOP-001-4 R4, R6, IRO-001-4 R3

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The CAISO System Operator that issues an oral two-party, person-to-person Operating Instruction can take an alternative action if a response is not received or if the receiver did not understand the Operating Instruction.

3.3.2. Instruction Examples


Instruction Examples:

1. Operating Instruction to *Scheduling Coordinator to provide to a GOP or DP*:
 - a. Verbal Operating Instruction that is an out-of-market dispatch (i.e., a needed resource dispatch that is not part of the market optimization results and that the market will not dispatch).
 - b. Verbal Operating Instruction to follow DOT (i.e., if a generator is deviating from their dispatch and it is contributing to an overgeneration or congestion management condition).
 - c. Electronic Operating Instruction to not exceed DOT through ADS (Verbal 3 way communication is required to verify receipt)

2. Operating Instruction to *Transmission Operator*:
 - a. Verbal Operating Instruction to recall outage.
 - b. Verbal Operating Instruction requesting reconfiguration/ topology changes.
 - c. Verbal Operating Instruction that could modify powerflow or voltage.
 - d. Verbal instruction requesting emergency interruptible load drop/ demand response.

Note: *this could be dispatched via market to ADS, but if urgent and not an “economical” dispatch, it may need to be verbal Operating Instruction to help mitigate or prevent an emergency.*
 - e. Verbal instruction requesting manual firm load drop.

3. Single to multi party burst Operating Instruction:
 - a. Multiple party conference bridges.
 - b. MNS messages - follow your DOT, stay at your last DOT, follow last advisory, etc.
 - c. ADS messages (not dispatches) – follow your DOT, stay at your last DOT, follow last advisory.
 - d. Electronic Operating Instruction to not exceed DOT through ADS for grouped resources (Verbal 3 way communication is required to verify receipt from at least one entity)

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Not an Operating Instruction:

1. Dispatch Instructions:

- a. Normal market dispatch via ADS (including economic dispatches of Demand Response).
- b. Exceptional Dispatch instruction via ADS.

Note: *if there is an associated phone call, this is generally to confirm receipt of message, this confirming a Dispatch Instruction not issuing an Operating Instruction.*

2. Informational:

- a. Interchange scheduling hourly check-outs - only information exchange.
- b. Email
- c. Everbridge notice, which is generally received by subscribers via text, email or smartphone application.
- d. Reliability messaging system messages.

3.4. Three-Part Communication Requirements

Three-part communications **are** mandatory when issuing or receiving Operating Instructions during normal, abnormal and emergency conditions.⁶

Three-part communication **is** a verbal two-party, person-to-person communications protocol where information is:

- Verbally stated by the party initiating the communication.
- Is repeated back by the receiving party to the initiating party.
- Is confirmed by the initiating party if the receiving party's repeat back is correct.
- Is reissued if the repeated information is incorrect or if requested by the receiver.

Example: *Instead of instructing a unit to "go up 20," try.*

"Increase generator XYZ output by 20 MW from present value."


- Repeat, not necessarily verbatim, the Operating Instruction or Dispatch Instruction.

- Receive confirmation from the issuer that the response was correct, or request that the issuer reissue the instruction.

When issuing written or verbal single-party to multiple-party burst Instructions, under normal and Emergency conditions, the CAISO System Operator **shall verify that the Instruction was received by at least one receiver** of the Instruction.⁷

⁶ COM-002-4 R1.2, 1.3

⁷ COM-002-4 R1.4

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Examples of verification methods include, but are not limited to:

- Phone call to one intended receiver to verify receipt (e.g., Scheduling Coordinator, Transmission Operator).
- Use of the Reliability messaging system acknowledgement feature.
- Email reply acknowledging receipt.

3.5. Emergency Communications

The CAISO System Operators will **use** the Alert, Warning, & Emergency (AWE) Tool as needed to issue Emergency notifications. Subscribers receive these alerts via email and the CAISO Today app.

If the tool is unavailable, to ensure consistency, the CAISO will **refer** to the templates for AWE notifications (for example, Stage 1, 2, or 3) in CAISO Operating Procedure [4420C System Emergency Notice Templates](#).

