
RF
RELIABILITYFIRST
2023 FALL WORKSHOP
SEPTEMBER 26-27, 2023 | PITTSBURGH, PA

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TODAY'S AGENDA

Topic	Speaker(s)
Federal Energy Regulatory Commission (FERC) Notice of Proposed Rulemaking (NOPR) Updates	**Kal Ayoub**, Critical Infrastructure and Resilience Advisor to the Chairman, FERC
Updates on NERC Projects	**Latrice Harkness**, Director of Standards Development, **Jamie Calderon**, Manager of Standards Development, and **Alison Oswald**, Manager of Standards Development, NERC
The Journey to Building a Successful Internal Controls Program	**Nicholas Poluch**, Senior Manager, NERC Cyber Protection and Ops Program, and **Colleen Dolan**, Manager, NERC Internal Controls, Talen Energy
Compliance Monitoring and Enforcement Program (CMEP) Updates	**Zack Brinkman**, Manager, CIP Compliance Monitoring, **Jim Kubrak**, Manager, Operations and Planning Compliance Monitoring, and **Max Reisinger**, Senior Counsel, ReliabilityFirst

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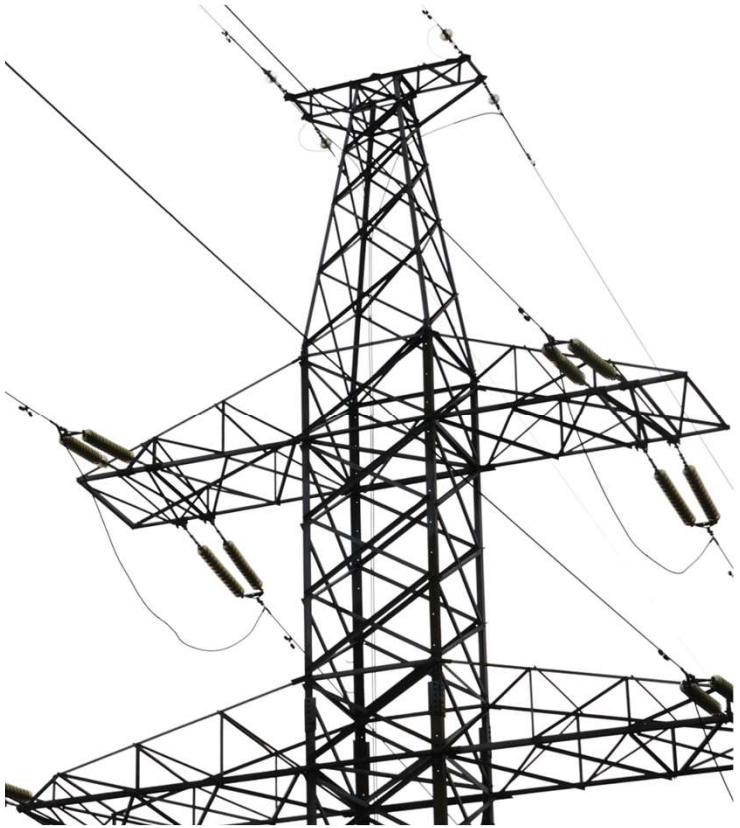


KAL AYOUB

CRITICAL INFRASTRUCTURE AND RESILIENCE

ADVISOR TO THE CHAIRMAN, FERC

Limited Disclosure

Update on FERC Activities

Kal Ayoub, Critical Infrastructure and Resilience Advisor

September 27, 2023

What are Chairman Phillips' Priorities?

Chairman Phillips Priorities

- Chairman's Priorities – Reliability, Transmission Reform, Environmental Justice
- Chairman's Reliability Priorities – **Reliability is Job #1**
    1. Protecting the grid from cyber and physical attacks;
    2. Preparing for extreme weather; and
    3. Ensuring reliability as the resource mix changes.
- Transmission Reform:
    - Final Rule on Interconnection Procedures
- Environmental Justice:
    - Roundtable and Equity Action Plan
- Technical Conferences
    - Physical Security Tech Conference
    - Annual Reliability Tech Conference

Chairman Reliability Priority:

Protecting the grid from cyberattacks
Internal Network Security Monitoring

- Final Rule on Internal Network Security Monitoring for High and Medium Impact Bulk Electric System Cyber Systems, issued January 19, 2023 (Order No. 887, Docket No. RM22-3-000.
  - Final Rule directs NERC to develop and submit within 15 months of the effective date new or modified Reliability Standards that require internal network security monitoring for all high impact bulk electric system BES Cyber Systems with and without external routable connectivity and medium impact BES Cyber Systems with external routable connectivity.
  - Final Rule directs NERC to perform a study of all low impact BES Cyber Systems with and without external routable connectivity.

> "The nature of cyber security threats to our nation's grid require constant monitoring and vigilance. One year after we proposed this rule at my first meeting as a Commissioner, we are finalizing this rule in my first meeting as Chairman, and taking a major step to better secure the reliability of our nation's bulk power system."
>
> Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Protecting the grid from cyberattacks
Supply Chain Revisions for Low-Impact Cyber Systems

> "The vast majority of BES assets today are considered low-impact and that number is only expected to grow. To not protect these BES assets against one of the most frequent attack scenarios – supply chain – would be a big mistake"
>
> Willie L. Phillips, FERC Chairman

- On March 16, 2023, the Commission approved Reliability Standard CIP-003-9 (Cyber Security – Security Management Controls). Docket No. RD23-3-000.
  - Requires entities with bulk electric system facilities whose assets are designated low impact to have methods for determining and disabling vendor remote access.
  - Expands existing security controls to provide greater visibility into electronic communication between low impact bulk electric system cyber systems and vendors.
  - Will allow detection and the ability to disable vendor remote access in the event of a known or suspected malicious communication.
- CIP-003-9 becomes effective on April 1, 2026

Chairman Reliability Priority:

Protecting the grid from cyberattacks
Incentive Rate Treatment for Cybersecurity Investments

- Issued April 21, 2023: Order No. 893, a final rule providing incentive-based rate treatment for utilities making certain voluntary cybersecurity investments in Docket No. RM22-19
  - Establishes incentive-based rate treatments to encourage utilities to invest in advanced cybersecurity technology and participate in cybersecurity threat information sharing programs to benefit consumers.
  - Expenditures must materially improve a utility's cybersecurity posture.
  - Cybersecurity investments eligible for incentives include:
    1. Those on the pre-qualified list; and
    2. Those determined to be eligible by the Commission on a case by case basis, including early compliance with cybersecurity Reliability Standards

> "We must continue to build upon the mandatory framework of our cybersecurity reliability standards with efforts such as this to encourage utilities to proactively make additional cybersecurity investments in their systems."
>
> Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Protecting the grid from physical attacks

- On April 20, 2023, Jim Robb, President and CEO of NERC, presented NERC's evaluation of the Physical Security Reliability Standard in light of recent physical attacks on the BPS
- At Chairman's direction, a Joint Technical Conference Regarding Physical Security of the Bulk-Power System was held on August 10, 2023, in Docket RD23-2 hosted by NERC
  - Recommended by NERC Physical Security Report
  - Part 1: Effectiveness of Reliability Standard CIP-014-3
  - Part 2: Solutions Beyond CIP-014-3

"We have talked about this issue of physical security many times. There is no greater priority for me and for this Commission than making sure that we protect the security of our electric grid"

Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Preparing for extreme weather
FERC Approved and Directed Changes to Cold Weather Standards

- Order approving EOP-011-3 (Emergency Operations) and EOP-012-1 (Extreme Cold Weather Preparedness and Operations) in Docket No. RD23-1, 2/16/2023
  - Proposed standards include winterization requirements for GOs
  - Commission directed changes to EOP-012-1
- Revised standard and data collection plan is due February 16, 2024.

