



# **ERO Enterprise Webinar**

Registration Process for Category 2 Generator Owner and Generator Operator Inverter-Based Resources

July 14, 2025





# NERC Antitrust Compliance Guidelines





Join at slido.com
with the code #4260684
and passcode Cat2Reg
or Scan the QR Code.







# Welcome and Opening Remarks

Jim Stuart – Director, Registration - NERC





- IBR Initiative Milestones and Workplan Overview
- Resources
- E-ISAC Overview
- Registration Process
- Q&A





# IBR Initiative Milestones/Workplan

Steven Masse – Principal Engineer, Registration - NERC

RELIABILITY | RESILIENCE | SECURITY



### **Registration of non-BES IBRs**

- FERC Order on Registration of non-BES Inverter-Based Resources, Docket RD22-4-000 (Issued November 17, 2022)
  - Modify registration process within 12 months of Commission approval of the work plan (by May 2024)
  - Identify of owners and operators of IBRs that are connected to the Bulk Power System and that, in the aggregate, materially impact the reliable operation of the Bulk-Power System within 24 months of Commission approval of the work plan (by May 2025)
  - Complete registration of unregistered IBR owners and operators so they are required to comply with applicable Reliability Standards within 36 months of Commission approval of the work plan (by May 2026)
  - Submit Work Plan updates every 90 days





### **IBR Registration Milestones**

#### Phase 1: May 2023-May 2024

- Complete Rules of Procedure revisions and approvals
- Commence Category 2 GO and GOP candidate outreach and education (e.g., through trade organizations)

#### Phase 2: May 2024–May 2025

- Complete identification of Category 2 GO and GOP candidates
- Continue Category 2 GO and GOP candidate outreach and education (e.g., quarterly updates, webinars, workshops, etc.)

#### Phase 3: May 2025-May 2026

- Complete registration of Category 2 GO and GOP candidates thereafter subject to applicable NERC Reliability Standards
- Conduct specific Category 2 GO and GOP outreach and education (e.g., quarterly updates, webinars, workshops, etc.)





- Revision to the NERC Registry Criteria for "Generator Owner" and "Generator
  Operator" to add a new category of owners and operators of unregistered bulk power
  system connected, non-BES IBRs
  - Appendix 5B, Statement of Compliance Registry Criteria
  - Appendix 2, Definitions used in the Rules of Procedure
- FERC approved these revisions on June 27, 2024





#### **Generator Owner**

### The entity that:

- 1) owns and maintains generating Facility(ies) (Category 1 GO); or
- 2) owns and maintains non-BES inverter based generating resources that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GO).





### **Generator Operator**

The entity that:

- 1) operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services (Category 1 GOP); or
- 2) operates non-BES inverter based generating resources that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GOP).





- ERO Request for Information to registered Balancing Authorities and Transmission Owners
  - Completed on September 20, 2024
- IBRs identified per Workplan Update Submitted to FERC on 5/6/2025:

REGIONAL ENTITY	NUMBER OF IBRS	MVA
MRO	118	5,130
NPCC	57	1,862
ReliabilityFirst	77	3,513
SERC	171	9,881
Texas RE	39	1,998
WECC	319	12,800
TOTAL	781	35,184

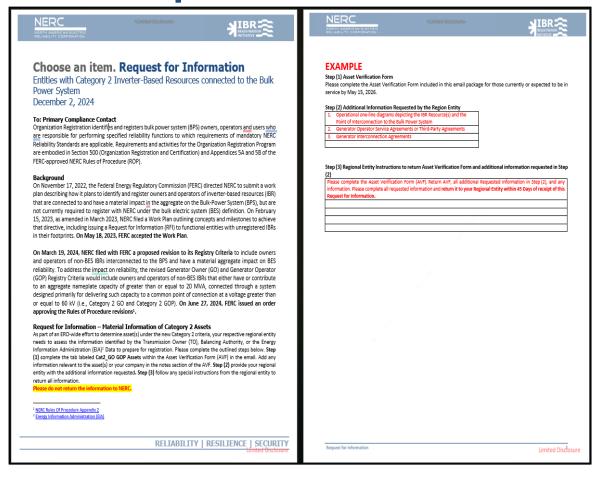
<sup>\*</sup>The numbers in this table are subject to change based on further validation.

