New Resource Integration Protection and Control Standard Requirements Revisions

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Engagement Best Practices

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The meeting is structured to stimulate open dialogue and engage different perspectives.

The facilitator will provide guidance for comments and questions to ensure a productive flow. Please keep remarks succinct and avoid revisiting points that have already been covered, allowing space for all voices.

Closed Captioning and the Transparency Viewer are available at the bottom of the Webex screen.

Instructions for Raising Your Hand to Ask a Question

Please remember to state your name and affiliation before making your comment. After unmuting, please pause for about two seconds before speaking to ensure your audio connects clearly.

If you are connected to audio through your computer or used the 'call me' option, select the raise hand icon located on the bottom of your screen.

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You may send questions via chat to all panelists.

If you need technical assistance during the meeting, please send a chat to the event producer at Intellor Events.

FERC Order 901 was issued on October 19, 2023 to address reliability concerns associated with Inverter Based Resources (IBR). In 2025 FERC approved;

1. PRC-028-1: Disturbance Monitoring and Reporting Requirements for Inverter Based Resources

2. PRC-029-1: Frequency and Voltage Ride-through Requirements for Inverter-Based Resources

3. PRC-030-1: Unexpected Inverter-Based Resource Event Mitigation

In accordance with the NERC Implementation schedules the new IBRs must comply with these new standards on October 1, 2026.

PRC-028-1: Disturbance Monitoring and Reporting Requirements for Inverter Based Resources

Requirements R1-R7 define event recording triggers, facility signals, data granularity, time synchronism and data retention requirements .

Triggers are identified as:

- Voltage ride through events
- Inverter-based unit trips
- Over frequency and under frequency events
- AC phase overvoltage and undervoltage events
- Neutral Overcurrent

Signals include :

- Voltage, current, real and reactive power at multiple facility locations.

Data recording characteristics:

- Minimum recording rate of 64 samples per cycle
- 2 cycles pre-trigger with at least 2 seconds of data
- GPS time clock synchronized data

Continuous dynamic disturbance recording (DDR)

- Input sampling of 960 samples per second
- Record at 1 sample per cycle

Generator Interconnection Agreement Transient Data Recording Equipment Requirements

Appendix H of Appendix EE section vi, defines signal requirements.

Plant Level:

(1) Plant three phase voltage and current
(2) Status of ancillary reactive devices
(3) Status of all plant circuit breakers
(4) Status of plant controller
(5) Plant control set points
(6) Position of main plant transformer no-load taps
(7) Position of main plant transformer tap changer (if extant)
(8) Protective relay trips or relay target data

Inverter Level:

(1) Frequency, current, and voltage during frequency ride-through events
(2) Voltage and current during momentary cessation for transient high voltage events (when used)
(3) Voltage and current during reactive current injection for transient low or high voltage events
(4) Inverter alarm and fault codes
(5) DC current
(6) DC voltage

