

# NERC

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Standards Update

Howard Gugel, Vice President of Engineering and Standards  
Board of Trustees Meeting  
August 18, 2022

**RELIABILITY | RESILIENCE | SECURITY**



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# Cold Weather Standard Development Update

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- First posting
  - EOP-011 changes passed
  - EOP-012 failed
- Drafting team met to consider comments
- Revised EOP-012 posted for comment and ballot ending September 1

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# Standards Process Improvement Opportunities

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- Stakeholder group met twice to consider
- Plan to meet in-person in September
- Post recommendations as modified for industry comment
- Present to Board by December, 2022

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# Critical Infrastructure Protection Board Resolution Update

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- Standards
  - CIP-003 in ballot and comment through August 19
  - Plan to bring change with virtualization modification to CIP-003
- Low Impact Criteria Review team
  - Whitepaper posted for comment through September 12
  - Identification of risks and management strategies
  - Team to consider comments and finalize whitepaper



# Questions and Answers



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# 2022 Work Plan Priorities Semi-Annual Update

Informational  
Board of Trustees Meeting  
August 18, 2022

**RELIABILITY | RESILIENCE | SECURITY**



1. Expand risk-based focus in Standards, Compliance Monitoring, and Enforcement
2. Assess and catalyze steps to mitigate known and emerging risks to reliability and security
3. Build a strong, E-ISAC-based security capability
4. Strengthen engagement across the reliability and security ecosystem in North America
5. Capture effectiveness, efficiency, and continuous improvement opportunities

- Improve Bulk Electric System (BES) resilience for wide-spread long-term extreme temperature events
- Deepen planning and operating focus beyond capacity adequacy, towards energy sufficiency
- Enhance and develop new Standards: cyber (bright-line criteria), weatherization, energy sufficiency and inverter performance
- Expand the impact of the E-ISAC through enhanced information sharing, communications, and monitoring of critical security threats



Priority has been fully achieved







Priority is on track for 2022 completion



Priority is at risk for completion in 2022



Priority will not be reached in 2022

- 44 individual work plan priorities
  - 2 complete 
  - 41 on track for completion 
  - 0 at risk 
  - 1 will not be reached 

## Key Objectives

### Standards: Cyber

Incorporate transmission planning and operational cyber risks into BPS Standards

Implement supply chain report recommendations

Complete evaluation of the bright-line risk criteria and change the criteria

### Standards: Energy and Reliability

Modify Reliability Standards based on actions identified by FERC/ERO Enterprise 2021 Cold Weather Inquiry

Implement 2021 Energy Reliability Assessment Task Force standard recommendations

**Modify standards ensuring transmission planning energy scenarios are studied for:**

- a. Normal and extreme events
- b. Gas-electric interdependencies
- c. Distributed energy resource events

## Status Highlights



Collaborating on CIP-014 transmission planning and operational risks



Developed coordinated cyber attack whitepaper; ongoing standards project



Ongoing standards project



Supporting FERC NOPR and future drafting team



SAR submitted to Standards Committee



Developing criteria

## Key Objectives

### Standards: Emergent Risks

#### Modify existing Reliability Standards:

- a. Inverter performance
- b. Relay commissioning

### Compliance

Develop and implement plan to address facility ratings

## Status Highlights

Various SARs for inverter performance submitted to Standards Committee



Developing strategies to reduce relay misoperations/commissioning; however, standard modification will not be completed in light of other priorities



Completing internal strategy and industry themes reports; RSTC created Facility Ratings Task Force

## Key Objectives

### Assessment: Energy and Reliability

#### Implement FERC/ERO Enterprise 2021 Cold Weather Inquiry:

- a. Reframing of resource adequacy in reliability assessments
- b. Approach to natural gas-electric interdependency on BPS reliability

#### Develop strategy for oversight of the transforming resource mix:

- a. Seasonal Assessments include energy availability scenarios and probability-based analysis to assess potential energy limitations from extreme events
- b. Conduct energy adequacy assessments for all assessment areas and publish in 2022 LTRA
- c. Implement 2021 Energy Reliability Assessment Task Force recommendations
- d. To measure resilience, collect load loss recovery data from extreme events

Develop technical guidance to support increasing amounts of distributed energy resources and inverter-based resources

## Status Highlights



Formulating strategy on energy assessments  
Developed Design Basis Criteria for a natural gas study and a survey to measure the Fuel Assurance Guideline



2021 Summer Reliability Assessment (SRA) published with scenarios  
2022 Probabilistic Analysis effort underway  
SARs accepted by Standards Committee and remaining ERATF work plan items on track  
ERO Load Loss Data Collection Team active



Developing Reliability Guidelines, studies, reports, and SARs; webinars and industry engagements underway



## Key Objectives

### Assessment: Supply Chain and Security Engineering

Implement Supply Chain report's recommendations

Supply chain risk mitigations for low impact BES Cyber Assets

Develop cybersecurity risk scenarios for BPS planning, engineering, and operations

Complete study on the implications of a coordinated cyber attack

Identify improvements to bright-line criteria or identify enhanced approach

## Status Highlights



Standard posted for comment



Developed cyber attack whitepaper; ongoing standards project



Developing white paper and IEEE-NERC Technical Report



Developing whitepaper on coordinated cyber attacks around low impact BES Cyber Assets



Reviewing data to make initial recommendations

## Key Objectives

### Strategy

Execute and refine strategic plan

Develop OT system monitoring and analysis capabilities and activate the objectives of the 100 day plan

Continue collaboration with Analysis Center for Systemic Risk (ARC) to refine risk mitigation strategies

Continue sharing and engagement with other critical infrastructure sectors and ISACs

Maintain strategic partnerships with U.S. and Canadian government partners, technology sector, and other key stakeholders

Explore opportunities to expand participant funding of key programs

## Status Highlights



Plan updated to include vendor affiliate program, natural gas collaboration, CRISP expansion, OT analysis, ETAC support, etc.