In Progress: Regional Requests for Information to the identified Category 2
 GO Candidates





### **Request For Information**



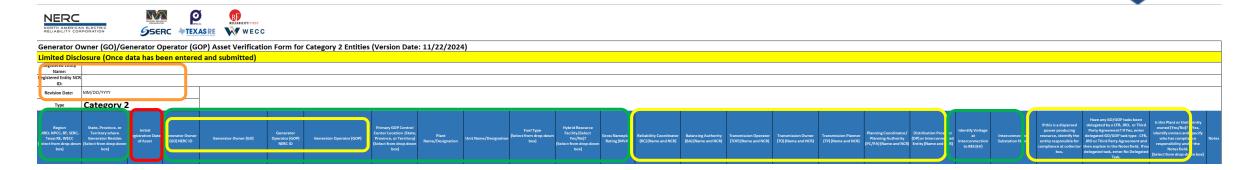
### **Regions Work Process**

- Consistent process of collecting data
  - One line diagram(s)
  - Generator Operating Agreements or Third-Party Agreements
  - Generator Interconnection Agreements
- Ongoing since December 2024
- Requested information must be returned to the sending region within 45 days.





# **GO/GOP Asset Verification Spreadsheet Tab 4b Category 2 GO GOP Assets**



#### **Entity Information**

- Registered Entity Name
- Registered Entity NCR ID
- Revision Date

Effective Date (Commercial Operations Date)

#### Relationships

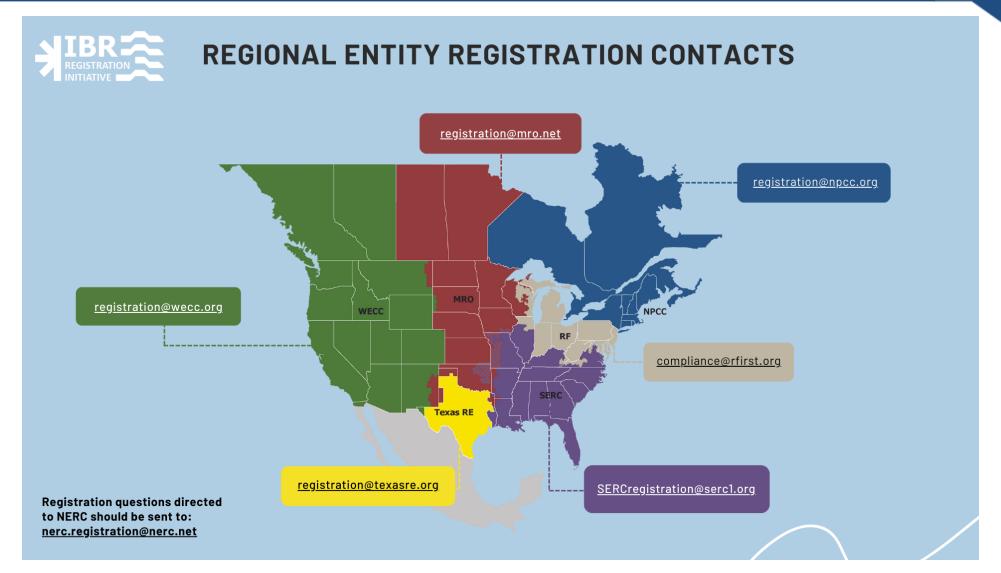
- Functional Relationships
- Responsibilities
- JRO / CFR / Third-Party Agreements
- Ownership

#### **Basic Registration Data**

- Region
- GO / GOP / NCRs
- Plant / Location (Region / State) / Unit / Type / Size / Hybrid
- GOP Control Center Location
- Connection Voltage / Location
- Generator Lead Line











# NERC NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION



### Quick Reference Guide: IBR Registration Initiative

July 2025

As part of its <u>Inverter-Based Resource Strategy</u>, NERC is dedicated to identifying and addressing challenges associated with inverter-based resources (IBR) as the penetration of these resources continues to increase. ERO Enterprise assessments identified a reliability gap associated with the increasing integration of IBRs as part of the grid in which a significant level of bulk power system-connected IBR owners and operators are not yet required to register with NERC or adhere to its Reliability Standards. In response, FERC issued an <u>order</u> in 2022 directing NERC to identify and register owners and operators of currently unregistered bulk power system-connected IBRs. Working closely with industry and stakeholders, NERC is executing a FERC-approved work plan to achieve the identification and registration directive by 2026.