"These new standards will help to prepare our nation's grid and our grid operators so they can provide power to consumers in the face of extreme weather.

I am pleased that NERC and its regional entities acted swiftly to propose these reliability standards so that my fellow Commissioners and I could move decisively and vote today to ensure the reliability and resilience of the bulk power system."

Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Preparing for extreme weather Status Update on FERC-NERC Joint Inquiry into Winter Storm Elliott

- At the **June 15 Commission Meeting**, FERC, NERC and RE Joint Team provided a status update on the inquiry.
- Consistent themes include:
  - Need for generating unit cold weather preparedness,
  - Natural gas – electric interdependencies, and
  - Need for grid operations preparedness (e.g., load forecasting, grid emergencies).
- Continuing to implement the recommendations of past inquiry reports could have helped mitigate the effects of Elliott and recommendations should be implemented now to prepare for the coming winter.

"I remain concerned that critical prior inquiry report recommendations are not being implemented quickly enough, and I strongly encourage the prompt implementation of those recommendations by industry, to prepare for the upcoming 2023-2024 winter. The presentation also underscores the need for improved gas-electric coordination" - Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Preparing for extreme weather
Key findings and recommendations on FERC-NERC Joint Inquiry into Winter Storm Elliott

- At the **September 15 Commission Meeting**, FERC, NERC and RE Joint Team provided key findings and recommendations. The presentation highlighted several key facts about the December 2022 event, including:
  - Unprecedented unplanned generating unit losses, with nearly 90,000 megawatts out at the same time.
  - Nearly 80 percent of the generating units failed to perform at temperatures above their own documented minimum operating temperatures.
  - Several electric grid operators had to shed firm load to maintain system reliability.
  - Natural gas pipeline pressures dropped largely because of freeze-related production as well as other natural gas infrastructure freeze- and equipment-related problems.
  - **Consolidated Edison Inc faced reliability-threatening low pressures on its delivery pipelines, forcing it to declare an emergency and use its own liquefied natural gas facility to maintain service.**

> "It's abundantly clear that we must make major improvements to the cold-weather reliability of both the natural gas and electricity production and grid systems…I have said repeatedly: Someone – it doesn't have to be FERC – must have authority to establish and enforce natural gas reliability standards. And some recommendations from the 2021 Uri report are still not implemented. Please get that done. It shouldn't take five winter storms in 11 years to show us the gravity of the situation we find ourselves in "
>
> Willie L. Phillips, FERC Chairman

Chairman Reliability Priority:

Preparing for extreme weather
Key findings and recommendations on FERC-NERC Joint Inquiry into Winter Storm Elliott

- 11 recommendations for action to help prevent similar occurrences, and cover cold weather reliability improvements for power generators, natural gas infrastructure, gas-electric coordination and electric grid operations.
- Recommendations highlights:
  - There must be robust monitoring of how the industry is implementing current cold weather Reliability Standards to determine if reliability gaps exist. Also, NERC should obtain an independent technical review of the causes of cold-related mechanical and electrical generation outages to identify preventive measures, which includes determining if additional reliability standards are needed.
  - Congressional and state legislation or regulation is needed to establish reliability rules for natural gas infrastructure to ensure cold weather reliability. Currently, no regulatory entity is tasked with ensuring the reliability of the natural gas infrastructure on which the electric grid relies.
  - North American Energy Standards Board convene a meeting of gas and electric grid operators and gas distribution companies to identify improvements in communication during extreme cold weather events to enhance awareness across the natural gas supply chain. In addition, the report suggests hiring an independent research group to analyze whether additional gas infrastructure is needed to support grid reliability and meet the needs of gas utilities.

Chairman Reliability Priority: Preparing for extreme weather

FERC Approved Extreme Weather Final Rules

- Order No. 896, Transmission System Planning Performance Requirements for Extreme Weather. Docket No. RM22-10 issued June 15, 2023.
  - NERC must submit the new or revised reliability standards by December 23, 2024.
- Order No. 897, One Time Reports on Extreme Weather Vulnerability Assessments. Docket Nos. RM22-16 and AD21-13 issued June 15, 2023.
  - Directs transmission providers to file one-time informational reports describing how they conduct extreme weather vulnerability assessments, if at all
  - One-time informational report is due by October 25, 2023.

"Make no mistake: Reliability at FERC is Job No. 1 - For the first time, reliability standards will require planning for extreme heat and cold weather. NERC will develop the standards, and once we approve them transmission owners and operators will identify the elements of their systems that are vulnerable to extreme heat and cold and develop solutions to address those vulnerabilities."

Willie L. Phillips, FERC Chairman

Chairman Reliability Priority: Ensuring reliability as the resource mix changes

FERC Approved NERC's IBR Registration Work Plan

- As directed by FERC,NERC filed an IBR Registration Work Plan that sets forth NERC's three-phased approach to identify and register certain unregistered IBRs
- On May 18, 2023, the Commission approved NERC's IBR Registration Work Plan in Docket No. RD22-4-001.
  - ➢ First quarterly Work Plan update was due on August 14, 2023.

"I believe in an all-of-the-above approach…whatever resources are needed to keep our grid reliable…we have to make sure they are available."

Willie L. Phillips, FERC Chairman

Limited Disclosure

Chairman Priority – Transmission Reform, Order 2023

"We are just getting started!"

Chairman Priority – Environmental Justice

- The Commission held a Commissioner-led Roundtable on Environmental Justice and Equity on March 29, 2023.
- The Commission's two-year Equity Action Plan aims to reduce barriers to meaningful participation by underserved communities.
- Conrad Bolson has been appointed Senior Counsel for Environmental Justice and Equality and will lead these efforts.

"I've said this before, and I'll say it again. It is not a talking point for me, it is personal when I talk about environmental justice".

Willie L. Phillips, FERC Chairman

Technical Conferences

- Joint Technical Conference Regarding Physical Security of the Bulk-Power System - August 10, 2023.

- Annual Reliability Technical Conference - November 9, 2023.

Questions?

NERC PROJECT UPDATES

Latrice Harkness

Director of Standards Development, NERC

Jamie Calderon

Manager of Standards Development, NERC

Alison Oswald

Manager of Standards Development, NERC

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Standards Update

Latrice Harkness, Director of Standards Development, NERC
Jamie Calderon, Manager of Standards Development
Alison Oswald, Manager of Standards Development
RF Fall 2023 Workshop
September 27, 2023

