



Standards Development

**Rachel Coyne
Executive Chief of Staff**

Antitrust Admonition

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Notice of this meeting was posted on the Texas RE website and this meeting is being held in public. Participants should keep in mind that the listening audience may include members of the press, representatives from various governmental authorities, and industry stakeholders.



What Do I Need to Know?

What are Reliability Standards?

Navigating NERC's Website

- Requirement language
- Applicability
- Effective dates
- Implementation plans

Standards Development

- Process for developing standards
- How to participate



What are Reliability Standards?



NERC Glossary and ROP Definition of a Reliability Standard

A **requirement**, approved by the United States Federal Energy Regulatory Commission under Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, **to provide for Reliable Operation of the Bulk-Power System**. The term includes requirements for the operation of existing Bulk-Power System facilities, including cybersecurity protection, and the design of planned additional or modifications to such facilities to the extent necessary to provide for Reliable Operation of the Bulk Power System, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.



At a Glance

~95 Reliability Standards

Over 1600 Requirements

**Critical Infrastructure
Protection (CIP)**

Operations & Planning (O&P)



NERC Reliability Standards Categories

BAL	Resource and Demand Balancing
COM	Communications
CIP	Critical Infrastructure Protection
EOP	Emergency Preparedness and Operations
FAC	Facilities Design, Connections, and Maintenance
INT	Interchange Scheduling and Coordination
IRO	Interconnection Reliability Operations and Coordination
MOD	Modeling, Data, and Analysis
NUC	Nuclear
PER	Personnel Performance, Training, and Qualifications
PRC	Protection and Control
TOP	Transmission Operations
TPL	Transmission Planning
VAR	Voltage and Reactive

Critical Infrastructure Protection (CIP) Reliability Standards

CIP-002: BES Cyber System Categorization

CIP-003: Security Management Controls

CIP-004: Personnel & Training

CIP-005: Electronic Security Perimeter (ESP)