This visual dashboard allows stakeholders to easily locate key project updates and resource documents and is updated regularly. Resources are also posted on the <u>Registration page</u> of the NERC website.

#### **IBR Registration Milestones**

#### Phase 1: May 2023-May 2024

Phase 2: May 2024-May 2025

- 2. Way 2024-Way 2025 Pridse 5. IWa
- Complete Rules of Procedure revisions and approvals
- Commence Category 2 GO and GOP candidate outreach and education (e.g., through trade organizations)

LEARN MORE ABOUT NERC AND THE E-ISAC X in

- Complete identification of Category 2 GO and GOP candidates
- Continue Category 2 GO and GOP candidate outreach and education (e.g., quarterly updates, webinars, workshops, etc.)

#### Phase 3: May 2025-May 2026

- Complete registration of Category 2 GO and GOP candidates thereafter subject to applicable NERC Reliability Standards
- Conduct specific Category 2 GO and GOP outreach and education (e.g., quarterly updates, webinars, workshops, etc.)

#### **Key Activities**

- NEW NERC released two <u>infographics</u> focused on making the registration process clear and accessible for new and previously registered entities.
- Visit the <u>ERO Enterprise event tracking graphic</u> to see upcoming events.

#### **Available Resources**

Learn about the ERO Enterprise and the IBR Registration Initiative: Open Letter to New Registrants | 101 Resource Document | IBR Video

Quarterly Updates: Q1 2024 | Q2 2024 | Q3 2024 | Q4 2024 | Q1 2025

Registration: ERO Enterprise CMEP Practice Guide | Quick Reference Guide: Candidate for Registration | Registration page

Standards: Reliability Standards Compliance Dates for Generator Owners & Generator Operators | Milestone 3 Summary and Infographic | Standards Under Development page

 Webinars:
 November
 2024
 Slide
 Presentation
 and

 Recording
 |
 March
 2025
 Slide
 Presentation
 and

 Recording
 |
 March
 2025
 Slide
 Presentation
 and

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION



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- Dashboard: <u>IBR Registration</u>
   Initiative Quick Reference Guide
- Quarterly Updates: Q1 2025, Q2 2025 (expected mid-July)
- Infographics and Visual Aids: Joining the ERO Enterprise | Expanding Your Registration | ERO Enterprise IBR Events | RE Registration Contacts





# **Standards Compliance Dates**

NERC

# Reliability Standards Compliance Dates or Generator Owners & Generator Operators

Inverter-Based Resource Registration Initiative Supplemental Q2 2025

#### Purpose

The North American Electric Reliability Corporation (NERC) Staff has prepared this document in support of the continued Inverter-Based Resource (IBR)¹ Registration Initiative. Information herein is intended to provide awareness to those non-Bulk Electric System (BES) IBR owners and operators that meet the recently approved registration criteria for Generator Owners (GOs) and Generator Operators (GOPs); commonly referred to as "Category 2 IBR." Further, this document includes all finalized and pending compliance dates for the applicability and enforceability of individual Reliability Standards applicable to Category 2 registration.

#### Maintenance and Updates

This document shall be maintained by NERC Standards Development, in collaboration with Registration, Compliance, Engineering, and Legal. It will be updated to align with the release of the quarterly IBR work plan information filing directed by the Federal Energy Regulatory Commission (FERC). Additionally, each release may be distributed or shared through traditional communication channels implemented by NERC and its Regional Entities. Information regarding each release can be reviewed in the Revision History section of this document.

#### **Background of Initial Analysis**

NERC Staff conducted a review of all active Reliability Standards in October 2023 to evaluate their potential applicability and enforceability to Category 2 IBR. In planning for this assessment, NERC identified that many of the active Reliability Standards refer to defined terms that could present significant challenges for the applicability of the Reliability Standards to all potential GO and GOP IBRs. In particular, multiple Reliability Standards use the term "BES" or use other defined terms in the NERC Glossary of Terms<sup>2</sup> that reference the BES. This exclusionary language created instances whereby Category 2 IBRs were excluded from applicability of certain Reliability Standards. Therefore, NERC staff conducted a more thorough review of each Reliability Standard and requirement for the potential introduction of reliability gaps, compliance gaps, or ambiguity that could lead to unacceptable discrepancies in implementation due to the exclusionary language.

https://www.nerc.com/pa/Stand/202401
%20Rules%20of%20Procedure%20Definiti
ons%20Alignment%20GO/ComplianceDat
esforGOs GOPS.pdf

<sup>&</sup>lt;sup>1</sup>As defined by the NERC Glossary of Terms, Inverter-based Resource pertains to: 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.

