

RELIABILITY & SECURITY

Workshop - Portland, Oregon



October 29–30, 2024



Inverter-Based Resource Update

October 30, 2024

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Inverter-Based Resource Update

Today's discussion

- WECC Category 2 IBR registration activities
- Review of IBR Standards & Requirements
- ERO Next Steps

BAs & TOs Identified Category 2 GOs & GOPs

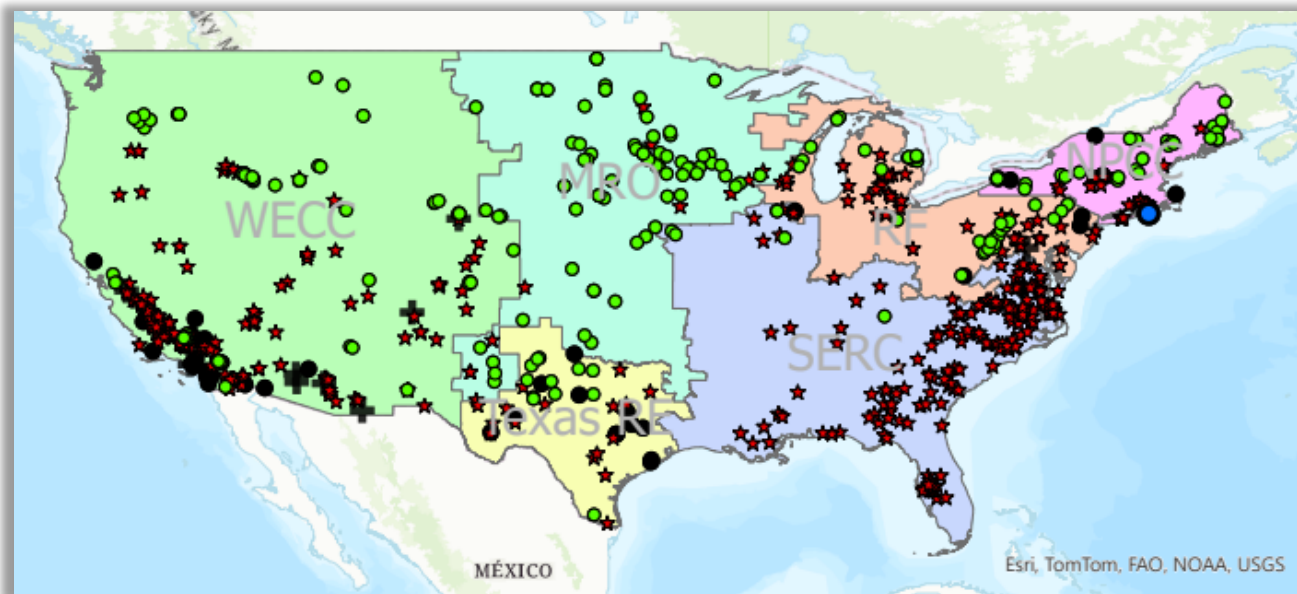
- On July 9, 2024, NERC issued an RFI to registered Transmission Owners (TO) and Balancing Authorities (BA) to identify entities that meet the registration criteria contained in the FERC-approved revisions to the [Rules of Procedure](#).
 - Over 80 RFI responses were provided to the WECC region in September 2024.
 - Around 300 Category 2 plants were reported to WECC.*



*Identified unregistered new entity count still being determined

EIA Data—Operational as of July 2024

Region	Nameplate MW (Sum) Number of Plants (Count)					Regional Summary
	Battery	Battery/PV	PV	WS	WT	
MRO	-	-	737 MW 16 Plants	-	3,148 MW 73 Plants	3,885 MW 89 Plants
NPCC	110 MW 5 Plants	-	650 MW 24 Plants	30 MW 1 Plant	1,049 MW 26 Plants	1,839 MW 56 Plants
RF	72 MW 3 Plants	22 MW 1 Plant	1,133 MW 42 Plants	-	1,686 MW 36 Plants	2,913 MW 82 Plants
SERC	56 MW 2 Plants	-	6,633 MW 164 Plants	-	375 MW 7 Plants	7,064 MW 173 Plants
Texas RE	604 MW 12 Plants	-	710 MW 16 Plants	-	553 MW 12 Plants	1,867 MW 40 Plants
WECC	848 MW 21 Plants	543 MW 11 Plants	5,821 MW 184 Plants	-	3,285 MW 81 Plants	10,497 MW 297 Plants
All Regions	1,690 MW 43 Plants	565 MW 12 Plants	15,684 MW 446 Plants	30 MW 1 Plant	10,096 MW 235 Plants	28,065 MW 737 Plants



