

 California ISO RC West	Reliability Coordinator Procedure	Procedure No.	RC0710
		Version No.	1.0
		Effective Date	10/01/26
Frequency and Voltage Ride-Through Requirements and Unexpected Event Mitigation for Inverter-Based Resources: NERC PRC-029 and PRC-030		Distribution Restriction: None	

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1. Purpose

To define the requirements and communicate the preferred mechanism for a Generator Owner (GO) submitting data and/or information to the California ISO (CAISO) as the Reliability Coordinator (RC) and/or Transmission Operator (TOP) as required per PRC-029-1 M1, R2.1.3, R2.2, R2.5, R4.2, R4.2.1, R4.2.2, and R4.3.

To define the requirements and communicate the preferred mechanism for an applicable Generator Owner (GO) submitting data and/or information to the CAISO as the Reliability Coordinator (RC), Balancing Authority (BA), and/or Transmission Operator (TOP) as required per PRC-030-1, R2.2, R3, and R4.3.

2. Introduction

The following language is shown for convenience from the NERC Reliability Standards PRC-029-1 and PRC-030-1, specifically requirements that reference the Reliability Coordinator, Balancing Authority, and/or Transmission Operator. GOs should refer to their applicable Balancing Authority or Transmission Operator for documentation of a non-fault initiated switching event or for seeking other mechanisms discussed in detailed requirements below.

NERC Reliability Standard Reference	Reference Text	CAISO Approach
PRC-029 M1	If the Generator Owner choose to utilize Ride-through exemptions that occur within the “must Ride-through zone” and are caused by non-fault initiated phase jumps of greater than 25 electrical degrees, then each Generator Owner shall also retain evidence of actual disturbance monitoring (i.e., sequence of event recorder, dynamic disturbance recorder, and fault recorder) data to demonstrate that the Inverter-Based Resource (IBR) failed to Ride-through during a phase jump of greater than or equal to 25 electrical degrees, and documentation from their Transmission Planner, Reliability Coordinator, Planning Coordinator, or Transmission Operator that a non-fault initiated switching event occurred.	GOs should refer to their applicable Balancing Authority or Transmission Operator to receive documentation information.

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NERC Reliability Standard Reference	Reference Text	CAISO Approach
PRC-029 R2.1.3	GOs have an obligation to prioritize Real Power or Reactive Power when the voltage is less than 0.95 per unit, the voltage is within the continuous operating region, and the IBR cannot deliver both Real Power and Reactive Power due to a current limit or Reactive Power limit, unless otherwise specified through other mechanisms by an associated Transmission Planner, Planning Coordinator, Reliability Coordinator, or Transmission Operator.	RC West does not have any specified mechanisms and GOs should refer to their applicable Balancing Authority or Transmission Operator. For CAISO TOP, reactive power priority and power factor limits are discussed in the Large Generator Interconnection Agreement (LGIA) section 9.6 and section for Voltage Ride-Through Capability in Appendix H. ¹
PRC-029 R2.2	While voltage at the high-side of the main power transformer is within the mandatory operation region as specified in Attachment 1, each IBR shall exchange current, up to the maximum capability to provide voltage support, on the affected phases during both symmetrical and asymmetrical voltage disturbances, either under: - Reactive Power priority by default; or - Real Power priority if required through other mechanisms by an associated Transmission Planner, Planning Coordinator, Reliability Coordinator, or Transmission Operator.	RC West does not have any specified mechanisms and GOs should refer to their applicable Balancing Authority or Transmission Operator. For CAISO TOP, reactive power priority and power factor limits are discussed in the Large Generator Interconnection Agreement (LGIA) section 9.6 and section for Voltage Ride-Through Capability in Appendix H. ²
PRC-029 R2.5	Each IBR shall restore Real Power output to the pre-disturbance or available level whichever is lesser) within 1.0 second when the voltage at the high-side of the main power transformer returns from the mandatory operation region or permissive operation region (including operating in current blocking mode) to the continuous operation region, as specified in Attachment 1, unless an associated Transmission Planner, Planning Coordinator,	RC West and CAISO TOP do not have any specified mechanisms.

¹ Refer to the LGIA link on caiso.com: [appendixx-largegeneratorinterconnectionagreement-asof-sep1-2022.pdf](https://www.caiso.com/documents/appendixx-largegeneratorinterconnectionagreement-asof-sep1-2022.pdf)

² Refer to the LGIA link on caiso.com: [appendixx-largegeneratorinterconnectionagreement-asof-sep1-2022.pdf](https://www.caiso.com/documents/appendixx-largegeneratorinterconnectionagreement-asof-sep1-2022.pdf)