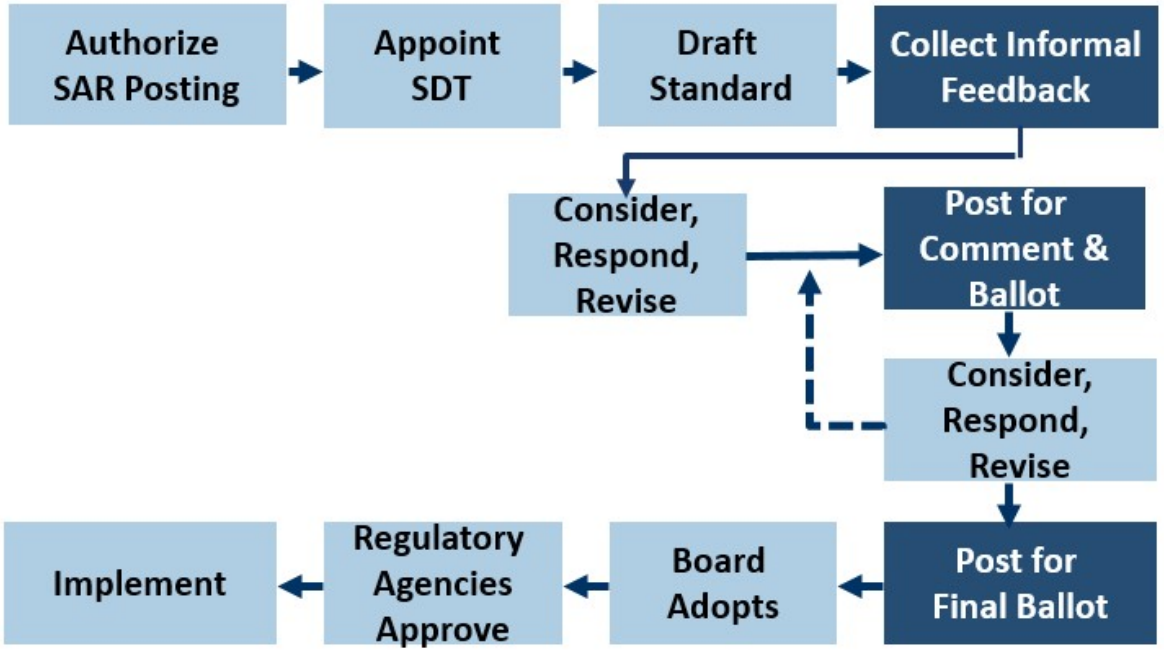
RELIABILITY | RESILIENCE | SECURITY




Overview

- Standard Development Process Review
- Standards Development Projects
- Project Updates
- Moving Forward
- Questions and Answers

Standards Development Process



Standards Development Projects

Grid Transformation	Security Risks	Extreme Event	Critical Infrastructure Interdependencies
• 2020-02 Modifications to PRC-024 (Generator Ride-through) • 2020-06 Verifications of Models and Data for Generators • 2021-01 Modifications to MOD-025 and PRC-019 • 2021-02 Modifications to VAR-002 • 2021-04b Modifications to PRC-002-2 • 2022-02 MOD-032, TPL-001 • 2022-04 EMT Models in NERC MOD, TPL, FAC Standards • 2023-01 EOP-004 IBR Event Reporting • 2023-02 Performance of IBRs • 2023-05 Modification to FAC-001/002	2016-02b Modifications to CIP Standards 2020-04 Modifications to CIP-012-1 2021-03 CIP-002 2022-05 Modifications to CIP-008 2023-03 CIP INSM 2023-04 CIP-003 LICRT 2023-06 CIP-014 Risk Assessment Refinement	• 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination	• 2022-03 ERATF (Planning and Operations)

High Priority

Focus	FERC Directives	NERC Board Resolutions
• 2020-02 Modifications to PRC-024 (Generator Ride-through) • 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination • 2022-03 Energy Assurance with Energy-Constrained Resources • 2023-06 CIP-014 Risk Assessment Refinement	• 2016-02 Modifications to CIP Standards • 2023-03 Internal Network Security Monitoring (INSM) • 2020-04 Modifications to CIP-012 • 2023-07 Modifications to TPL-001-5.1 Transmission System Planning Performance Requirements for Extreme Weather	• 2023-04 Modifications to CIP-003 • Future GO-IBR Standards

Medium Priority

2023-02 Performance of IBRs

2023-01 EOP-004 IBR Event Reporting

2021-01 Modifications to MOD-025 and PRC-019

2022-05 Modifications to CIP-008 Reporting Threshold

Low Priority

Projects

- 2017-01 Modifications to BAL-003 Phase II
- 2019-04 Modifications to PRC-005-6
- 2020-06 Verifications of Models and Data for Generators
- 2021-02 Modifications to VAR-002-4.1
- 2021-04 Modifications to PRC-002-2
- 2021-08 Modifications to FAC-008
- 2022-01 Reporting ACE Definition and Associated Terms
- 2022-02 Modifications to TPL-001-5.1 and MOD-032-1
- 2022-04 EMT Modeling

Standards Overlap (O & P)

MOD-032

- 2022-02 Modifications to TPL-001-5.1 and MOD-032-1
- 2022-04 EMT Modeling

TPL-001

- 2022-02 Modifications to TPL-001-5.1 and MOD-032-1
- 2022-03 Energy Assurance with Energy-Constrained Resources
- 2022-04 EMT Modeling
- 2023-07 TPL-001 SAR on Extreme Weather
- Upcoming SAR on energy scenarios for Gas-Electric Interdepencies and DER

Recommendations

- Submit waivers to expedite process
- Potential synchronization with other efforts
  - EMT Models with Compliance Filings and EMT training
  - Virtualization with the upcoming Cloud SARs
  - TPL-001 SDTs will consider merging drafting efforts and allow directive on extreme weather to move forward first.

Recommendations continued

- Slow or put on hold
  - Project 2017-01 Modifications to BAL-003 Phase II
  - Project 2019-04 Modifications to PRC-005-6
  - Project 2021-03 CIP-002 - remaining CIP-002 and CIP-014 SARs
  - Project 2016-02 Modifications to CIP Standards (Virtualization) - already under a waiver, but for the next ballot, if it fails, should be sent to the Security Working Group with the three cloud SARs that are being submitted
  - Project 2023-08 (pending posting) MOD-031 SAR
  - Projects that require definition considerations of DER

Projects of Note

- Project 2021-01 Modifications to MOD-025 and PRC-019
  - The SARs propose revisions to MOD-025-2 and PRC-019-2 to address issues regarding verification and data reporting of generator active and reactive power capability.
- Project 2023-06 CIP-014 Risk Assessment Refinement
  - This SAR proposes modified requirements to the risk assessment conducted for applicable Transmission facilities in CIP-014-3.
  - SAR Comment and Solicitations for Nominations are now closed. Recommendations for drafting teams will be brought to the October SC.

Projects of Note

- Project 2020-06 Verification of Models and Data for Generators
  - The SAR proposes revisions to MOD-026-1 and MOD-027-1 to clarify requirements related to IBRs and to require sufficient model verification to ensure accurate generator representation in dynamic simulations.
  - Project to prioritize creating definitions for IBR that will be utilized by other IBR-related Projects
  - Remainder of project to slow to assure resources are available to higher priority projects

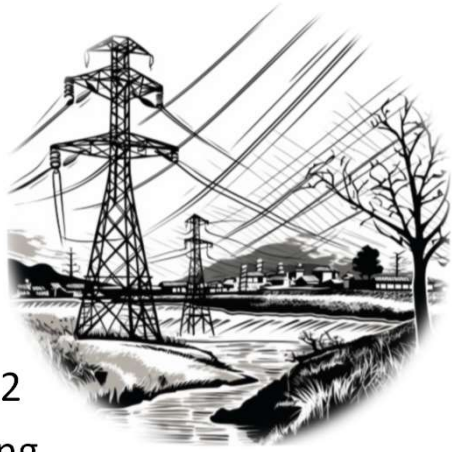
Projects of Note

- Project 2020-02 Ride-Through
  - The SAR proposes new requirements to establish and coordinate performance criteria for IBR generators to assure adequate ride-through capability for new units.
    - Related to existing PRC-024. The team is pursuing an IBR version of PRC-024 currently and is in development stages. First ballot is anticipated for Q3 2023.
- Project 2023-02 Performance of IBRs
  - The SAR proposes new requirements regarding analysis responsibilities following the poor performance of generators during, or in response to, a BPS disturbance.
    - Related to existing PRC-004. The team is considering an IBR version of PRC-004 currently and is in early development stages.

⑩ ***Both projects will leverage the GO data recording capabilities being established within 2021-04b (Modifications to PRC-002-2)*

Projects of Note

- Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination
  - Reliability Standards
    - EOP-011-3 (Emergency Preparedness and Operations)
    - EOP-012-1 (Extreme Cold Weather Preparedness and Operations)
  - Adopted by NERC Board of Trustees in October 2022
  - FERC issued an order on February 16, 2023 approving EOP-011-3 and EOP-012-1 while directing further revisions to clarify and enhance EOP-012-1.
  - The team has completed addressing the recommendations in phase 2 and is working to address the FERC directives in EOP-012.