<sup>&</sup>lt;sup>2</sup> Glossary of Terms Used in NERC Reliability Standards; https://www.nerc.com/pa/Stand/Glossary%200f%20Terms/Glossary\_of\_Terms.pdf;



# The Electricity Information Sharing and Analysis Center (E-ISAC)

Carly Cipolla, Senior Partnerships & Engagement Coordinator Noel Lloyd, Senior Outreach & Engagement Coordinator

ERO Enterprise IBR Registration Initiative Series July 14, 2025

**TLP:CLEAR** 















#### **Vision**

To be a world-class, trusted source for quality analysis and rapid sharing of security information for the electricity industry



#### **Mission**

The E-ISAC reduces cyber and physical security risk to the electricity industry across North America by providing unique insights, leadership, and collaboration





#### Introduction

# **Protecting the North**American Power Grid

The E-ISAC's **1900+ Member and Partner organizations** represent the largest information sharing community in the energy sector and more than **7,000 E-ISAC Portal users** serve as the first line of defense for critical infrastructure.

The larger our community grows, the better we become in strengthening the security of the grid.







#### **Vendor Affiliates**



















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**SIEMENS** 











#### **U.S Government**













#### **Trade Associations**









#### **Canadian Government**



Public Safetyté publique Canada











#### **Other ISACs**









### **NERC, the E-ISAC, & You**

What is the Relationship between NERC and the E-ISAC?

- The E-ISAC is a trusted information sharing community focused on reducing cyber and physical risk to the electricity industry across North America by providing around-the-clock situational awareness, expert analysis, and opportunities to connect and collaborate
  - While the E-ISAC is "operated" by NERC, the E-ISAC is organizationally isolated from NERC's enforcement processes and does not do any compliance or enforcement monitoring
- Qualified renewable energy asset owners and operators are invited to apply for Portal access any time!
  - Learn more and submit a request to join at <a href="https://www.eisac.com/s/">https://www.eisac.com/s/</a>

#### **Share Information**

Operations@eisac.com

#### **Contact Us**

MemberServices@eisac.com





# **Offerings**



**Bulletins** 



**Briefings** 



**In-depth and Targeted Analysis** 



**Workshops and Engagement Programs** 



**Exercises And Conferences** 



**CRISP** 



**Digital Communities** 



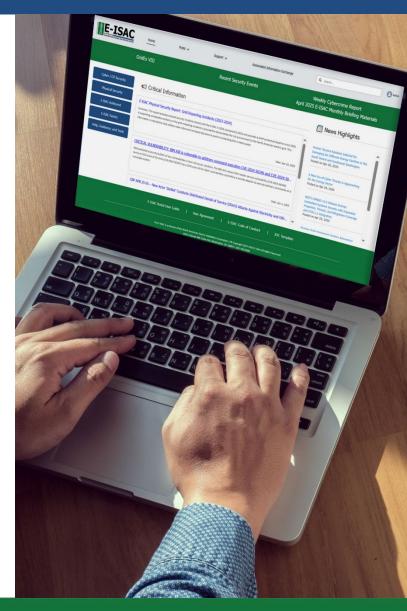
**Information Sharing Platforms** 



# **Portal Information Sharing Platform**

The Portal provides information to help its users monitor, mitigate, and respond to emerging and current threats to the grid. Through the Portal, users can voluntarily share information either with attribution or anonymously. Key items on the Portal to note:

- Exchange information with other members and with the E-ISAC
- Access E-ISAC authored bulletins and in-depth analysis
- Access CRISP (PNNL) analyst reports and related files (restricted to CRISP participants only)
- Access the ESCC contact directory (restricted to ESCC members only)
- Self-service management of your organization's profile and users/contacts
- Manage your notification preferences





# **In-Depth and Targeted Analysis**

Security Operations and Intelligence Teams deliver analysis to help members identify emerging threats, understand risk impacts and make informed decisions to strengthen security posture and operational resilience.