CIP-006: Physical Security of Critical Cyber Assets

CIP-007: Systems Security Management

CIP-008: Incident Reporting and Response Planning

CIP-009: Recovery Plans for Critical Cyber Assets

CIP-010: Configuration Change Management and Vulnerability Assessments

CIP-011: Information Protection

CIP-012: Communications Between Control Centers

CIP-013: Supply Chain Risk Management

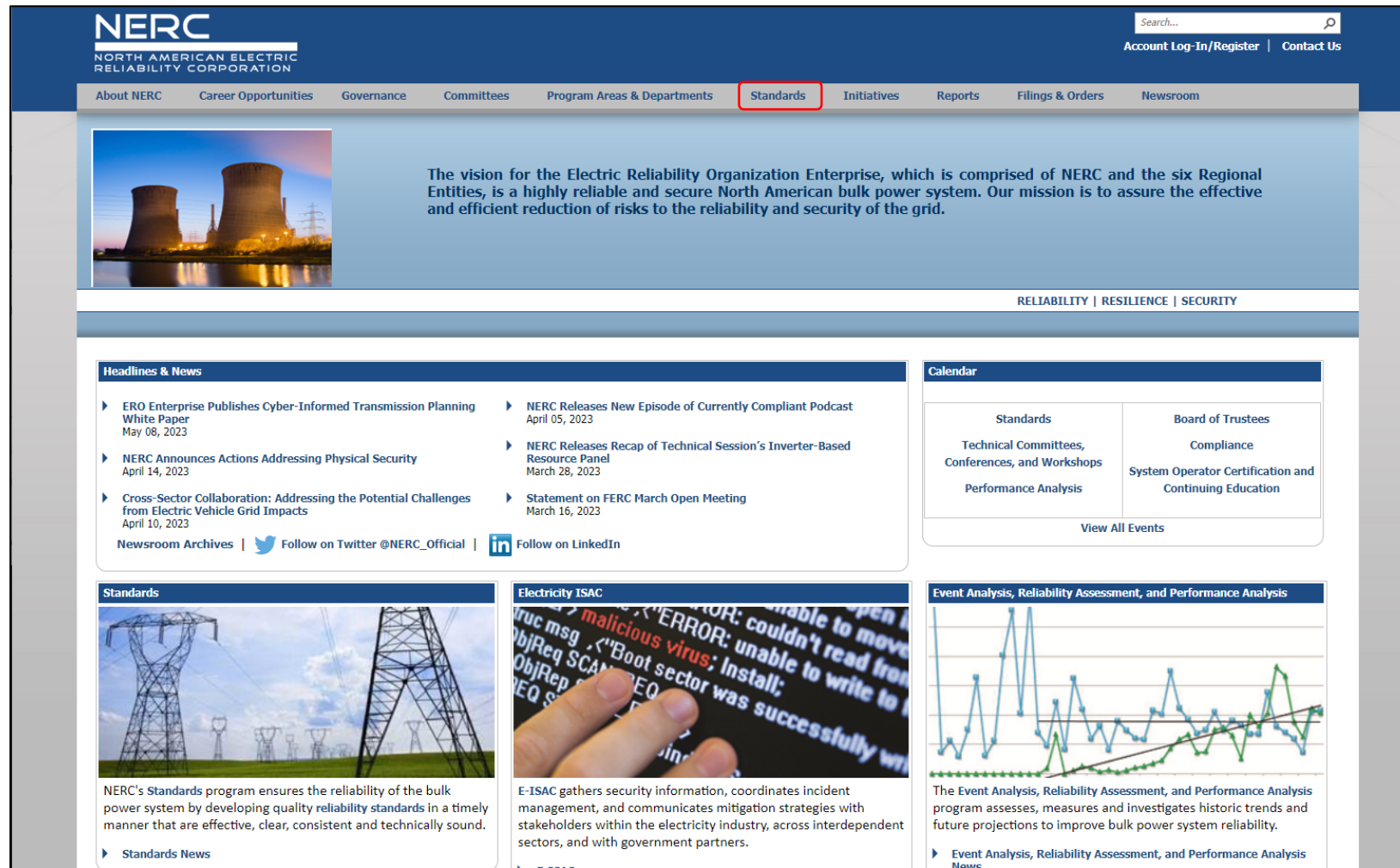
CIP-014: Physical Security



Navigating NERC's Website



NERC Standards Webpage

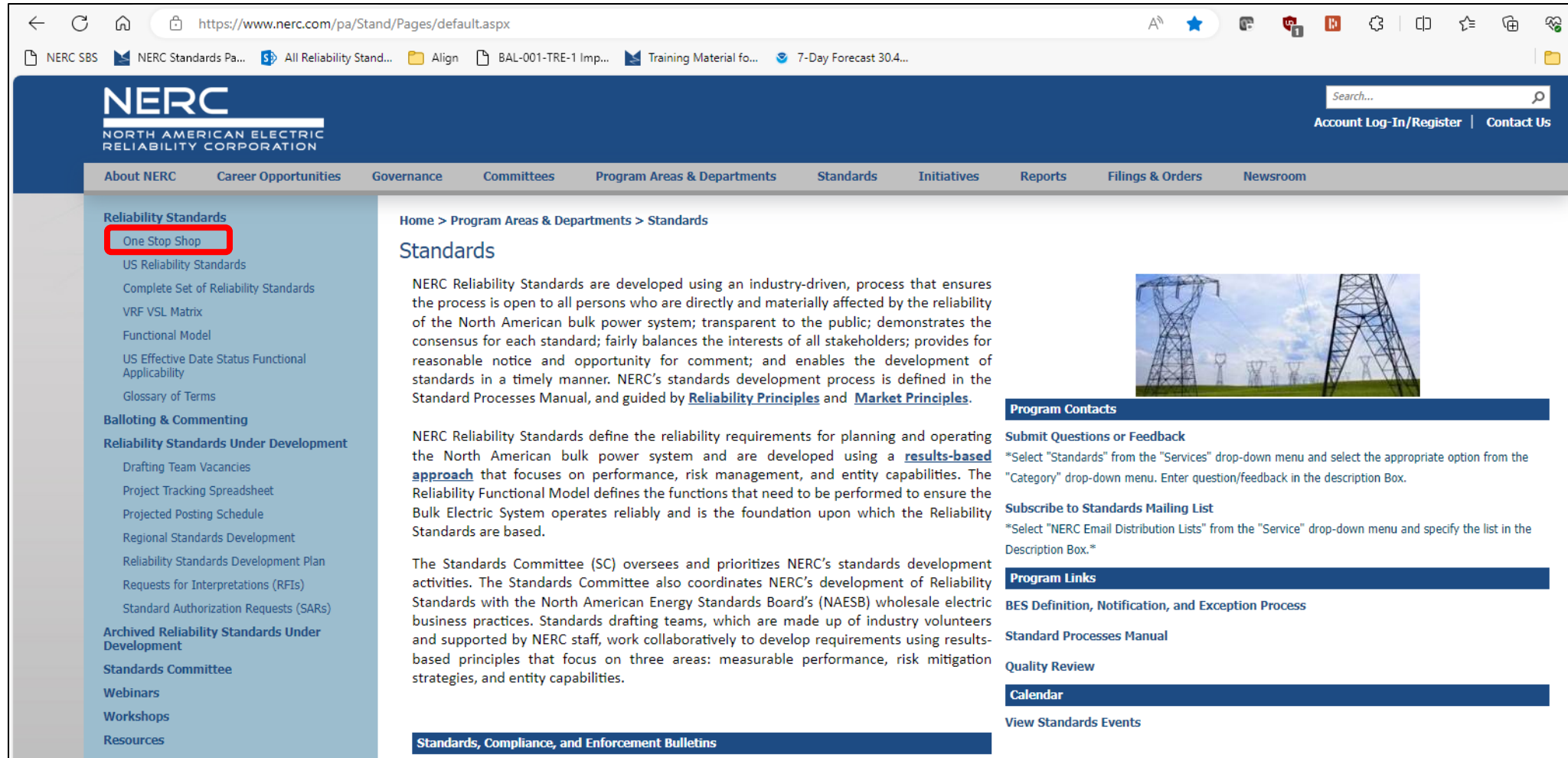


The screenshot displays the NERC (North American Electric Reliability Corporation) website. The header features the NERC logo and a search bar. The navigation menu includes links to About NERC, Career Opportunities, Governance, Committees, Program Areas & Departments, **Standards** (highlighted with a red box), Initiatives, Reports, Filings & Orders, and Newsroom. Below the navigation bar, a large banner image shows two nuclear power plant cooling towers at night. To the right of the image, text states: "The vision for the Electric Reliability Organization Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable and secure North American bulk power system. Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid." Below this banner, a horizontal bar contains the text "RELIABILITY | RESILIENCE | SECURITY".

The main content area is divided into several sections:

- Headlines & News:** A list of recent news items, including "ERO Enterprise Publishes Cyber-Informed Transmission Planning White Paper" (May 08, 2023), "NERC Announces Actions Addressing Physical Security" (April 14, 2023), and "Cross-Sector Collaboration: Addressing the Potential Challenges from Electric Vehicle Grid Impacts" (April 10, 2023). It also includes links to "Newsroom Archives", "Follow on Twitter @NERC_Official", and "Follow on LinkedIn".
- Calendar:** A table listing upcoming events, including "Standards", "Board of Trustees", "Technical Committees, Conferences, and Workshops", "Compliance", "Performance Analysis", and "System Operator Certification and Continuing Education". A "View All Events" link is provided at the bottom.
- Standards:** A section featuring an image of high-voltage power lines and a brief description of the NERC Standards program, which ensures the reliability of the bulk power system by developing quality reliability standards in a timely manner that are effective, clear, consistent and technically sound. A link to "Standards News" is provided.
- Electricity ISAC:** A section featuring an image of a hand pointing at a screen displaying error messages and a brief description of the Electricity ISAC, which gathers security information, coordinates incident management, and communicates mitigation strategies with stakeholders within the electricity industry, across interdependent sectors, and with government partners.