If an emergency Operating Instruction will be issued, it should be related to the specific action(s) to be taken by the recipient of the instructions. Operating Instructions shall be:

- Issued in a clear, concise and definitive manner.
- Specifically related to the situation that needs to be addressed.
- Include times for the completion of the action by the recipient.
- Include options previously discussed and shall not include options that are not viable.

The CAISO System Operator **shall inform** the receiving party that they are about to receive an Emergency Operating Instruction prior to issuing the instructions:

- When issuing an **Emergency Operating Instruction**, both the issuer and the receiver **are responsible** for ensuring all parties use Three-Part Communication Protocol.
- Upon issuing such instructions, the CAISO System Operator must **make certain** that the recipient repeats the instructions back correctly and acknowledges the response as correct.
- If the recipient fails to repeat the instructions back correctly, the CAISO System Operator **must repeat** the instructions until any misunderstanding is resolved.
- If recipient disconnects prior to giving a repeat back, then the CAISO System Operator **shall re-establish communications** in order to receive the repeat back.


Example: “This is (CAISO Operator name) of the California ISO issuing an **Emergency Operating Instruction to (entity name) on (date & time):**

The . . . (specific situation to mitigate) . . . must (specific results needed) . . . by (time) to . . . (get this result).

I am instructing you to . . . (take specific actions) by within (minutes) or by (date & time) to . . . (get this result).”

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3.6. Primary and Alternative Interpersonal Communication Methods

In the event the CAISO Control Center phones (Primary Interpersonal Communication method) are unavailable, CAISO System Operators will communicate instructions via a multi-party burst method (refer to [Section 3.3.2](#) for examples) to external entities as soon as possible, and no more than 60 minutes from the time of detection.⁸

Instructions will be sent via ADS, Reliability messaging system, Market Notification messages (MNS) and any additional messages as necessary to instruct entities with alternative phone numbers to contact the CAISO.

The alternative methods may include, but are not limited to:

- Plain Old Telephone System (POTS)
- Cell phones
- Satellite Phones
- ADS
- MNS
- Reliability messaging system
- Everbridge

Note: *The nature of the communications outage will determine which alternative method is utilized, especially in cases where the Primary method may still be available in either the Folsom or Lincoln control center.*

If a GOP or DP detects a failure of communication capabilities with the Assigned SC or TOP, then attempt to notify the CAISO Control Room via any means possible⁹. This can be through OMS, CAISO's Service Desk or a Client Representative.

3.7. Standard Structure


Every Operational Communication should consist of a standard greeting, the message, repeat back to ensure understanding (if applicable), and a closing to indicate the end of the communication and whether any follow-up is needed by either party.

1. Standard Greeting:

- When answering a call, state "California ISO" and either your first and/or last name, for example, "California ISO Smith". In addition, if the caller does not identify him/herself, ask who is calling.

⁸ COM-001-3 R10

⁹ COM-001-3 R11

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- When making a call, state your name, California ISO, and purpose, for example, “This is John Doe at the California ISO; what were the results of the patrol?” If the party answering has not identified him/herself, ask to whom you are speaking.

2. Message:

- Open with statement of subject to be discussed.
- Provide and/or receive information.
- Be specific when giving Operating Instructions or Dispatch Instructions.
- Ask questions to obtain more detail or clarification.

3. Repeat back:

- Repeat all critical content including equipment type, identification number, location, voltage level (if applicable), and action to be taken.
- Ask for repeat back if not forthcoming.

4. Closing:

- Appropriate to situation (for example, please call me back to confirm, or I will get back to you by...).

3.8. Standard Terminology

The following provides guidance for standard terminology:

Use standard and complete terminology, avoiding profanity and slang.


All **CAISO** Operating Instructions are issued in prevailing Pacific Time unless stated otherwise.¹⁰

For Operating Instructions that are issued with a time reference, the time identification shall be in 24 hour format, with the appropriate time zone included (i.e. 17:00 PPT). Time identification is not required for Operating Instructions that are expected to be implemented immediately.