Actively conducting threat hunts



E-ISAC and ARC meeting on a regular basis



Continuing to cascade timely and actionable information; Tri-Sector Plan activated during Ukraine crisis



Continuing to support U.S. and Canadian government agencies and maintain contact with other key stakeholders



Revised MOU with DOE, including funding requests; launching vendor affiliate program; CRISP five year strategy developed

## Key Objectives

### Information Sharing

Maintain focus on and share information regarding the most critical security threats (i.e., OT, Supply Chain)

Develop plans to significantly expand CRISP participation and evaluate other sensor technologies

Improve coordination and connectivity to Intelligence Community

Continue to conduct threat workshops, webinars and industry-wide exercises

### Analysis

Develop products to summarize analysis of sensors and proactively share with stakeholders

Deploy automated information sharing tools

Refine performance metrics to more accurately assess productivity and value

## Status Highlights



Continuing to cascade timely and actionable information



Several public power companies added to CRISP



Attending classified briefings; E-ISAC part of the ETAC



Conducting monthly webinars, physical security workshops, and planning for GridEx



Actively conducting threat hunts in CRISP, Neighborhood Keeper, etc.; evaluating use of IronNet



ESSIX pilot in progress



Developed metrics for watch and CTI analysts

## Key Objectives

### Engagement

Successfully roll out new E-ISAC portal and develop robust feedback mechanisms

Continue Industry Engagement Program (IEP) and increase membership

Provide products and services tailored to small and mid-size systems

Continue to strengthen engagement and collaboration with natural gas sector

Maintain Canadian engagement, effectively activate the IESO relationship and use Project Lighthouse

## Status Highlights



New portal activated in May 2022, including additional feedback mechanism; regular feedback also collected as part of IEP



Membership currently increased by 7% in 2022; conducting IEPs



Issuing weekly report for small/medium utilities; identifying mechanisms to expand CRISP to this community



Conducting regular engagement with gas trade associations and utilities; attempting to expand CRISP to pipeline providers



Conducting regular engagement with IESO; maintaining access to Project Lighthouse

## Key Objectives

### Enhance Outreach to Stakeholder/Policy Organizations

Continue to sharpen reliability assessment recommendations and further develop state and Provincial outreach around key findings in partnership with the Regional Entities

Continue to expand outreach to stakeholder organizations that represent resource transition mix (solar, wind, natural gas, battery technology, etc.) to further engage on reliability, resilience and security matters

### Cold Weather

**Execute a robust outreach strategy surrounding the recommended actions outlined in the Mid-South Cold Weather Event Inquiry report in coordination with FERC to include:**

- a. U.S. Senate and House Committees of Jurisdiction
- b. Stakeholder associations
- c. U.S. Government

## Status Highlights



SRA received the most media interest of any report; extensive SRA briefings to state and provincial regulators, NARUC, CAMPUT, Capitol Hill, DOE Secretary, and FERC



Conducting outreach with solar and wind energy associations



Regular conversations on cold weather event, SRA, and natural gas interdependency

Outreach with NARUC, solar and wind associations, and Trades and Forums

Collaborating with FERC, including cold weather technical conference planning support; outreach to DOE

## Key Objectives

### Leveraging the Work of Others

Leverage renewed working relationships with EPRI and NATF and NAGF to expand joint impact on technical reliability matters

Look for other organizational relationships to leverage where joint impact on the BPS reliability could be expanded through better coordination/intentionality, such as U.S. DOE, CAMPUT, Ministers of Energy, NARUC, and Power Systems Engineering in Research Center (PSERC), etc.

Continue to develop relationships with registered entities through NERC and the Regions

## Status Highlights



Coordinating with NATF on Facility Ratings; conducted a joint presentation at February Board Compliance Committee



Regular engagement with NARUC, DOE, and FERC, CAMPUT, and Canadian regulators; Granholm meeting on SRA; meetings with state and provincial regulators



Quarterly meetings with trade associations; state outreach; resolution of PMA/Align program

## Key Objectives

### Align/SEL

Roll-out Align R4 by Q3 2022, supported by stakeholder outreach and education, end-use training, and business unit readiness activities

Explore potential additional uses of Evidence Locker functionality for other registered entity data gathering (e.g., NERC Alerts)

### ERO Enterprise

Solidify the ERO-Enterprise Transformation with increasing proof points per the Phase 2 Roadmap

Update long-term strategy to reflect the current industry reliability, security, and resilience environment

## Status Highlights



Align R4 production code released on 6/21/2022, Align R4.5 on schedule for October; training and education ongoing



Determined that NERC Alerts will be enhanced with the current solution; no further use cases for other uses of Evidence Locker functionality identified at this time



Collaboration groups regularly discuss areas that support the roadmap and transformation; successful May Leadership Workshop, which focused on getting input on critical challenges and must-win battles to be considered in the update of the ERO Enterprise Long-Term Strategy; updated draft strategy expected by year-end





# Questions and Answers