- Event Analysis, Reliability Assessment, and Performance Analysis:** A section featuring a line graph showing trends over time and a brief description of the program, which assesses, measures and investigates historic trends and future projections to improve bulk power system reliability. A link to "Event Analysis, Reliability Assessment, and Performance Analysis News" is provided.

Standards Webpage Navigation



The screenshot shows the NERC (North American Electric Reliability Corporation) website. The browser address bar displays <https://www.nerc.com/pa/Stand/Pages/default.aspx>. The page features a dark blue header with the NERC logo and navigation links: About NERC, Career Opportunities, Governance, Committees, Program Areas & Departments, Standards, Initiatives, Reports, Filings & Orders, and Newsroom. A search bar is located in the top right corner.

The left sidebar contains a list of links under the heading "Reliability Standards". The link "One Stop Shop" is highlighted with a red rectangle. Other links include "US Reliability Standards", "Complete Set of Reliability Standards", "VRF VSL Matrix", "Functional Model", "US Effective Date Status Functional Applicability", "Glossary of Terms", "Balloting & Commenting", "Reliability Standards Under Development" (with sub-links for Drafting Team Vacancies, Project Tracking Spreadsheet, Projected Posting Schedule, Regional Standards Development, Reliability Standards Development Plan, Requests for Interpretations (RFIs), and Standard Authorization Requests (SARs)), "Archived Reliability Standards Under Development", "Standards Committee", "Webinars", "Workshops", and "Resources".

The main content area is titled "Standards" and includes the following text:

Home > Program Areas & Departments > Standards

Standards

NERC Reliability Standards are developed using an industry-driven, process that ensures the process is open to all persons who are directly and materially affected by the reliability of the North American bulk power system; transparent to the public; demonstrates the consensus for each standard; fairly balances the interests of all stakeholders; provides for reasonable notice and opportunity for comment; and enables the development of standards in a timely manner. NERC's standards development process is defined in the Standard Processes Manual, and guided by [Reliability Principles](#) and [Market Principles](#).

NERC Reliability Standards define the reliability requirements for planning and operating the North American bulk power system and are developed using a [results-based approach](#) that focuses on performance, risk management, and entity capabilities. The Reliability Functional Model defines the functions that need to be performed to ensure the Bulk Electric System operates reliably and is the foundation upon which the Reliability Standards are based.