When Communicating with BES reliability entities that use unique or different terminology, **then clarify** the meaning to ensure that both parties are in agreement concerning what is being referred to.

Example: LADWP may say “work hot with a hold,” while PG&E will say “non-test.” Both refer to working on an energized line.

¹⁰ COM-002-4 R1.5

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When communicating with BES reliability entities regarding interties and/or interfaces use common identifiers for elements and facilities.¹¹

Examples: *What time was breaker 972 at Malin opened?
I understand, the East County-Miguel line relayed at...*

Use only approved acronyms that are commonly used by the other party. If there is any doubt whether the initiating or receiving party understands an acronym, then **define** it or **do not** use it.¹²

3.9. Nomenclature for Interfaces¹³

The following provides guidance for nomenclature:

- Whenever possible, when referencing transmission lines (including Transmission interface Elements and Transmission interface Facilities), the line identification shall include Terminal-to-Terminal designation, voltage level and line number.
- When referencing other equipment at a substation, the designation shall include substation name, equipment number and equipment type. Voltage level can be used as a clarifier, if needed.

When referencing a generating unit, the designation shall include the generating station name and unit number, and desired configuration (for multistage generation).

3.10. Content Restrictions

The following lists some restrictions that a System Operator must observe when communicating to external entities:

Communications with Marketing Entities (Scheduling Coordinators and Generator Owners):


The CAISO is bound by the Tariff and other regulatory requirements to limit what information can be shared. FERC Order 890 requires a separation of transmission operations from merchant operations within utilities in order to protect sensitive information. The CAISO cannot provide any confidential or commercially sensitive information that would give marketing entities an opportunity to exercise market power.

Specifically, in addition to specific bid and schedule information, the CAISO cannot reveal the name of a generating unit or transmission line that is of concern (curtailed, offline,

¹¹ COM-002-4 R1.6

¹² COM-002-4 1.2, 1.3

¹³ COM-002-4R1.6

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forced out, etc.), unless the outage is scheduled and the information has already been released to OASIS. Even then, the CAISO cannot discuss the specific type of work or equipment problems that caused the outage or are undergoing maintenance work.

Statements to Avoid

- **Avoid** providing any information to an individual Market Participant that is not already generally available to ALL Market Participants.
- **Avoid** mentioning the source of fuel for the generating unit that was forced off line.
- **Avoid** any mention of the name of a line or generating unit that has been forced out of service or curtailed in real-time.
- **Avoid** using the word “emergency” in situations when it is not called for. This term may be too inflammatory or carry with it specific meaning regarding circumstances or actions defined in the Tariff or Operating Procedures.
- **Do not provide** any assistance with bid strategy.

Communications with Reliability Entities

When communicating with Transmission Owners (TOs), Transmission Operators (TOPs), Adjacent Balancing Authorities (BAs), and Reliability Coordinator (RC) regarding situations involving system reliability, then detailed discussions can be held. Although the CAISO must always consider the prohibitions against sharing market or commercially sensitive information, with a TO, TOP, RC, or BA, the CAISO can be very specific with regard to facilities, outages, etc. in requesting actions by TOs, TOPs, RCs, and Adjacent BAs.

3.11. Use of English Language and an Alternative Language¹⁴


The CAISO Real-Time Operations will use English as the language for all communications, unless agreed to otherwise, between and among operating personnel responsible for the real-time operation of the interconnected Bulk Electric System.

CAISO Real-Time Operations may speak with CENACE dispatchers in Spanish, but all Operating Instructions and Dispatch Instructions must be stated and Acknowledged in English.

Real-Time Operations

1. Start the conversation in English to describe the situation and then agree to speak Spanish to further clarify.
2. Speak in Spanish to ensure that the CENACE dispatcher understands the situation.
3. Agree to switch back to English to give and repeat back any Operating Instructions and Dispatch Instructions.
4. State Operating Instructions or Dispatch Instructions in English.

¹⁴ COM-002-4 R1.1

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5. Make sure the CENACE Dispatcher accurately repeats back the Operating Instructions and Dispatch Instructions in English.

4. Supporting Information

Operationally Affected Parties

Shared with the Public.