- Direct shares
- Cyber threat hunts
- Physical security incidents
- Threatening discourse







# **Workshops and Engagement Programs**

The E-ISAC facilitates collaboration, advances its mission, and shares critical security information through workshops that bring together industry leaders and partners to drive grid security, enhance information sharing, and foster valuable networking opportunities.

- The Industry Engagement Program (IEP) is an interactive learning experience for electricity industry analysts
- Security Advisory Groups are comprised of industry subject matter experts who serve as advisors to the E-ISAC on threat mitigation strategies and other topics related to physical and cyber security
- Security Workshops such as VISA (Vulnerability of Integrated Security Analysis) provide utilities with an effective risk mitigation tool to identify critical countermeasures and upgrades to protect their assets from a growing fleet of adversaries







### **GridSecCon**

GridSecCon is the premier security conference for the North American electric industry, co-hosted annually by NERC, the E-ISAC, and a regional partner.

- The event brings together industry leaders, security professionals, and government partners to address emerging cyber and physical threats to the bulk power system
- Through keynote addresses, technical trainings, briefings, and collaborative breakout sessions, GridSecCon fosters information sharing, operational readiness, and trusted partnerships that strengthen grid resilience
- The 14th annual grid security conference, GridSecCon, will be from October 7-10 at the MGM Grand in Las Vegas







### GridEx

Hosted every two years by the E-ISAC, GridEx gives E-ISAC member and partner organizations a forum in which to practice how they would respond to and recover from coordinated cyber and physical security threats and incidents. It is the largest grid security exercise in North America.

- GridEx VIII Planner Registration is open and will be held on November 18-19, 2025
- GridEx VII Summary: More than 15,000 participants from approximately 250 North American organizations, including the electric industry, cross-sector partners from gas and telecommunications, and U.S. and Canadian government partners, took part in GridEx VII on November 14-15, 2023. Security professionals played simultaneously in a complex and challenging scenario while adapting the exercise to meet their specific organizational needs
- GridEx Public Reports: The E-ISAC releases a public report after every GridEx.
   These reports contain lessons learned and recommendations from the exercise to help improve the security of the North American grid





### **Vendor Affiliate Program**

The Vendor Affiliate Program is focused on facilitating information sharing and best practices in a trusted environment for member and partner organizations, and leveraging the subject matter expertise and thought leadership of our vendor partners.

- Collaborative Defense: Uniting security-focused vendors and the E-ISAC community to enhance cyber and physical grid resilience
- Information Exchange: Sharing insights on vulnerabilities, supply chain risks, and emerging threats to strengthen industry-wide preparedness
- Trusted Engagement: Providing a platform for vendors to share expertise and drive security innovation









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# **Registration Process**

Kevin Koloini – Principal Engineer, Registration - NERC

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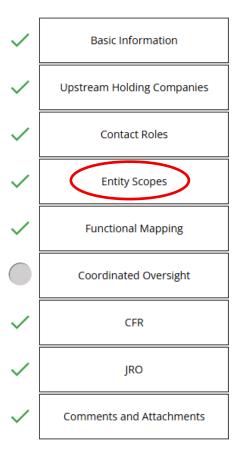
- Regional review and assessment
  - One-lines, Interconnection Agreements, Asset Verification Form, etc.
- ERO Portal / CORES
  - Entity submittal
  - Regional Approval
  - NERC Approval
- Notification letter from NERC
  - Advanced notification process from Aug 2025 to May 2026
- NCR updated and published on 5/15/26 for Category 2
  - Category 2 GO (GO-2) and Category 2 GOP (GOP-2)
    - o Effective Date 5/15/2026