The Standards Committee (SC) oversees and prioritizes NERC's standards development activities. The Standards Committee also coordinates NERC's development of Reliability Standards with the North American Energy Standards Board's (NAESB) wholesale electric business practices. Standards drafting teams, which are made up of industry volunteers and supported by NERC staff, work collaboratively to develop requirements using results-based principles that focus on three areas: measurable performance, risk mitigation strategies, and entity capabilities.

On the right side of the page, there is a section titled "Program Contacts" with links for "Submit Questions or Feedback" and "Subscribe to Standards Mailing List". Below this is a "Program Links" section with links for "BES Definition, Notification, and Exception Process", "Standard Processes Manual", "Quality Review", "Calendar", and "View Standards Events".

One-Stop-Shop

What This Spreadsheet Includes:

- U.S. Status (Column A)
- Purpose of the standard (Column D)
- Effective date of standard (Column I)
- Link to standard language (Column B)
- Link to Project Page (Column N)
- Link to Implementation Plan, if applicable (Column L)
- Note whether it is a phased-in Implementation Plan (Column J)
- Link to RSAW (Column P)
- Link to Lessons Learned, if applicable (Column Q)
- Link to Compliance Guidance, if applicable (Column R)

Does Not Include:

- Phased-in implementation dates
- Comprehensive list of standards throughout (NERC) history



One-stop-shop: Locating Requirement Language

What This Spreadsheet Shows:

- U.S. Status (Column A)
- Purpose of the standard (Column D)
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Locating Requirement Language (Column B)

CIP-003-8 - Cyber Security — Security Management Controls

A. Introduction

1. **Title:** Cyber Security — Security Management Controls
2. **Number:** CIP-003-8
3. **Purpose:** To specify consistent and sustainable security management controls that establish responsibility and accountability to protect BES Cyber Systems against compromise that could lead to misoperation or instability in the Bulk Electric System (BES).
4. **Applicability:**
 - 4.1. **Functional Entities:** For the purpose of the requirements contained herein, the following list of functional entities will be collectively referred to as “Responsible Entities.” For requirements in this standard where a specific functional entity or subset of functional entities are the applicable entity or entities, the functional entity or entities are specified explicitly.
 - 4.1.1. **Balancing Authority**
 - 4.1.2. **Distribution Provider** that owns one or more of the following Facilities, systems, and equipment for the protection or restoration of the BES:
 - 4.1.2.1. Each underfrequency Load shedding (UFLS) or undervoltage Load shedding (UVLS) system that:
 - 4.1.2.1.1. is part of a Load shedding program that is subject to one or more requirements in a NERC or Regional Reliability Standard; and
 - 4.1.2.1.2. performs automatic Load shedding under a common



Locating Requirement Language

B. Requirements and Measures

R1. Each Responsible Entity shall review and obtain CIP Senior Manager approval at least once every 15 calendar months for one or more documented cyber security policies that collectively address the following topics: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

1.1. For its high impact and medium impact BES Cyber Systems, if any:

- 1.1.1.** Personnel and training (CIP-004);
- 1.1.2.** Electronic Security Perimeters (CIP-005) including Interactive Remote Access;
- 1.1.3.** Physical security of BES Cyber Systems (CIP-006);
- 1.1.4.** System security management (CIP-007);
- 1.1.5.** Incident reporting and response planning (CIP-008);
- 1.1.6.** Recovery plans for BES Cyber Systems (CIP-009);
- 1.1.7.** Configuration change management and vulnerability assessments (CIP-010);
- 1.1.8.** Information protection (CIP-011); and
- 1.1.9.** Declaring and responding to CIP Exceptional Circumstances.

1.2. For its assets identified in CIP-002 containing low impact BES Cyber Systems, if any:

- 1.2.1.** Cyber security awareness;
- 1.2.2.** Physical security controls;
- 1.2.3.** Electronic access controls;