New Entity Registration Requests

Complete Self-evaluation

- Evaluate applicability of the BES Definition, Appendix 2, and Appendix 5B registration criteria

Contact WECC with Registration Questions

- WECC may advise on applicability of registration criteria and answer process questions
- Email questions to registration@wecc.org

Submit a Registration Request Through CORES

- [How to Submit a New Registration Request in CORES](#)
- [CORES End User Guide](#)
- Add project details and relevant documents in the Comments and Attachments section in CORES

Respond to WECC Requests for Information

- WECC reviews the request and will ask for additional information as needed

Adding Assets to Existing Registration

- Footprint Change Process
 - Sign in to ERO Portal
 - Access CORES for your entity
 - Click on “Comments and Attachments” to add a description of change
 - Send an email to registration@wecc.org
 - Respond to information requests

Example of Footprint Change in CORES

Please accept this as notification of **Registered Entity Name**'s request add the **Name** facility to its registration under NCR##### as a GO/GOP with a tentative effective registration date of **MM/DD/YYYY**. The facility has a gross nameplate rating of **XXX.X** MVA and is connected to the grid at **###** kV in the WECC Region.

Entity Name is submitting the following documents pertaining to **facility name** for WECC's review:

- Generator Registration Questionnaire
- ERO Enterprise GO GOP Asset Verification Form
- As-built one-line diagram(s)
- Interconnection Agreement(s)
- O&M Agreement

Information Collected: GO/GOP Registration

CORES Required Fields

- Registered entity name
- Address
- Affiliates and holding companies
- Contact roles
- Entity scopes (registered functions)
- Functional mapping
- Comments and attachments:
 - **Comment:** describe facility project and phase(s)
 - **Attachment:** zip folder of documentation referenced on this slide

Registration Documentation Required

- Registration request form/questionnaire
- Map/geographic location of facility
- GO GOP asset verification form
- Interconnection agreements
- Third-party or operating agreements
- Operating one-line diagrams
 - Depicting the generation resource(s) through to the point of interconnection w/Transmission Owner
- Nameplate data for the individual PV inverters

Note: Provided documentation should include accurate facility profile information (such as gross nameplate rating, capacity in-service agreement limitations, and inverter information).

Resources

WECC Registration Page

- [WECC Entity-Registration](#)