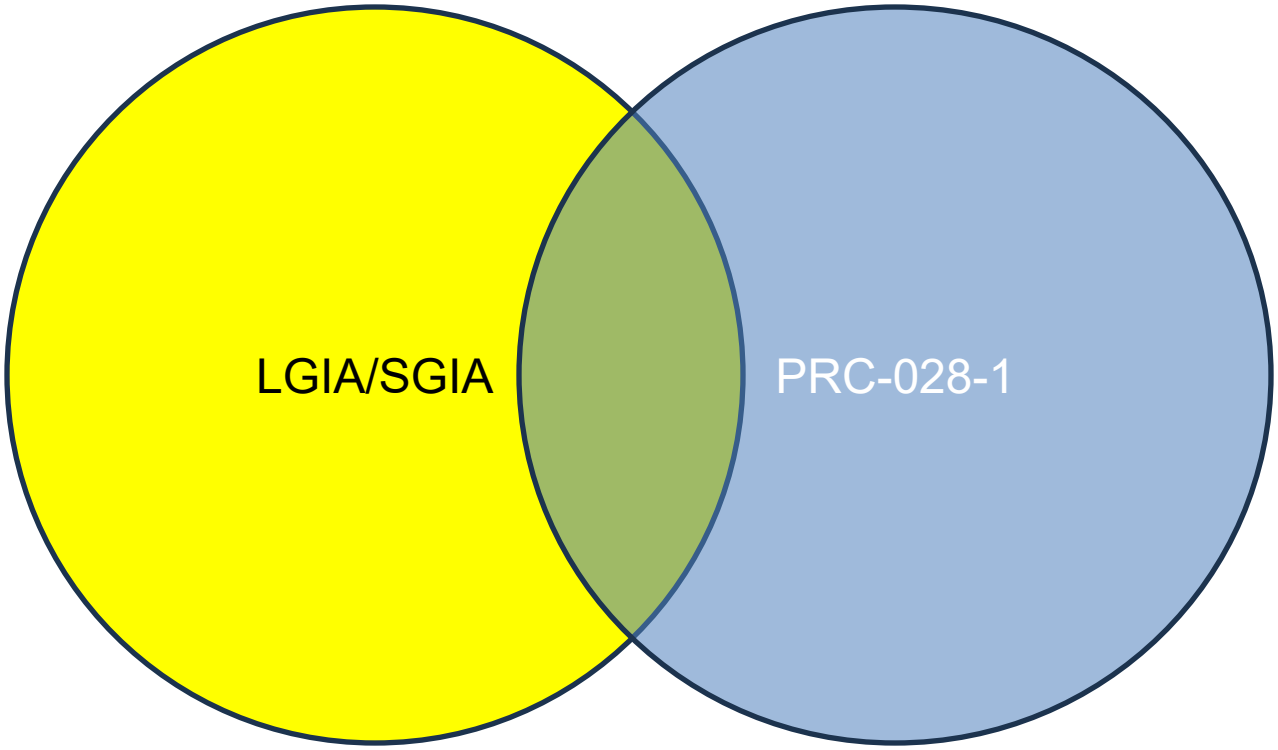
Triggers are identified as:

- Ride through events
- Inverter-based unit trips
- Overfrequency and underfrequency events

Data Recording characteristics

- All data GPS synchronized to 1ms
- Inverter data shall be recorded at 10mS intervals
- Phase angle measuring unit – not a synchrophasor unit- at facility main substation transformer.
- 150ms pre-trigger with 1 seconds of data after event trigger
- Data available within10 calendar days, available for 30 days

Disturbance Monitoring and Reporting Requirements for Inverter Based Resources in the CAISO are inclusive of both PRC-028-1 and the LGIA/SGIA



Conflicting Disturbance Monitoring and Reporting Requirements for Inverter Based Resources - Examples

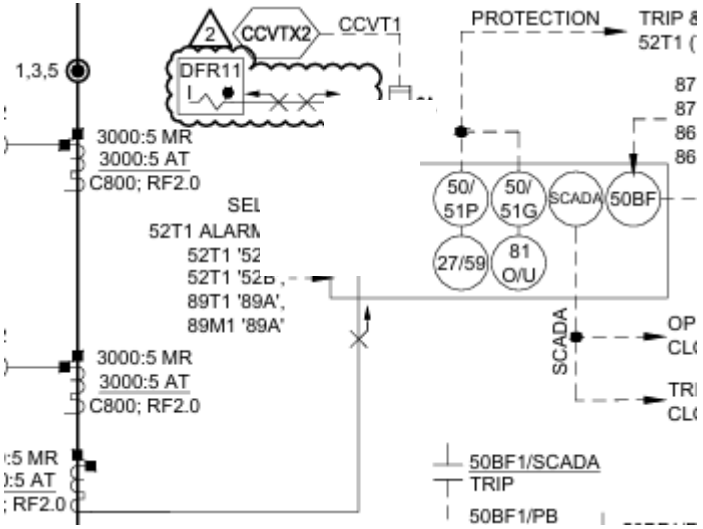
When the requirements conflict the more stringent requirement will apply;