Applicability

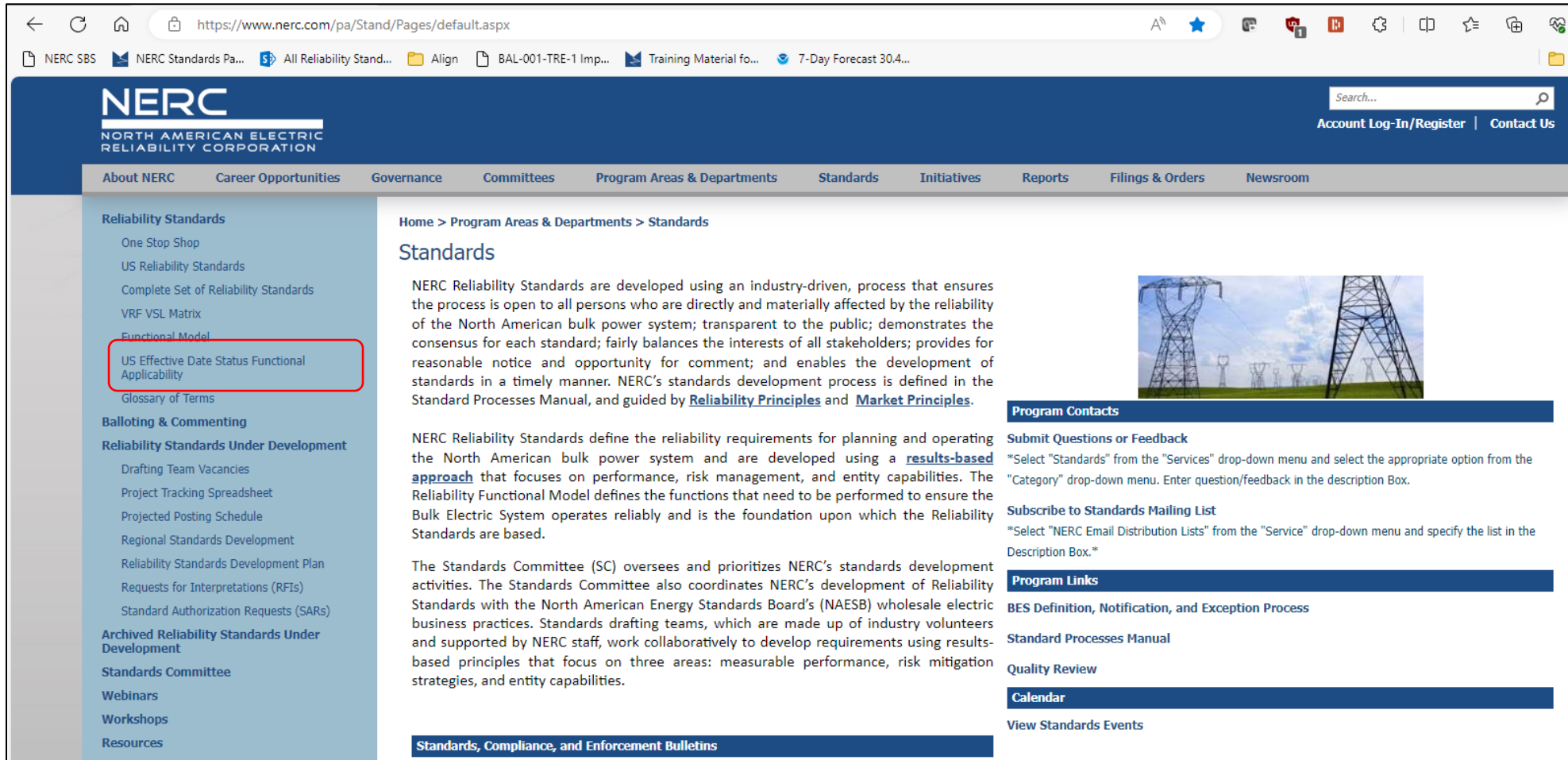
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 - 4.1.2.1.2. performs automatic Load shedding under a common



Applicability – Functional Applicability Spreadsheet



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Functional Applicability Spreadsheet

What This Spreadsheet Shows:

- Comprehensive list of standards throughout (NERC) history
- U.S. Status (Column A)
- Requirement Text (Column F)
- Filing Date (Column J)
- Regulatory Order Effective Date (Column L)
- Effective Date of Requirement/Part (Column M)
- Phased-in compliance, if applicable (Column N)
- Applicable Functions (Columns R – AL)



Implementation Plan

At a Minimum, the Implementation Plan Shall Include the Following:

- The proposed effective date (the date entities shall be compliant) for the Requirements
- Identification of any new or modified definitions that are proposed for approval with the associated Reliability Standard
- Whether there are any prerequisite actions that need to be accomplished before entities are held responsible for compliance with one or more of the Requirements
- Whether approval of the proposed Reliability Standard will necessitate any conforming changes to any already approved Reliability Standards – and identification of those Reliability Standards and Requirements
- The Functional Entities that will be required to comply with one or more Requirements in the proposed Reliability Standard




One-Stop-Shop – Implementation Plan

What This Spreadsheet Shows:

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- Purpose of the standard (Column D)
- Effective date of standard (Column I)
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Finding the NERC Glossary of Terms



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Reliability Standards

- One Stop Shop
- US Reliability Standards
- Complete Set of Reliability Standards
- VRF VSL Matrix
- Functional Model
- US Effective Date Status Functional Applicability
- Glossary of Terms**

Balloting & Commenting

Reliability Standards Under Development

- Drafting Team Vacancies
- Project Tracking Spreadsheet
- Projected Posting Schedule
- Regional Standards Development
- Reliability Standards Development Plan
- Requests for Interpretations (RFIs)
- Standard Authorization Requests (SARs)

Archived Reliability Standards Under Development

Standards Committee

Webinars

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[Home](#) > [Program Areas & Departments](#) > [Standards](#)

Standards

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Program Contacts

Submit Questions or Feedback

*Select "Standards" from the "Services" drop-down menu and select the appropriate option from the "Category" drop-down menu. Enter question/feedback in the description Box.