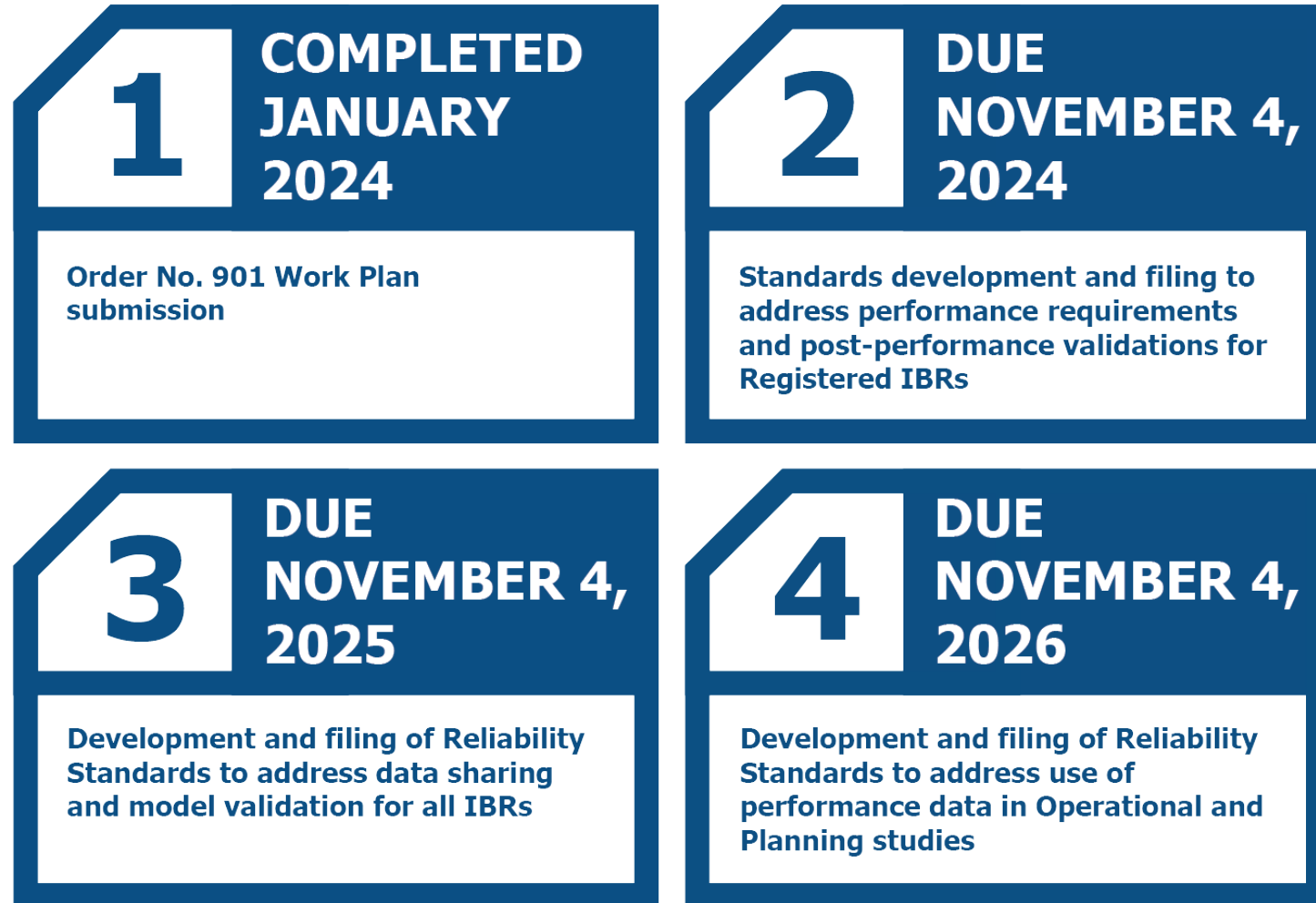
NERC Registration Page

- [NERC Organization Registration](#)

Onboarding Information

- [ERO Enterprise 101 Informational Package](#)
- [ERO Enterprise Entity Onboarding Checklist](#)
- [WECC Generator Welcome Package](#)