Projects of Note

- Project 2022-02 Modifications to TPL-001-5.1 and MOD-032-1
  - The SARs propose revisions to FAC-001, TPL-001, and MOD-032 to provide and verify EMT models during the interconnection process
  - Phase 1 is revising MOD-032
  - Additional Posting scheduled for early October
- Project 2022-03 Energy Assurance with Energy-Constrained Resources
  - The SAR proposes new requirements for operations and planning to assure energy availability/assurance is routinely evaluated.

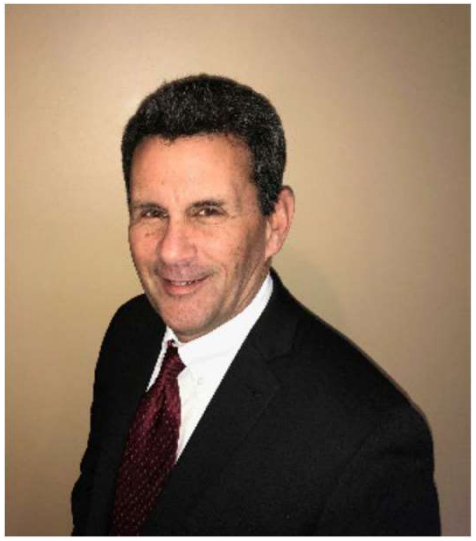
Projects of Note

- Project 2023-03 Internal Network Security Monitoring (INSM)
  - The SAR proposes new requirements to assure internal networks of high impact BCS and medium impact BCS with External Routable Connectivity are monitored and able to detect intrusions.
  - Initial draft anticipated for formal ballot in October 2023.

- Project 2021-03 CIP-002
  - This project is addressing four SARs
  - Field Test for Criterion 2.12
  - Initial posting scheduled for late September

Questions and Answers


break
time



NICK POLUCH

SENIOR MANAGER, NERC CYBER PROTECTION AND OPS PROGRAM, TALEN ENERGY

COLLEEN DOLAN

MANAGER, NERC INTERNAL CONTROLS, TALEN ENERGY

Internal Controls

Applied to Cold Weather Readiness Planning

Agenda

1. Talen Overview
2. Phases of Plan Development
   - Progression of Internal Control Development
     - 2021 Internal Assessment
     - 2022 RF Site Visit
     - 2023 NERC Alert and Essential Actions
3. What's Next for Weatherization
   - Annual review of winter preparations
   - Continuous Improvements
   - Lessons Learned from NERC Alert

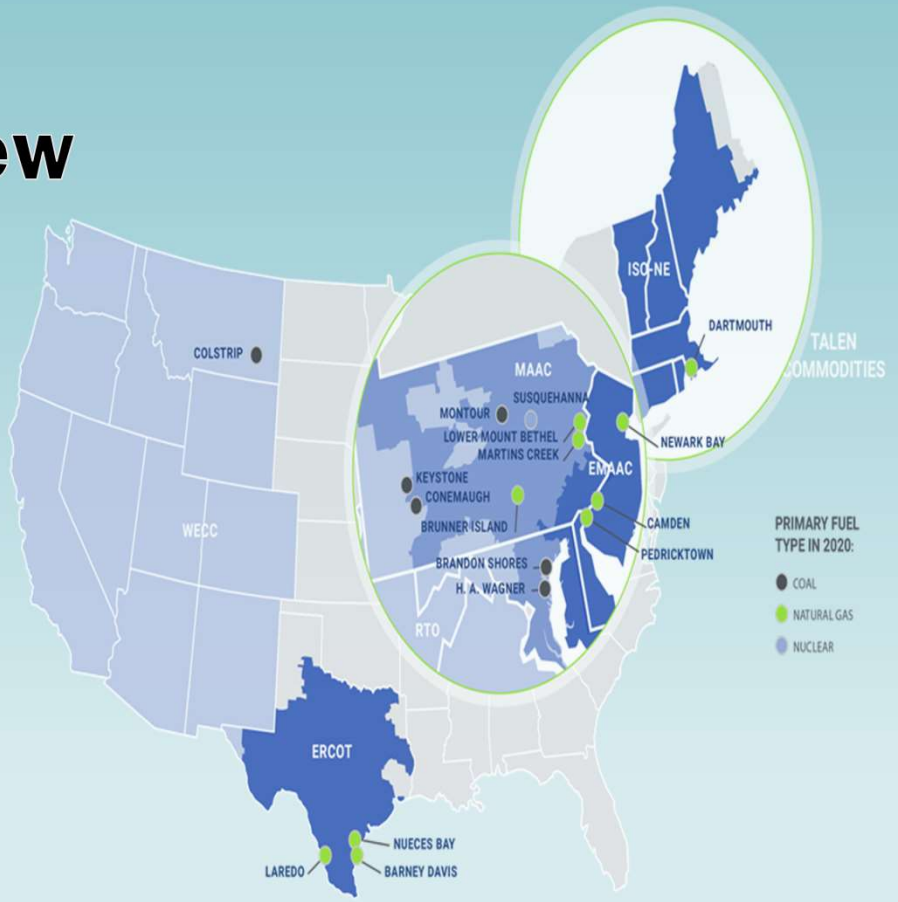
1. Talen Energy Overview

PJM Region - 8 Plants in the PJM region, 7 fossil and 1 nuclear

TRE - 3 Fossil Plants

NPCC - 1 Fossil

WECC - 1 Fossil



Talen's Risk Based Internal Controls Philosophy

Talen's philosophy

- We put the resources where we see the highest risk
- Internal Controls are developed using a risk based program

Weatherization Plan Internal Controls

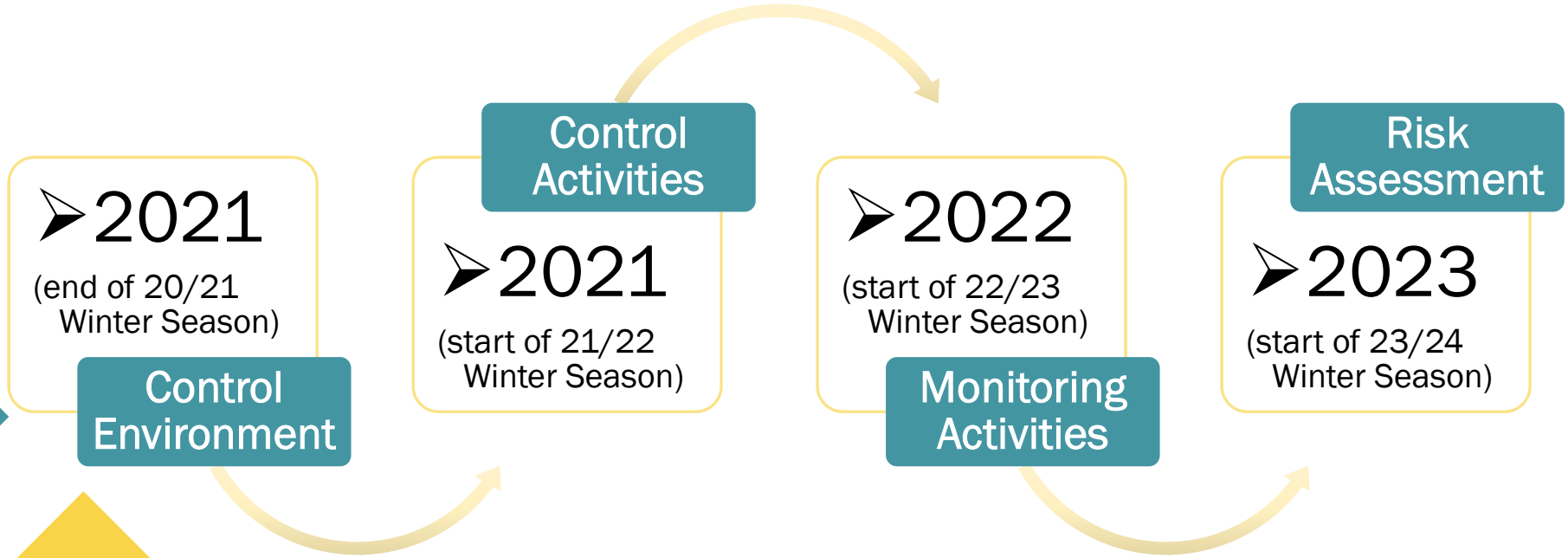
Control Environment	Control Activities	Monitoring Activities	Risk Assessment
?	?	?	?
?	?	?	?
?	?	?	?
?	?	?	?
?	?	?	?
?	?	?	?
?	?	?	?