Subscribe to Standards Mailing List

Select "NERC Email Distribution Lists" from the "Service" drop-down menu and specify the list in the Description Box.

Program Links

- BES Definition, Notification, and Exception Process
- Standard Processes Manual
- Quality Review
- Calendar
- View Standards Events

Standards, Compliance, and Enforcement Bulletins



NERC Glossary of Terms

Glossary of Terms Used in NERC Reliability Standards

Updated May 8, 2024

This Glossary lists each term that was defined for use in one or more of NERC's continent-wide or Regional Reliability Standards and adopted by the NERC Board of Trustees from February 8, 2005 through May 8, 2024

This reference is divided into four sections, and each section is organized in alphabetical order.

Subject to Enforcement

Pending Enforcement

Retired Terms

Regional Definitions

The first three sections identify all terms that have been adopted by the NERC Board of Trustees for use in continent-wide standards; the Regional definitions section identifies all terms that have been adopted by the NERC Board of Trustees for use in regional standards.

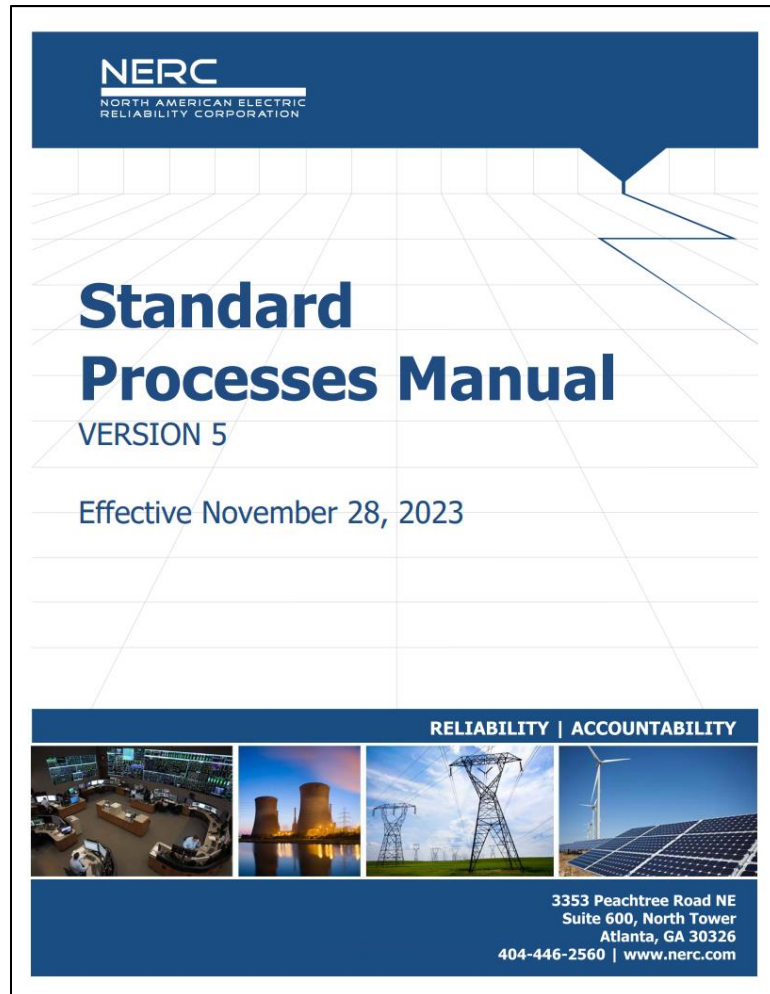
Most of the terms identified in this glossary were adopted as part of the development of NERC's initial set of reliability standards, called the "Version 0" standards. Subsequent to the development of Version 0 standards, new definitions have been developed and approved following NERC's Reliability Standards Development Process, and added to this glossary following board adoption, with the "FERC effective" date added following a final Order approving the definition.