References

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

CAISO Tariff	Section 1.3.2 (i)
CAISO Operating Procedure	4110 Operations Emergency Preparation Notifications and Reporting 4420 System Emergency
NERC Requirements	COM-001-3 R10, R11 COM-002-4 R1, R1.1 – 1.6 IRO-001-4 R2 - 3 TOP-001-4 R1 - 6
WECC Criterion	
Other References	


Definitions

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

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

LSE	Load Serving Entity
Operational Event	Any event involving any element, condition, operation, schedule, or occurrence related to power system operation.

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Operational Communication	Any communication pertinent to any element, condition, schedule, or occurrence related to power system operation.
Three-Part Communications	A communications protocol where information is verbally stated by a party initiating the communication, the information is repeated back by the receiving party to the initiating party, and acknowledged by the initiating party to the receiving party to ensure the accuracy of the communication.

Version History


Version	Change	Date
8.2	Section 3.10: replaced CFW with CENANCE.	12/31/2015
8.3	Section 3.4: Replaced WECCNet with Reliability Messaging Tool (RMT).	4/05/2016
9.0	Period Review Updated and clarified requirements related to COM-002-4 throughout document.	7/01/2016
9.1	Minor formatting changes throughout, added reference to Appendix document 5110A.	8/19/2016
10.0	Section 3.3 - Removed "Reliability Directive" section, added to Operating Instructions content Section 3.4 - Minor updates to clarified requirements for receiver and confirming receipt, changed directive to instruction References - Removed EOP-001-0.2b R4.1; added references to IRO-001-4 and TOP-001-3, COM-001 and COM-002. Updated formatting and grammar. Updated all references of Reliability Directive to Operating Instructions in all occurrences.	4/01/2017
10.1	Replaced NEV with NVE and added AEPSCO to Operationally Affected Parties list.	10/01/2017
11.0	Annual Review: Updated content for COM-002-4 R1.4: Page 3 Section 3.3 moved examples to Section 3.4 Communication Req. Section 3.3 changed section 2 to Operating Instructions from Reliability Directives. Minor format and grammar updates. Removed reference to procedure 5210A.	12/21/2017

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Version	Change	Date
12.0	Periodic Review: Complete re-write, no yellow highlighting Clarification between Tariff and NERC terminology. Merged relevant content from Operating Procedure 5110A into 5110 and changed Distribution Restriction to “Public”. Added additional roles in responsibility section. In Section 3.6 added “time identification.” Added Section 3.7 Nomenclature for Interfaces. Minor formatting and grammar updates. Replaced Peak RC with the RC. Removed version history prior to 3-years. Removed references of 5110A as it is retired with the publish of this procedure update.	7/01/2018
12.1	Changed title of section 3.11 and added a sentence regarding English language use.	7/20/2018
12.2	Changed PST to PPT; removed “dispatch instructions” from background section; changed “Transmission Dispatcher” to “Transmission Desk” and “Generation Dispatcher” to “Generation Desk” to match other ISO procedures. Added a clarification paragraph under Section 3.3.1. Minor format and grammar updates.	11/02/2018
13.0	Periodic Review: Replaced references of RMT (Reliability Messaging Tool) with Reliability messaging system and removed from Definitions section.	1/25/2019
14.0	Annual Review: Section 1 Responsibilities: Added TOP. Section 3.6: Changed GOP or DP failure of communication capabilities note to read failure with assigned SC or TOP. Changed references of Reliability Coordinator messaging system to Reliability messaging system for consistency. Changed review frequency from every 3 years to annual (need to capture updates based on annual review of comm protocols).	6/20/2019
15.0	Annual Review: Minor grammar changes only.	1/16/2020
15.1	Updated all CAISO/California ISO references. Minor format and grammar updates.	6/15/2020

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16.0	Annual Review: Section 3.3.2: Updated 1 & 3, adding information regarding electronic Operating Instruction. Updated instances of "ISO" to "CAISO." Version History, version 13: Corrected to read Reliability messaging system. Minor format and grammar updates and removed history prior to 5-years.	12/17/2020

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

Annual.

Appendix

No references at this time.