2. Phases of Plan Development

Progression of Internal Control Development

- 2021 Internal Assessment
- 2022 RF Winterization Analysis
- 2023 NERC Alert and Essential Actions

Progression of Internal Control Development



Blending Operations with Compliance
Implementing Internal Controls – Beginning of 2021 Controls

Control Environment (end of 20/21 Winter Season)	Control Activities (start of 21/22 Winter Season)	Monitoring Activities (start of 22/23 Winter Season)	Risk Assessment (start of 23/24 Winter Season)
Evidence Repository			
NERC Group filing of evidence			
Annual Training			
Escalation Group Management monitors tasks			
Compliance Calendar			

2021 Internal Assessment

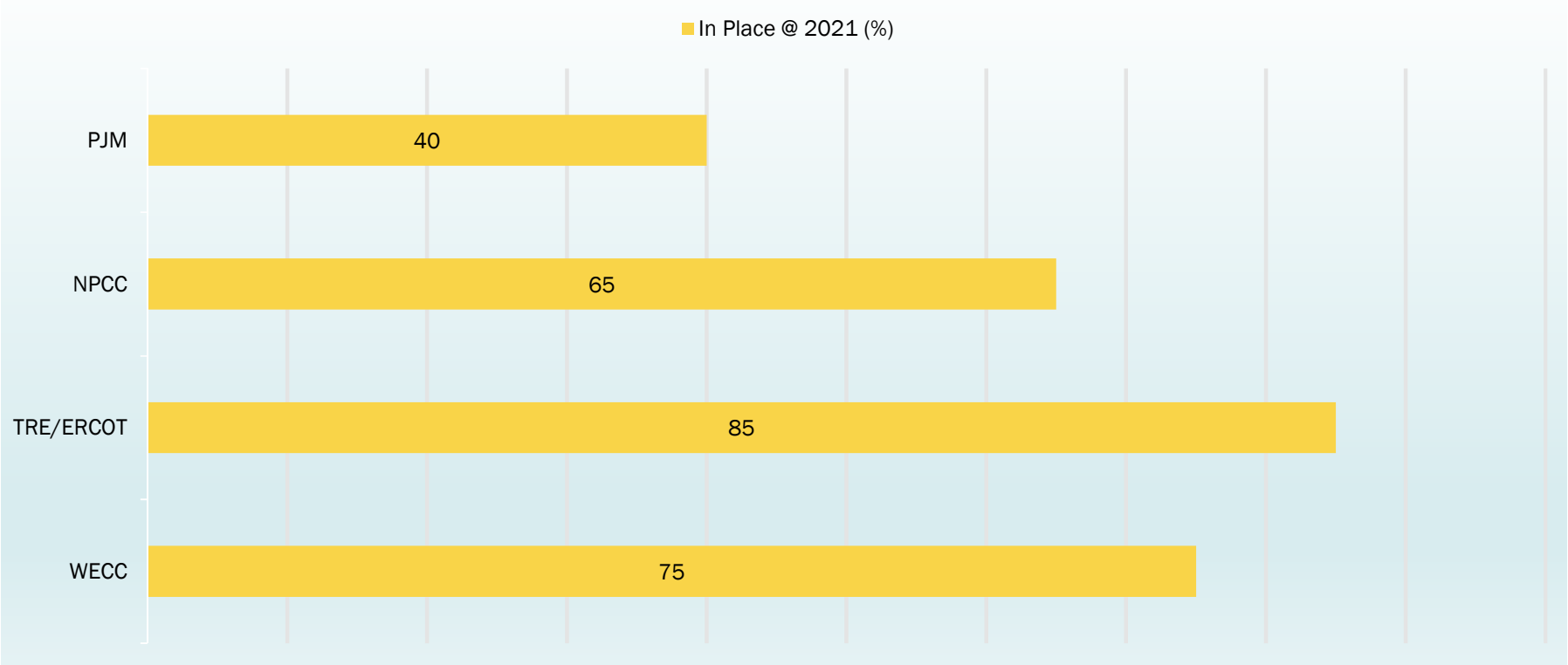
Pre-Plan Analysis –Status of cold weather preparation in 2021

- Work orders
- Checklists and Operator Rounds
- Corrective Action documentation
- Tracking system for work orders
- Training

Assessment by Region

- Measures/ Tasks
- Training
- Minimum Temperature Capability

Assessment by Region in 2021



Blending Operations with Compliance
Implementing Internal Controls – 2021 Controls after Internal Assessment

Control Environment (end of 20/21 Winter Season)	Control Activities (start of 21/22 Winter Season)	Monitoring Activities (start of 22/23 Winter Season)	Risk Assessment (start of 23/24 Winter Season)
Evidence Repository	One Plant Level Procedure and Compliance Evidence Form		
NERC Group filing of evidence	Plant meetings		
Annual Training	Plant specific training (tail boards)		
Escalation Group Management monitors tasks	Regional NERC Contact review of evidence		
Compliance Calendar			

2022 RF Winterization Analysis

RF site visit Lower Mount Bethel Plant and reviewed weatherization plan with plant personnel

- It was Operational review not a Compliance review

Results from RF Winterization Analysis

Consolidate - Procedures and Checklist should be included in one plan

Include - time period when checklist will be used, roles responsibilities

Determine - Critical Components that should be in plan

Add - Time Frames on when heat trace and other components will be reviewed for winter prep

Blending Operations with Compliance Implementing Internal Controls – 2022 Controls

Control Environment (end of 20/21 Winter Season)	Control Activities (start of 21/22 Winter Season)	Monitoring Activities (start of 22/23 Winter Season)	Risk Assessment (start of 23/24 Winter Season)
(Consolidate) **Evidence Repository**	(Consolidate) **One Plant Level Procedure and Compliance Evidence Form**	(Include) **Plant Work Orders** (time periods for checklists and responsibilities)	
(Include) **Task Reminders**	(Determine) **Plant Critical Equipment List**	(Add) **Plant routine checklists**	
(Add Time Frame) **Annual Training**	(Include) **Tasks assigned to Plant NERC Contact**	(Add) **Pre-weather event checklists**	
NERC Group filing of evidence	Plant specific training (tail boards)	Corrective Work Orders	
Escalation Group Management monitors tasks	Plant meetings	Annual completion of EOP-011-2 Compliance Evidence Form	
Compliance Calendar	Regional NERC Contact review of evidence	NERC Cold Weather Real-Time Limitations Form	

2023 NERC Alert and Essential Actions

- Requirements from Future Standard EOP-012-2
- Essential Actions – Six (6) that apply to Generator Operator (GO)

Future Requirements

Requirements from EOP-012-2

- Identify in the cold weather preparedness plan, the Generator Cold Weather Critical Component(s), and freeze protection measures
- Determine if Generator Cold Weather Reliability Event occurred
- Develop Corrective Action Plan for Generator Cold Weather Reliability Event

Blending Operations with Compliance Implementing Internal Controls – 2023 Controls