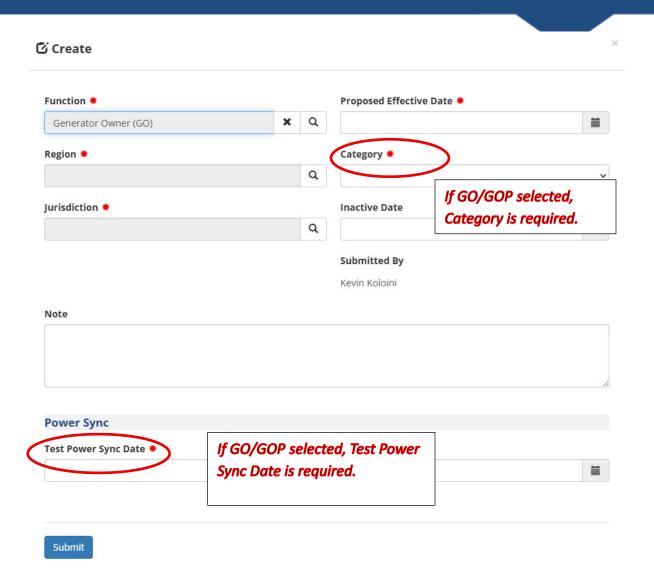




# **New Functionality in ERO Portal / CORES**

ERO Portal (<a href="https://eroportal.nerc.net">https://eroportal.nerc.net</a>)









- To ensure that we have a smooth experience for new and existing registered entities on August 1, 2025, the ERO Enterprise has initiated a trial with a select few entities.
  - These entities were identified as Category 2 entities
  - They have been asked to support the release
  - Volunteered to be the first to go through the new process

# •Thank you!!





# NERC Compliance Registry (NCR) - Updated View

- Next NCR public posting is scheduled for August 1, 2025 or sooner
- Existing GO and GOP will be relabeled as GO Category 1 (GO-1) or GOP Category 1 (GOP-1)
- This webinar and a mass communication notice will be sent
- No changes to compliance responsibilities
- Category 2 will be posted on May 15, 2026

MRO United	States					
				GO-1 (02/06/2015)	GOP-1 (02/06/2015)	
MRO United	d States		-		GOP-1 (07/01/2016)	
MRO United	States		DP (05/31/2007	GO-1 (05/31/2007)	GOP-1 (05/31/2007)	
MRO United	States					
MRO United	States			GO-1 (05/01/2019)	GOP-1 (05/01/2019)	
MRO United	States				GOP-1 (03/23/2021)	
MRO United	States	BA (05/30/2007)	DP (05/30/2007	GO-1 (05/30/2007)	GOP-1 (05/30/2007)	
MRO United	States	BA (05/30/2007)	DP (05/30/2007	GO-1 (05/30/2007)	GOP-1 (05/30/2007)	
MRO United	States			GO-1 (03/02/2021)	GOP-1 (03/02/2021)	
MRO United	States		DP (10/16/2020			
MRO United	d States		DP (05/31/2007	GO-1 (05/31/2007)	GOP-1 (05/31/2007)	





# **Next Steps with CORES**

- Full Release planned for August
   1, 2025
  - Entities can begin submitting requests
  - Regional Entities will begin processing requests.
  - User guides will and training materials will be released
- ERO Enterprise Interim Plan:
   August 1, 2025 to April 1, 2026
  - Monthly targets managed by Regional Entities



#### Joining the ERO Enterprise

Your First Step Toward Grid Reliability



#### **NERC** at a Glance

The North American Electric Reliability Organization (NERC) is an independent, notfor-profit organization whose mission is reduce risks to the reliability and security of
the North American bulk power system. Designated by the Federal Energy Regulatory
Commission as the Electric Reliability Organization (ERO) in 2006 under Federal
Power Act Section 215, NERC develops and enforces Reliability Standards; monitors
and assesses grid reliability; and educates, trains, and certifies industry personnel.
NERC's Electricity Information Sharing and Analysis Center (E-ISAC) reduces cyber
and physical security risk through information sharing, curated
analysis, and security
expertise.

#### Inside the ERO Enterprise

The ERO Enterprise encompasses NERC and six regional organizations. NERC provides industry-wide perspective and oversight, and the Regional Entities serve the needs of their regional constituents and ensure industry follows NERC Reliability Standards. While NERC and the Regional Entities play different roles, these roles are equally important and complementary, allowing the ERO Enterprise to work as one synchronous machine—effectively, efficiently, and collaboratively.