1. PRC-028-1 does not list individual inverter data logging but the LGIA/SGIA requires specific prescriptive inverter 10ms data. LGIA requirements will be enforced.
2. PRC-028-1 requires a Dynamic Disturbance Recording (DDR) but the LGIA/SGIA does not. PRC-028-1 requirements must be implemented.
3. The LGIA/SGIA requires all data to be synchronized to within 1ms of UTC while PRC-028-1 allows IBR units to be synchronized within 100mS of UTC. LGIA requirements will be enforced.
4. The LGIA data response and date retention requirements are 10 days and 30 days respectfully. PRC-028 requires a 15 day response and the data be retained for 20 days. LGIA requirements will be enforced.
5. PRC-028-1 requires specific signals to be recorded at 64 samples per cycle while the LGIA only requires 16 samples per cycle. PRC-028-1 requirements must be implemented.

New NRI Approval process: ControlProtectionDataRecording

Documents needed to complete approval:

1. Description of the data recordation system and how the system complies with all data logging requirements.
2. Equipment configuration, signal list and trigger settings for data recording devices.
3. Single line diagram issued for protective relaying approval shall include identification of data recording signal connections.



PRC-029-1: Frequency and Voltage Ride-through Requirements for Inverter-Based Resources

- Requirements R1-R3 define ride through requirements during and after defined frequency and voltage excursions.
- Revises and replaces criteria established in PRC-024.
    - Attachment 1 : Voltage Ride Through Criteria for IBRs
    - Attachment 2 : Frequency Ride Through Criteria for IBRs
- New values do not affect LGIA ride through performance criteria
- Existing NRI process will be utilized to verify ride through settings

LGIA Appendix H requirements:

"An Asynchronous Generating Facility shall remain online for the voltage disturbance caused by any fault on the transmission grid,…having a duration equal to the lesser of the normal three-phase fault clearing time (4-9 cycles) or one-hundred fifty (150) milliseconds.

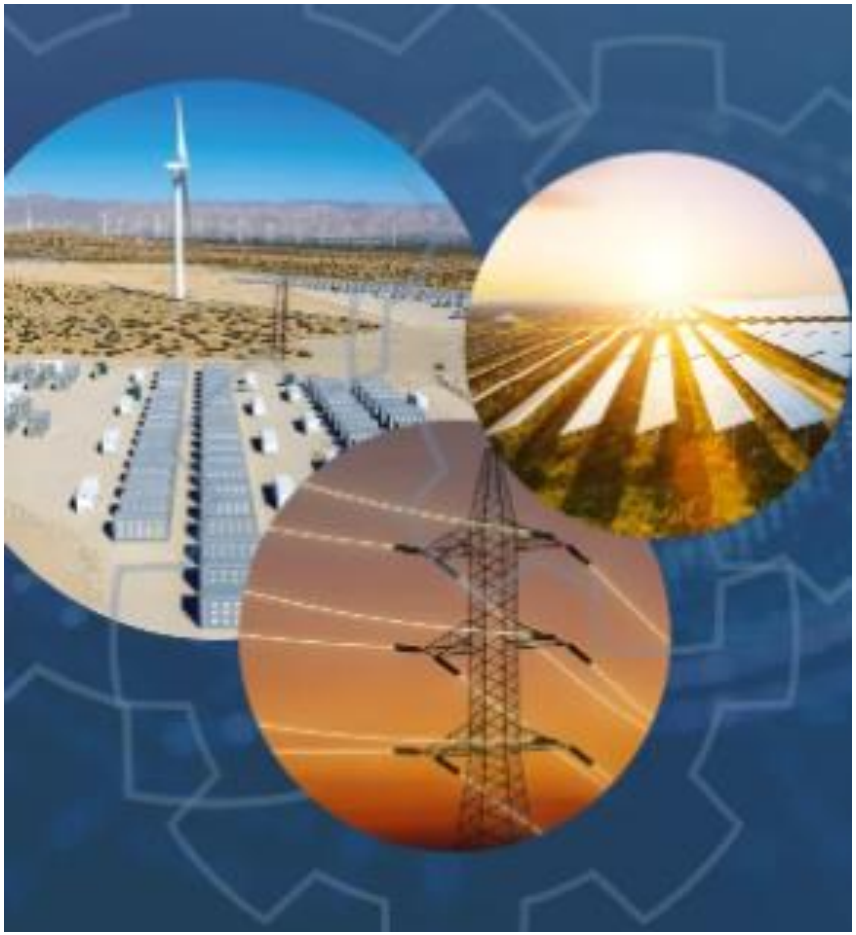
PRC-030-1: Unexpected Inverter-Based Resource Event Mitigation