Control Environment (end of 20/21 Winter Season)	Control Activities (start of 21/22 Winter Season)	Monitoring Activities (start of 22/23 Winter Season)	Risk Assessment (start of 23/24 Winter Season)
(Consolidate)**Evidence Repository**	(Consolidate) **One Plant Level Procedure and Compliance Evidence Form**	(Include) **Plant Work Orders** (time periods for checklists and responsibilities)	**Cold Weather Preparedness – Annual Review**
(Include) **Task Reminders**	(Determine) **Plant Critical Equipment List**	(Add) **Plant routine checklists**	**Review of GADs Data – what tripped or derated unit**
(Add Time Frame) **Annual Training**	(Include) **Tasks assigned to Plant NERC Contact**	(Add) **Pre-weather event checklists**	**Generator Cold Weather Event Form**
NERC Group filing of evidence	Plant specific training (tail boards)	Corrective Work Orders	**Corrective Action Plans (CAP)**
Escalation Group Management monitors tasks	Plant meetings	Annual completion of EOP-011-2 Compliance Evidence Form	Corporate NERC Group review of plant's Annual EOP-011-2 Compliance Evidence Form
Compliance Calendar	Regional NERC Contact review of evidence	NERC Cold Weather Real-Time Limitations Form	Weatherization Regulatory Risk Analysis Dashboard

Improved Critical Component Lists

Example Cold Weather Critical Component List

List the vulnerable components that could cause a unit trip/derate/delayed start should a freeze up occur.

		What is the Freeze Protection?				
Location & Tag Identifier	**Description**	**Insulation**	**Heat Tracing**	**Temporary Heaters**	**Wind Breaks**	**Other**
Top of HRSG 3						
SHP-PT-3607-10	High Pressure Steam Outlet Pressure	Yes	Yes	No	Yes	
SRH-PT-3806-03	Hot Reheat Outlet Steam Pressure	Yes	Yes	No	Yes	
SHP-PT-3600-10	High Pressure Drum Transmitter B	Yes	Yes	No	Yes	
SHP-PT-3600-09	High Pressure Drum Transmitter A	Yes	Yes	No	Yes	
SRH-PT-3800-04	Cold Reheat Inlet Steam Pressure	Yes	Yes	No	Yes	
SHP-PT-3600-11	High Pressure Drum Transmitter C	Yes	Yes	No	Yes	
SHP-PT-3600-13	High Pressure Drum Transmitter	No	Yes	No	Yes	

Note: Please check the box above that applies

3. What's Next for Weatherization

- Plants– continual review of winter preparations
- Continuous Improvements
- Lessons Learned from NERC Alert

Annual Review of winter preparations

Common Concerns

- Heat Trace issues
- Insulation damage
- Safety issues during storms to make repairs
- Gas Plant Inlet screens

Corrective Action Plan

- Address common concerns
- Share plans throughout fleet
- Update Critical Component List

Continuous Improvements

- Update work orders with items from previous years CAP
- Small team in each region to review weatherization of each plant (fleet wide communications
- Annually review of each plants GADs Data, Weatherization Work Orders and Checklists

Questions

Nicholas Poluch
Sr Manager NERC| Talen Energy
Nicholas.Poluch@TalenEnergy.com

Colleen Dolan
Manager, NERC Internal Controls | Talen Energy
Colleen.Dolan-VanZandt@talenenergy.com

Lessons Learned

NERC Alert - Question 13 Applied to Weatherization Planning

Question From NERC Alert
Question 13: Did any of your units experience a Generator Cold Weather Reliability Event(s) (GCWRE) in the 2022–2023 winter season as described in Essential Action #4?

There were 18 questions total for the GO to complete – Question 13 required the most work

The Challenge with Question 13:

1. Needed to pull together all operations data for December, January and February
2. Get all the events for the 2022/23 Season for 11 plants in one place to review
3. How to determine if a derate met the **GCWRE** definition

Challenge #1:
Needed to pull together all operations data for December, January and February

Solution:
Meet with Marketing Group and had them send us each facilities GADs Data

Outage Start Date: Year	Outage Start Date	Outage End Date	Outage Number	Event Type	Category	Cause Code	Cause Description	Outage Notes	Net Dependable Capacity	MW Reduction	Available Capacity	Outage Duration Hrs
2022	1/10/2022 12:00:00 AM	1/14/2022 9:00:00 PM	2	MO	maint	0740	Boiler recirculation pumps		850.0	850.0	0.0	117.00
	3/4/2022 12:00:00 AM	3/11/2022 12:00:00 AM	4	MO	maint	4700	Generator voltage control		850.0	850.0	0.0	168.00
	3/11/2022 12:00:00 AM	4/8/2022 7:09:00 AM	5	PO	plan	4700	Generator voltage control		850.0	850.0	0.0	678.15
	4/8/2022 11:56:00 PM	4/29/2022 6:01:00 AM	6	PO	plan	4140	Bearings		850.0	850.0	0.0	486.08
	4/29/2022 6:18:00 AM	4/29/2022 7:13:00 AM	7	PO	plan	4140	Bearings		850.0	850.0	0.0	0.92
	4/29/2022 8:13:00 AM	4/29/2022 10:47:00 AM	8	PO	plan	4140	Bearings		850.0	850.0	0.0	2.57
	6/27/2022 12:00:00 AM	6/29/2022 9:21:00 PM	12	MO	maint	3620	Main transformer	GSU 3 Transformer PBA Cable Replacement (Cooling System Signal) 3B BFPT Coupling inspection	850.0	850.0	0.0	69.35
	8/15/2022 12:00:00 AM	8/18/2022 10:36:00 AM	26	MO	maint	1535	Flue gas recirculating fan	3A Gas Recirc Fan vibration inspection and repair/ Boiler Tube Leak repair	850.0	850.0	0.0	82.60
	10/1/2022 12:00:00 AM	11/1/2022 12:00:00 AM	30	MO	maint	3613	Switchyard system protection devicies - (not OMC)	230kv Relay Protection work, Aux Control Panel Rpelacement & BOP	850.0	850.0	0.0	744.00
	11/3/2022 12:00:00 AM	11/6/2022 11:59:00 PM	33	MO	maint	4609	Other exciter problems	Exciter Cubicle Leak Inspection and Repair	850.0	850.0	0.0	96.98
	12/12/2022 6:00:00 AM	12/16/2022 4:56:00 PM	38	MO	maint	3415	Feedwater pump/drive lube oil system	3a BFPT Oil Pump gear replacement & Boiler Tube Leak Repairs	850.0	850.0	0.0	106.93
	12/25/2022 5:00:00 AM	12/25/2022 7:53:00 AM	40	SF	forced	0740	Boiler recirculation pumps	Boiler Circulating Water Pumps Differential trainsmitter Trouble shooting	850.0	850.0	0.0	2.88
	12/25/2022 7:53:00 AM	12/25/2022 9:27:00 AM	41	D1	forced	9630	Opacity - fossil	Opacity issues related to Main Fuel and Boiler Damper operation	850.0	700.0	150.0	1.57
2023	3/3/2023 12:00:00 AM	4/4/2023 9:55:00 AM	2	PO	plan	0510	Main steam relief/safety valves off superheater	Planned Outage - Boiler Safety Safety Valve Repair / Unit 3 Turbine Woodward / BOP	850.0	850.0	0.0	776.92
	4/4/2023 1:47:00 PM	4/6/2023 7:59:00 AM	3	PO	plan	0510	Main steam relief/safety valves off superheater	Planned Outage - Boiler Safety Valve Repair / Unit 3 Turbine Woodward / BOP	850.0	850.0	0.0	42.20
	4/6/2023 8:13:00 PM	4/7/2023 1:05:00 PM	4	PO	plan	0510	Main steam relief/safety valves off superheater	Planned Outage	850.0	850.0	0.0	16.87
	4/7/2023 2:01:00 PM	4/9/2023 10:59:00 AM	5	MO	maint	4899	Other miscellaneous generator problems	Unit 3 Telemetry Issues	850.0	850.0	0.0	44.97
	4/17/2023 12:00:00 AM	4/28/2023 12:00:00 AM	9	MO	maint	0359	Gas burner piping and valves	Unit 3 & 4 Common Gas Header Outage / Unit 3 Exciter Cooling Water leak / Unit 3 Boiler Tube leak repair / 3VMS-2 Main Steam to Aux. Steam block valve Limitorque MOV / 3B CWP Discharge Valve packing	850.0	850.0	0.0	264.00
	4/28/2023 12:00:00 AM	4/30/2023 3:45:00 PM	14	MO	maint	4609	Other exciter problems	Unit 3 Maintenance Outage - Unit 3 Exciter				