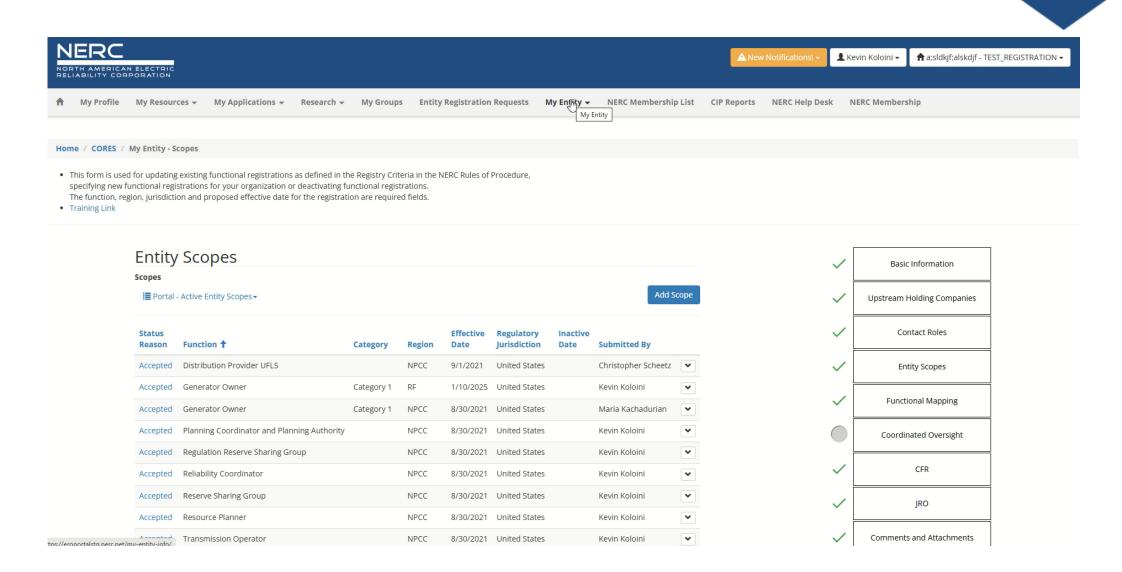


New Functionality Demo



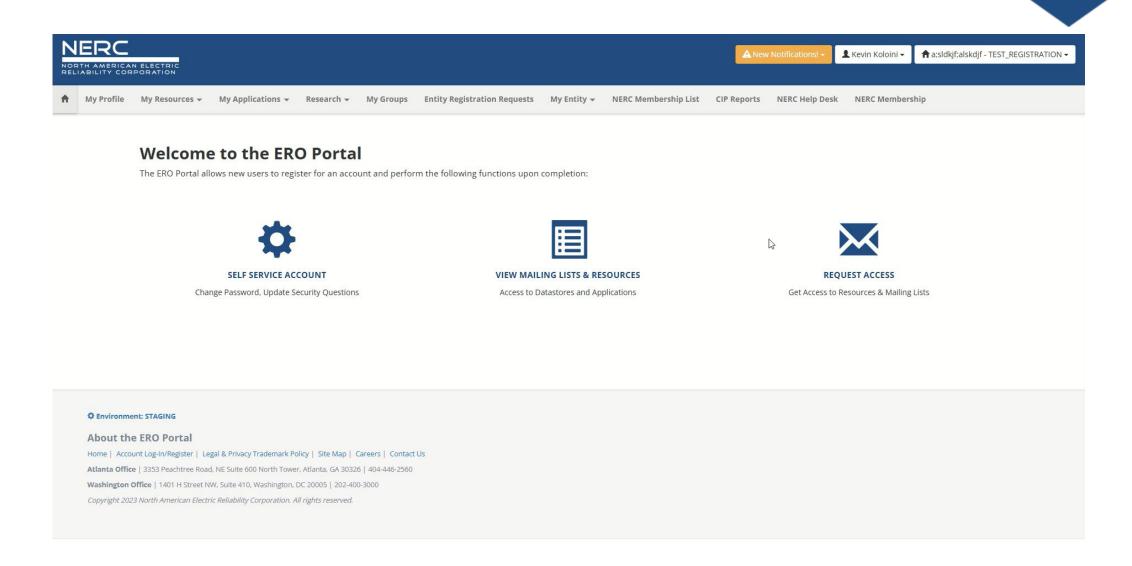


# **Existing Entity Demo Recording**





### **New Entity Demo Recording**









# **Questions and Answers**



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and passcode Cat2Reg
or Scan the QR Code.







# Closing Remarks

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