Standards Development Process



The Rules



Appendix 3A to the Rules of Procedure: Standard Processes Manual

NERC Standards Development Process

Standard Authorization Request (SAR) Submitted




Drafting, Commenting, Voting



Approval



Balloting and Commenting



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Reliability Standards

- One Stop Shop
- US Reliability Standards
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- Balloting & Commenting**

Reliability Standards Under Development

- Drafting Team Vacancies
- Project Tracking Spreadsheet
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Archived Reliability Standards Under Development

- Standards Committee
- Webinars
- Workshops
- Resources

Home > Program Areas & Departments > Standards

Standards

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Program Contacts

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Subscribe to Standards Mailing List

"Select "NERC Email Distribution Lists" from the "Service" drop-down menu and specify the list in the Description Box.*"

Program Links

BES Definition, Notification, and Exception Process

Standard Processes Manual

Quality Review

Calendar

View Standards Events

Standards, Compliance, and Enforcement Bulletins

- Standards, Compliance, and Enforcement Bulletin - April 22–28, 2024
April 19, 2024
- Standards, Compliance, and Enforcement Bulletin - April 15–21, 2024
April 15, 2024
- Standards, Compliance, and Enforcement Bulletin - April 8–14, 2024
April 08, 2024
- Standards, Compliance, and Enforcement Bulletin - April 1–7, 2024
April 01, 2024
- Standards, Compliance, and Enforcement Bulletin - March 25–31, 2024
March 25, 2024

[Standards, Compliance, and Enforcement Bulletin Archive](#)



Balloting and Commenting

Current and Upcoming Ballots (Sorted by End Date)

Project	Action	Start Date	End Date
2023 Standard Processes Manual Revisions to Address SPSEG Recommendations Draft 2	Additional Ballot and Non-binding Poll	5/19/2023	5/30/2023
2017-01 Modifications to BAL-003 Phase II Draft 2	Additional ballots and non-binding poll	5/23/2023	6/1/2023
2021-01 Modifications to MOD-025 and PRC-019 Draft 2	Additional Ballots and Non-binding Polls	5/30/2023	6/8/2023
2021-06 Modifications to IRO-010 and TOP-003 Draft 2	Additional Ballots and Non-binding Polls	6/9/2023	6/20/2023
2021-02 Modifications to VAR-002-4.1 Draft 2	Additional ballots and non-binding poll	6/14/2023	6/23/2023

Join Ballot Pools (Sorted by End Date)

Project	Action	Start Date	End Date
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There are no items to show in this view of the "Reliability Standards Under Development - Commenting and Balloting" list.

Posted for Comment (Sorted by End Date)

Project	Action	Start Date	End Date
2022-02 Modifications to TPL-001 and MOD-032 Footnote 13.d SAR	Comment Period	4/13/2023	5/12/2023
2023-04 Modifications to CIP-003 SAR	Comment Period	3/31/2023	5/15/2023
2023 Standard Processes Manual Revisions to Address SPSEG Recommendations Draft 2	Comment Period	4/13/2023	5/30/2023
2017-01 Modifications to BAL-003 Phase II Draft 2	Comment Period	4/18/2023	6/1/2023
2021-01 Modifications to MOD-025 and PRC-019 Draft 2	Comment Period	4/25/2023	6/8/2023
2021-06 Modifications to IRO-010 and TOP-003 Draft 2	Comment Period	5/5/2023	6/20/2023
2021-02 Modifications to VAR-002-4.1 Draft 2	Comment Period	5/10/2023	6/23/2023

Note: All SBS activity concludes at 8 p.m. Eastern

SBS Information Links

[2017 SBS Enhancement Webinar Slides](#)





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Home > Program Areas & Departments > Standards > Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

Related Files

Status

The 25-day formal comment period and initial ballots for **Project 2020-02 Modifications to PRC-024 (Generator Ride-through)** concluded **8 p.m. Eastern, Monday, April 22, 2024**. Ballot results and comments received can be accessed via the links below. The drafting team will review all responses received during the comment period and determine the next steps of the project.

The Standards Committee approved waivers to the Standards Process Manual at their December 2023 meeting. These waivers were sought by NERC Standards for reduced formal comment and ballot periods to assist the drafting teams in expediting the standards development process due to firm timeline expectations set by FERC Order 901.

FERC Order 901 was issued under Docket No. RM22-12-000 on October 19, 2023.

Background

The Standards Committee accepted the revised SAR and authorized drafting revisions to the Reliability Standards identified in the SAR on April 19, 2023. The objective of the SAR is to modify PRC-024-3 or replace the standard with a performance-based ride-through standard that ensures generators remain connected to the BPS during system disturbances. Specifically, the SAR focuses on using disturbance monitoring data to substantiate IBR ride-through performance during grid disturbances. The SAR also ensures associated generators that fail to ride-through system events are addressed with a corrective action plan (if possible).

FERC Order 901 requires that IBR-related performance requirements for ride-through are completed and filed with FERC by November 4, 2024. This drafting team will address the IBR-related PRC-029 first and modify PRC-024 to only apply towards synchronous machines. Following the approval of PRC-029, the drafting team will consider additional modifications to PRC-024 to assure performance-based requirements for synchronous machines are adequately addressed per the SAR.