Challenge #2:
Get all the events for the 2022/23 Season for 11 plants in one place

Solution:
Put all the events coded derate, startup failure or trip onto one spreadsheet

Summary of Derates for Winter Dec 2022- Feb 2023

Plant	Cause Description	Temp at Time of Event (degs F)	ECWT (degs F)	Outage Notes	Net Dependable Capacity	10% of Total Capacity	MW Reduction	Outage Duration Hours	Did Derate Meet Requirements of GCWRE according to Essential Action #4	Explanation for Answer to Essential Action #4

Challenge #3:
How to determine if a derate met the GCWRE definition

Solution:
Create a flow chart with criteria for a forced derate and analyze each derate that occurred

Using the Essential Action #4 Generator Cold Weather Reliability Event(s) definition, did any units experienced a GCWRE during the 2022/23 winter season.

Generator Cold Weather Reliability Event (GCWRE) is defined as one of the following events for which the apparent cause(s) is **due to the freezing of equipment** within the GO's control and the dry bulb temperature at the time of the event was at or above the ECWT:

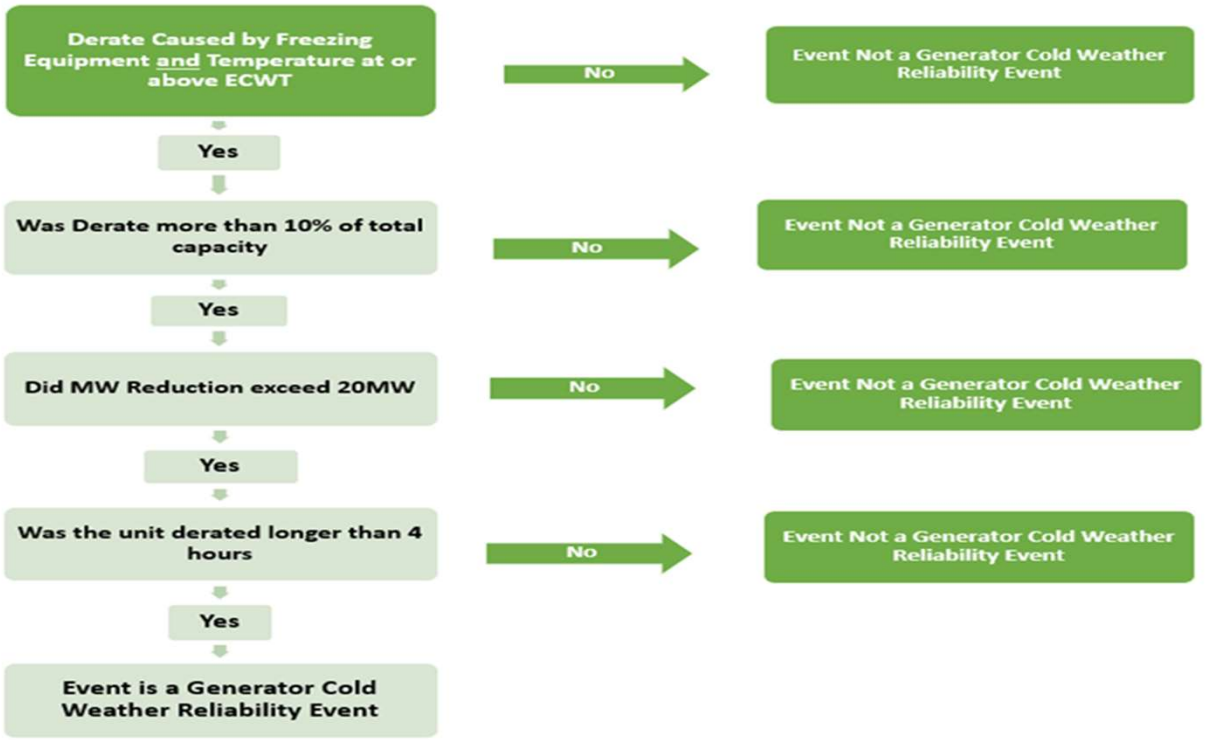
(1) a forced derate of more than 10% of the total capacity of the unit and exceeding 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Challenge #3:
How to determine if a derate met the GCWRE definition

Solution:
Create a flow chart with criteria for a forced derate and analyze each derate that occurred



Question 13: Did any of your units experience a Generator Cold Weather Reliability Event(s) (GCWRE) in the 2022–2023 winter season as described in Essential Action #4?

Answered by putting each derate through flow chart and documented in last two columns of Summary of Derates for Winter 2022-2023

Cause Description	Temp at Time of Event (degs F)	ECWT (degs F)	Outage Notes	Net Dependable Capacity	10% of Total Capacity	MW Reduction	Outage Duration Hours	Did Derate Meet Requirements of GCWRE according to Essential Action #4	Explanation for Answer to Essential Action #4
River Intake Traveling screens	19	5	River Intake Issues	742	74.2	387	115.2	No	No freezing of equipment
Feedwater instrumentation (not local controls)	11	-1	U2 picked up on PLS for AGC 24Dec2022 1500. U2 sync 25Dec2022 0240 and AGC 25Dec2022 1715. Event Wt. avg MWn from 12/24 1500 to 12/25 1715. Unit late from ambient temp and wind chill below design intent of the plant caused start up separator level trans and BTB-2 position freezing[1], due to positioner being physically stuck in place due to mechanical issues not weather.	752.0	75.2	701.9	26.25	No	Equipment failed while offline, weather delayed repair

How do we apply all information going forward

How we applied what we learned from Question 13 to our current plan

- Look for trends or patterns that may need to be address
- Improve pre-winter weatherization preparations
- Blending Operations and Compliance – Risk Assessment Tools

Applying the Steps from answering NERC Alert Question 13 to address any risks to the plants in future

1. Review of GADs Data

Review all trips and derates during the Winter Season

2. Common causes for derates

Safety issued due to weather preventing repairs

Issues with water intakes being blocked due to debris

Icey roads preventing operator rounds

3. Update Component Lists

Do component lists capture what if anything derated unit during winter

Update lists if necessary

4. Review Plant Work Orders

Are common causes for derates captured on:

Plant routine checklists;

Pre-weather event checklists

Tools to Use Going Forward

- Improve Critical Component Lists
- Corrective Action Plan (CAP) Form
- Reliability Event Record Form
- Flow Chart to Analyze Derate