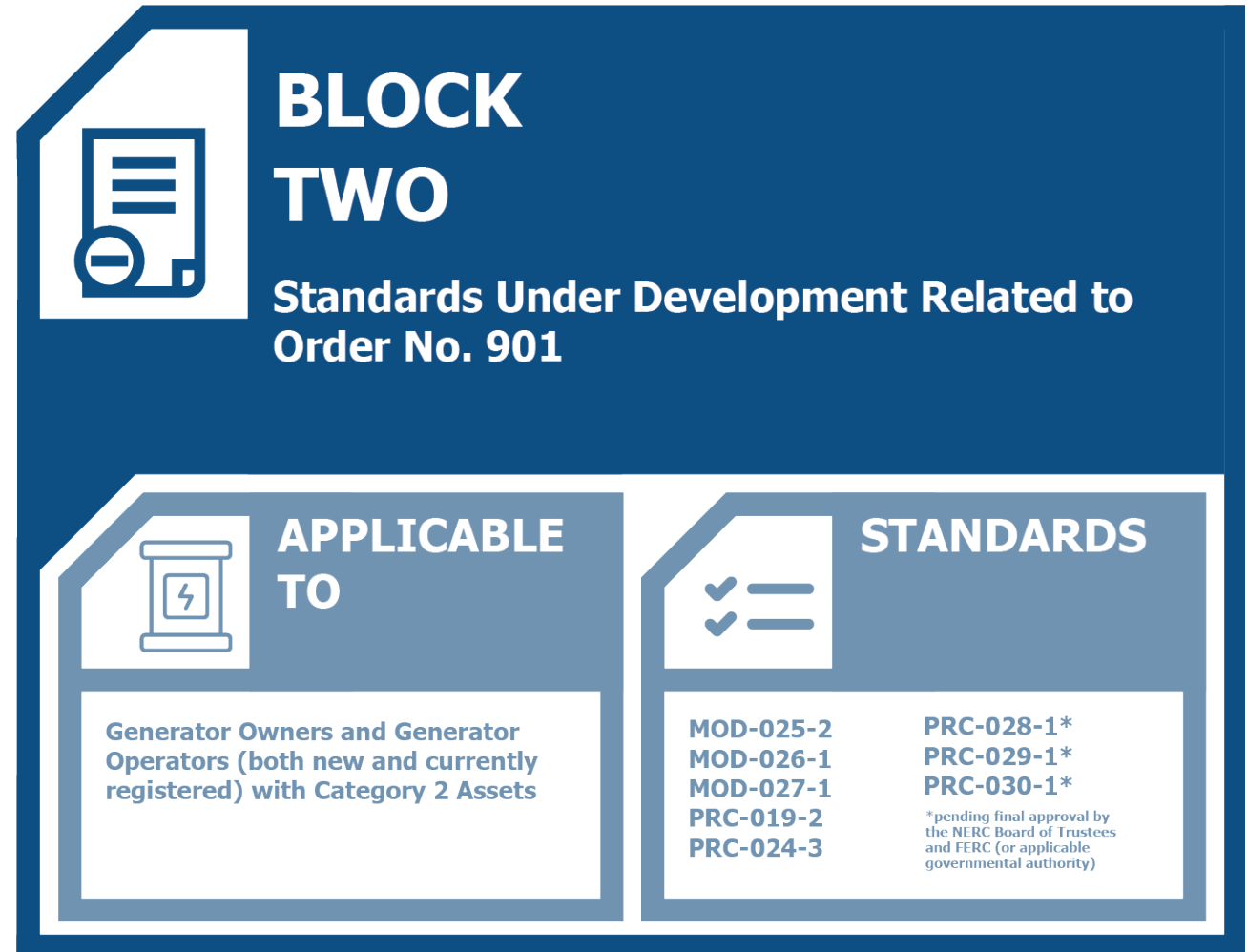
Milestones




Block Two

MOD-025 Project 2021-01 (SAR) EOY 2025
Project 2020-06 IBR Definition Only **
MOD-026 Project 2020-06 EOY 2025
MOD-027 Project 2020-06 EOY 2025
PRC-019 Project 2021-01 (SAR) EOY 2025
PRC-024 Project 2020-02 Passed **
PRC-028 Project 2021-04 Passed **
PRC-029 Project 2020-02 Paragraph 321 **
PRC-030 Project 2023-02 Passed **

** High Priority EOY 2024




Block Three




BLOCK THREE

Standards Under Development
(Technical Conference to Review)



APPLICABLE TO

Generator Owners and Generator Operators (both new and currently registered) with Category 2 Assets



STANDARDS

CIP-002-5.1a	PER-005-2
CIP-003-8	PER-006-1
CIP-012-1	PRC-002-2
COM-001-3	PRC-004-6
COM-002-4	PRC-005-6
EOP-004-4	PRC-025-2
EOP-012-1	PRC-027-1
FAC-002-4	TOP-001-6
FAC-008-5	TPL-007-4
IRO-001-4	

New Definitions (Glossary)

- Inverter-Based Resource
 - A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices
- Ride-through
 - The plant/facility remains connected and continues to operate through voltage and frequency system disturbances

Standard Footnote “Definitions”