- Requirements R1-R3 defines the process requirement to be put in place to identify, analyze and mitigate unexpected Inverter-Based Resource sudden changes in power output.

- The scope of PRC-030 -1 is not considered in the New Resource Integration process since it is only applicable to facilities that are operating.

Questions

New Resource Implementation (NRI) Forum
Oct. 7, 2026, 9a.m. - 4p.m.



- Please save the date for the upcoming New Resource Implementation Forum being held at the California ISO. The forum is designed for CAISO Balancing Authority Area, New Resource Implementation developers and consultants to review current processes and highlight upcoming changes.
- Overview and updates on current New Resource Implementation (NRI) processes
- Guidance on upcoming changes and implementation requirements
- Interactive discussion and optional office hours for project-specific questions with the NRI team
- Virtual and In-Person Attendance Registration Reminder:
  If you plan to attend, please register by end of day Sept. 30, 2026.

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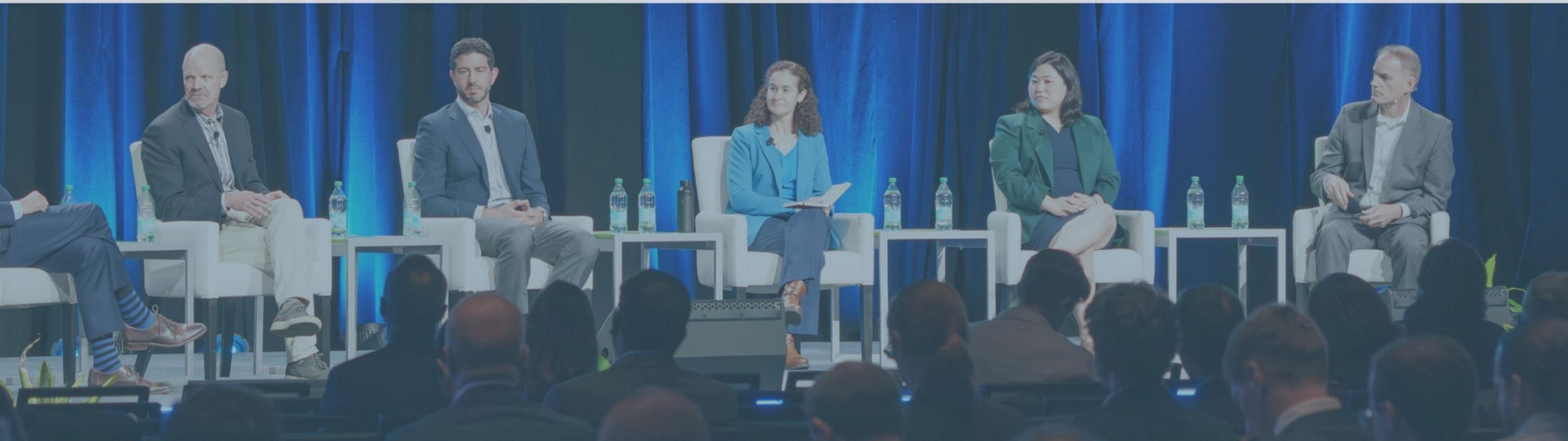
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