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NERC Reliability Standard Reference	Reference Text	CAISO Approach
	Reliability Coordinator, or Transmission Operator requires a lower post-disturbance Real Power level requirement or requires a different post-disturbance Real Power restoration time through other mechanisms. RC West does not have any specified mechanisms and GOs should refer to their applicable Balancing Authority or Transmission Operator.	
PRC-029 R4.2	Provide a copy of the information detailed in Requirement R4.1, except for any material considered by the original equipment manufacturer to be proprietary information, to the associated Planning Coordinator(s), Transmission Planner(s), Transmission Operator(s), Reliability Coordinator(s), and the Compliance Enforcement Authority (CEA) no later than 12 months following the effective date of PRC-029-1.	Provide information as discussed below in Section 3.
PRC-029 R4.2.1	Provide any response for additional information requested by the associated Planning Coordinator(s), Transmission Planner(s), Transmission Operator(s), Reliability Coordinator(s), and the CEA to the requestor within 90 days of the request.	Provide information as discussed below in Section 3.
PRC-029 R4.2.2	Provide a copy of the acceptance of a hardware limitation by the CEA to the associated Planning Coordinator(s), Transmission Planner(s), Transmission Operator(s), and Reliability Coordinator(s) within 90 days of receiving the acceptance.	Provide information as discussed below in Section 3.
PRC-029 R4.3	Each Generator Owner with a previously accepted limitation that replaces the hardware causing the limitation shall document and communicate such a hardware change to the associated Planning Coordinator(s), Transmission Planner(s), Transmission Operator(s), and Reliability Coordinator(s) within 90 days of the hardware change.	Provide information as discussed below in Section 3.
PRC-030 R2.2	Applicable GOs have an obligation to, within 90 calendar days of a Real Power change event	Provide information as discussed below in Section 3.

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NERC Reliability Standard Reference	Reference Text	CAISO Approach
	pursuant to Requirement R1 or following a request from its associated Reliability Coordinator, Balancing Authority, or Transmission Operator that identified a Disturbance and a change in the Inverter-Based Resource(s) Real Power output, provide the analysis results to the requesting associated Reliability Coordinator, Balancing Authority, or Transmission Operator.	
PRC-030 R3	If performance issues and a need for corrective actions were identified in Requirement R2 Part 2.1.3, each applicable Generator Owner shall, within 60 calendar days of completing the analysis in Requirement R2, develop one of the following and provide it to the associated Reliability Coordinator, Balancing Authority, and Transmission Operator: • A Corrective Action Plan (CAP) for the identified Inverter-Based Resource(s), including other applicable facilities owned by the Generator Owner as identified in Requirement R2 Part 2.1.3; or • A technical justification that addresses why corrective actions will not be implemented.	Provide information as discussed below in Section 3.
PRC-030 R4.3	Each applicable Generator Owner shall, for each of its Corrective Action Plans developed pursuant to Requirement R3, notify each associated Reliability Coordinator if CAP actions or timetables change and when the CAP is completed.	Provide information as discussed below in Section 3.

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3. Roles and Responsibilities

The table below provides the roles and responsibilities associated with PRC-029-1 and PRC-030-1.

Responsible Entity	Req. No.	Responsibility
Applicable GO	PRC-029 M1, R2.1.3, R2.2, R2.5, R4.2, R4.2.1, R4.2.2, and R4.3 PRC-030 R2.2, R3, R4.3	- Provide the required information or request documentation that a non-fault initiated switching event occurred per M1, via a new inquiry to the CIDI system. For entities that do not have access to the CIDI system, please submit an email request to ServiceDesk@caiso.com with "PRC-029" or "PRC-030" verbiage in subject line. Please include the CAISO resource ID, the date of the event, and the MW drop. - CAISO Service Desk will create a ticket and assign it to the applicable team.
CAISO Operations Compliance Team for RC, BA, and/or TOP functions	PRC-029 Support for M1, R2.1.3, R2.2, R2.5, R4.2, R4.2.1, R4.2.2, and R4.3	- Provide documentation that a non-fault initiated switching event occurred per PRC-029 M1. Please see guidance above regarding RC West. Prior to providing documentation under PRC-029 M1, the Operations Compliance Team shall coordinate with applicable CAISO/RC West Operations to determine whether the event was initiated by a non-fault transmission switching action. The determination may be based on EMS sequence of events data, outage records, switching logs, disturbance monitoring data, event analysis reports, or other applicable operational records. The Operations Compliance Team shall maintain records of the basis used to support the determination. - Denote resource IDs in CAISO TOP that choose to utilize Ride-through exemptions that are COD prior to 10/1/2026. - Request analysis results per PRC-030 R2.2 that identified a Disturbance and a change in the Inverter-Based Resource(s) Real Power output.

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Responsible Entity	Req. No.	Responsibility
		Respond to data requests from GO through the CAISO CIDI system. Request additional information if needed.

4. Supporting Information

Operationally Affected Parties

CAISO Public

References

NERC Requirements	PRC-029-1, M1, R2.1.3, R2.2, R2.5, R4.2, R4.2.1, R4.2.2, and R4.3 PRC-030-1 R2.2, R3, R4.3
BA/TOP Operating Procedure	
Other References	

Definitions

The following terms capitalized in this Operating Procedure are in accordance with the NERC Glossary, and/or otherwise when used are as defined below:

Term	Description
None	

Version History

Version	Change	Date
1.0	New procedure created and issued for new NERC PRC-029-1 and PRC-030-1.	10/01/26

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5. Periodic Review Procedure

Review Criteria & Incorporation of Changes

There is no specific review criteria identified for this document.

Frequency

Review at least once every three years.

Appendix

No references currently.