- For this standard, the main power transformer is the power transformer that steps up voltage from the collection system voltage to the nominal transmission/interconnecting system voltage for Inverter-Based Resources. In case of dedicated VSC HVDC system connecting to an Inverter-Based Resource, a transformer isolating the DC-AC converter from the transmission system is also considered a main power transformer.
- IBR unit includes the inverter, converter, wind turbine generator, or high voltage direct current converter connecting generating resource to alternating current Transmission network.
- Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing

Collaboration

- Entity monitoring support
- Focus on preparedness
- Internal controls
 - Relationships
 - Identify assets/data/model needs and uses
 - Gather/provide assets/data/model needs
 - Communication

ERO Next Steps

- ERO IBR Registration Webinar
 - November 13, 2024, 3:00 – 5:00 p.m. EST
 - Introduction to NERC and E-ISAC
 - IBR Initiative Milestones / Workplan
 - Status and Results of ERO RFI to the BAs and TOs
 - Standards and order 901 Milestones and updates
 - Compliance and Enforcement Expectations
 - Communications Resources

ERO Next Steps

- Regional Registration Panel
 - Introductions of regional staff
 - Discuss basic regional process
 - Discuss new entity engagement through RFI and asset verification form
 - What entity information will be expected
- Next webinar February 2025 (*tentative*)



WECC Request for Information
Entities with Category 2 Inverter-Based Resources connected to the Bulk Power System
February 20, 2024

The Primary Compliance Contact
Organization Registration identifies and registers bulk power system (BPS) owners, operators and users who are responsible for performing specified reliability functions to which requirements of mandatory NERC Reliability Standards are applicable. Requirements and activities for the Organization Registration Program are embodied in Section 500 (Organization Registration and Certification) and Appendices 5A and 5B of the FERC-approved NERC Rules of Procedure (RORP).

Background
On November 17, 2023, the Federal Energy Regulatory Commission (FERC) directed NERC to submit a work plan describing how it plans to identify and register owners and operators of inverter-based resources (IBR) that are connected to and have a material impact in the aggregate on the Bulk Power System (BPS), but are not currently required to register with NERC under the bulk electric system (BES) definition. On February 15, 2024, as amended in March 2023, NERC filed a work plan outlining concepts and milestones to achieve that directive, including issuing a Request for Information (RFI) to functional entities with unregistered IBRs in their footprints. On May 16, 2023, FERC accepted the Work Plan.

On March 15, 2024, NERC filed with FERC a proposed revision to its Registry Criteria to include owners and operators of non-BES IBRs interconnected to the BPS and have a material aggregate impact on BES reliability. To address the impact on reliability, the revised Generator Owner (GO) and Generator Operator (GOO) Registry Criteria would include owners and operators of non-BES IBRs that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MW, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 40 kV (i.e., Category 2 GO and Category 2 GOO). On June 27, 2024, FERC issued an order approving the Rules of Procedure revisions¹.

Request for Information – Material Information of Category 2 Assets
As part of an RFI-wide effort to determine assets under the new Category 2 criteria, your respective regional entity needs to validate the information identified by the Transmission Owner (TO), Balancing Authority, or the Energy Information Administration (EIA).² The data indicator **Entity Name** (**Category Name**) is associated with its own Category 2 asset(s), as shown in Table 1. Please certify that the Category 2 information shown in Table 1 is correct and, if necessary, provide any revisions as redline changes to this document. Please address the requested information in Table 2 and complete the Asset Verification Form provided in this communication. Return all information to: ERO@nerc.org from Regional Registration group via the process indicated in Table 3 to your region within 14 days of this letter. Please do not return the information to NERC.

¹ NERC Rule 27 Transmittal Appendix
² <https://www.ferc.gov/energy-information-administration>

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ERO Next Steps

- Key Message: “No Reliability Standards will be applicable to IBR meeting the new registration criteria prior to May 2026.
- Following this date, NERC will work with each drafting team to encourage a reasonable rollout strategy of new or modified standards to spread out the applicability from May 2026 and beyond.”
- Key Message: Compliance will work with Registration and reach out to owners and operators of non-BES IBR, reviewing timing and obligations for existing and future enforceable Reliability Standards.



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