Standard(s) Affected – PRC-024

Purpose/Industry Need

From a risk-based perspective, the goal of the standard is to mitigate the ongoing and systemic performance issues identified across multiple Interconnections and across many disturbances analyzed by NERC and the Regions. Ongoing NERC reports and findings from NERC alerts have continued to substantiate that IBR are failing to ride-through in accordance with expectations and multiple NERC guidelines. These issues have been identified in IBRs as well as synchronous generators, with many causes of tripping entirely unrelated to voltage and frequency protection settings as dictated by the currently effective version of PRC-024.

[Subscribe to this project's observer mailing list](#)

Select "NERC Email Distribution Lists" from the "Service" drop-down menu and specify "Project 2020-02 Modifications to PRC-024 (Generator Ride-through) Observer List" in the Description Box.

Draft	Actions	Dates	Results	Consideration of Comments
<div>Draft 1</div> <div>PRC-024-4</div> <div>Clean Redline</div> <div>PRC-029-1</div> <div>Implementation Plan</div> <div>Supporting Materials</div> <div>Unofficial Comment Form (Word)</div> <div>Technical Rationales</div> <div>PRC-024-4</div> <div>PRC-029-1</div> <div>VRE/VSL Justifications</div>	<div>Initial Ballots and Non-binding Polls</div> <div>Ballot Open Reminder</div> <div>Info</div> <div>Vote</div> <div>Join Ballot Pools</div>	<div>04/12/24 - 04/22/24</div> <div>03/27/24 - 04/05/24</div>	<div>Ballot Results</div> <div>PRC-024-4</div> <div>PRC-029-1</div> <div>Implementation Plan</div> <div>Non-binding Poll Results</div> <div>PRC-024-4</div> <div>PRC-029-1</div>	



Project Page

Draft	→ Actions	→ Dates	Results	Consideration of → Comments
<p>→ Draft 1 PRC-024-4 Clean Redline</p> <p>PRC-029-1</p> <p>→ Implementation Plan</p> <p>Supporting Materials Unofficial Comment Form (Word)</p> <p>Technical Rationales PRC-024-4</p> <p>PRC-029-1</p> <p>VRF/VSL Justifications PRC-024-4</p> <p>PRC-029-1</p>	<p>Initial Ballots and Non-binding Polls</p> <p>Ballot Open Reminder</p> <p>Info</p> <p>Vote</p>	<p>04/12/24 - 04/22/24</p>	<p>Ballot Results</p> <p>PRC-024-4</p> <p>PRC-029-1</p> <p>Implementation Plan</p> <p>Non-binding Poll Results</p> <p>PRC-024-4</p> <p>PRC-029-1</p>	
	Join Ballot Pools	03/27/24 - 04/05/24		
	<p>Comment Period</p> <p>Info</p> <p>Submit Comments</p>	03/27/24 - 04/22/24	Comments Received	

Standards Balloting System

NERC Balloting Tool Dashboard Users Ballots Comment Forms

DASHBOARD

NERC Standards Balloting System

Welcome Guest User, your Role is Guest

Please use the links below, or the top navigation menu to navigate the NERC Standards Balloting System Website.

Users

- [Registered Ballot Body](#)
- [Proxy Ballot Body](#)
- [My User Profile](#)

Ballots

- [Ballots Events](#)
- [Ballot Results](#)

Comment Forms

- [View Real-time Comments](#)

<https://sbs.nerc.net/>



Regional Standards

- ☐ **Go Beyond, Add Detail to, or Cover Matters Not Addressed in NERC Reliability Standards**
- ☐ **Regional Standard BAL-001-TRE-2: Primary Frequency Response in the ERCOT Region**
- ☐ **Texas RE Regional Standards Development Process Document**



Be in the Know

- ☐ **NERC Standards Balloting and Commenting Webpage**
- ☐ **Subscribe to NERC Standards Mailing List**
 - NERC helpdesk: <https://support.nerc.net/>
- ☐ **Weekly Standards, Compliance, & Enforcement Bulletin**
- ☐ **Standard Drafting Team Meetings – Open meetings**
- ☐ **Industry Webinars**



Stakeholder Groups

NERC Standards Review Forum (NSRF)

- Discusses standards projects under development
- Discusses enforceable standards
- Join the Standards Mailing List by contacting information@texasre.org
- See Texas RE's [Standards webpage](#) for more information

CIP Working Group (CIPWG)

- Discusses cyber security issues, include CIP Reliability Standards
- See ERCOT's [CIPWG page](#) for more information



Additional Resources

☐ Rules of Procedure Appendix 3A – Standard Processes Manual

- NERC Standards Webpage

- Reliability Standards
- U.S. Enforcement Dates
- Balloting and Commenting

☐ NERC Glossary of Terms

☐ NERC Standards Balloting System

☐ Texas RE Regional Standards Development Process



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