Improved Critical Component Lists

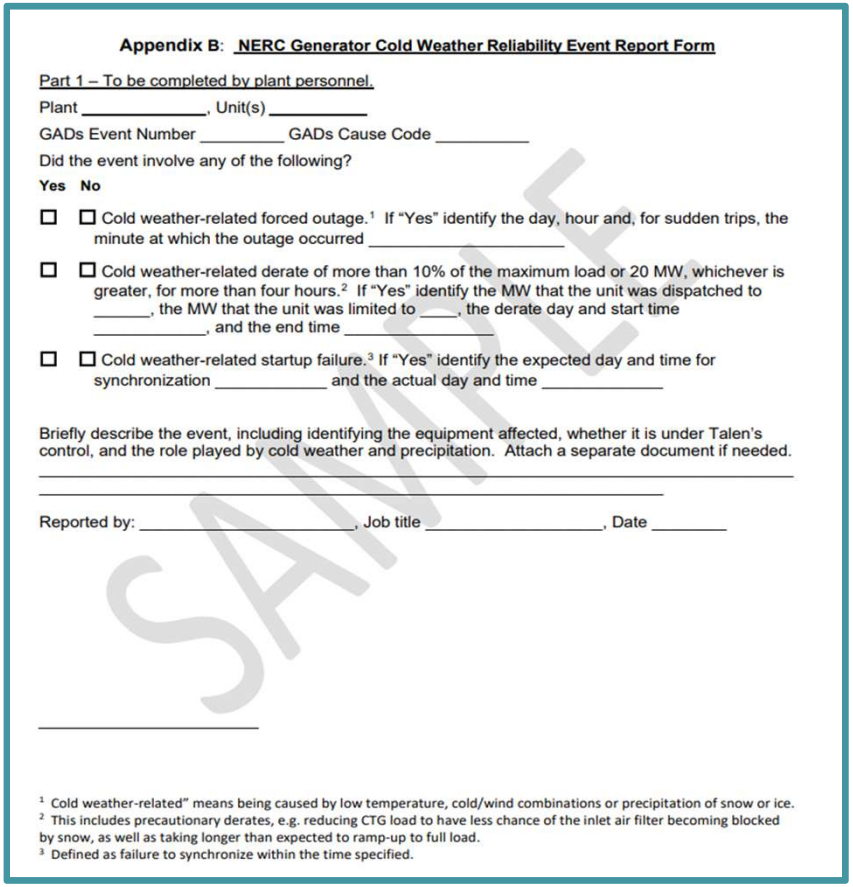
Example Cold Weather Critical Component List

List the vulnerable components that could cause a unit trip/derate/delayed start should a freeze up occur.

		What is the Freeze Protection?				
Location & Tag Identifier	**Description**	**Insulation**	**Heat Tracing**	**Temporary Heaters**	**Wind Breaks**	**Other**
Top of HRSG 3						
SHP-PT-3607-10	High Pressure Steam Outlet Pressure	Yes	Yes	No	Yes	
SRH-PT-3806-03	Hot Reheat Outlet Steam Pressure	Yes	Yes	No	Yes	
SHP-PT-3600-10	High Pressure Drum Transmitter B	Yes	Yes	No	Yes	
SHP-PT-3600-09	High Pressure Drum Transmitter A	Yes	Yes	No	Yes	
SRH-PT-3800-04	Cold Reheat Inlet Steam Pressure	Yes	Yes	No	Yes	
SHP-PT-3600-11	High Pressure Drum Transmitter C	Yes	Yes	No	Yes	
SHP-PT-3600-13	High Pressure Drum Transmitter	No	Yes	No	Yes	

Note: Please check the box above that applies

Generator Cold Weather Reliability Event Record Form



Appendix B: NERC Generator Cold Weather Reliability Event Report Form

Part 1 – To be completed by plant personnel.

Plant _____, Unit(s) _____

GADs Event Number _____ GADs Cause Code _____

Did the event involve any of the following?

Yes No

☐ ☐ Cold weather-related forced outage.[1] If "Yes" identify the day, hour and, for sudden trips, the minute at which the outage occurred _____

☐ ☐ Cold weather-related derate of more than 10% of the maximum load or 20 MW, whichever is greater, for more than four hours.[2] If "Yes" identify the MW that the unit was dispatched to _____, the MW that the unit was limited to ____, the derate day and start time _____, and the end time _____

☐ ☐ Cold weather-related startup failure.[3] If "Yes" identify the expected day and time for synchronization _____ and the actual day and time _____

Briefly describe the event, including identifying the equipment affected, whether it is under Talen's control, and the role played by cold weather and precipitation. Attach a separate document if needed.

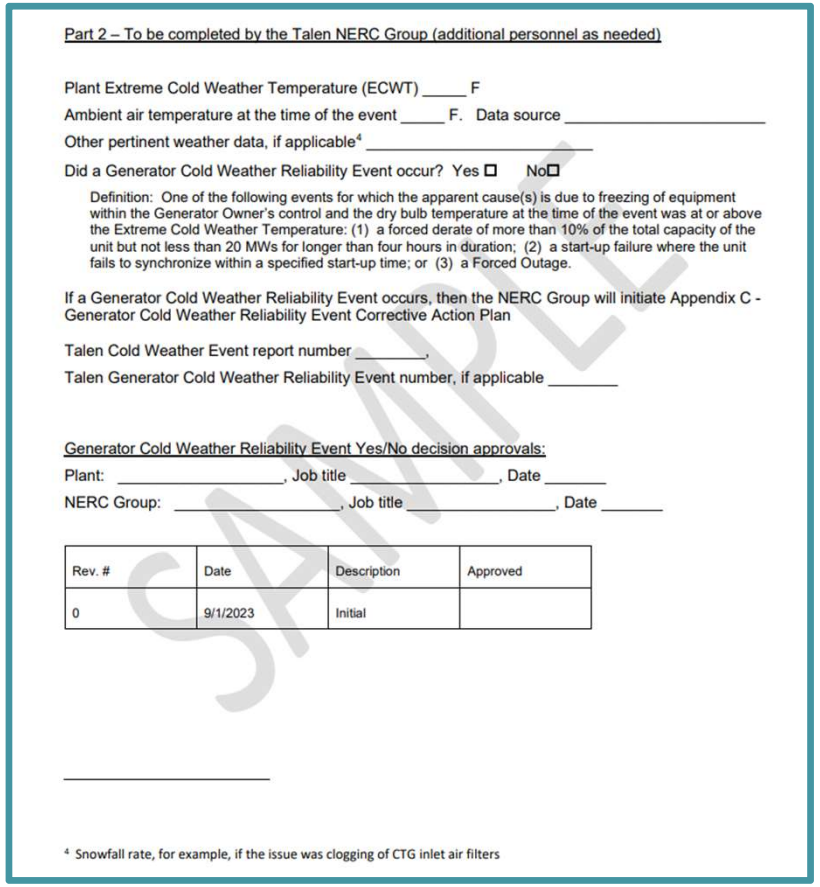
_____

_____

Reported by: _____, Job title _____, Date _____

_____

[1] Cold weather-related" means being caused by low temperature, cold/wind combinations or precipitation of snow or ice.
[2] This includes precautionary derates, e.g. reducing CTG load to have less chance of the inlet air filter becoming blocked by snow, as well as taking longer than expected to ramp-up to full load.
[3] Defined as failure to synchronize within the time specified.



Part 2 – To be completed by the Talen NERC Group (additional personnel as needed)

Plant Extreme Cold Weather Temperature (ECWT) _____ F

Ambient air temperature at the time of the event _____ F. Data source _____

Other pertinent weather data, if applicable[4] _____

Did a Generator Cold Weather Reliability Event occur? Yes ☐ No☐

Definition: One of the following events for which the apparent cause(s) is due to freezing of equipment within the Generator Owner's control and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature: (1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration; (2) a start-up failure where the unit fails to synchronize within a specified start-up time; or (3) a Forced Outage.

If a Generator Cold Weather Reliability Event occurs, then the NERC Group will initiate Appendix C - Generator Cold Weather Reliability Event Corrective Action Plan

Talen Cold Weather Event report number _____,

Talen Generator Cold Weather Reliability Event number, if applicable _____

Generator Cold Weather Reliability Event Yes/No decision approvals:

Plant: _____, Job title _____, Date _____

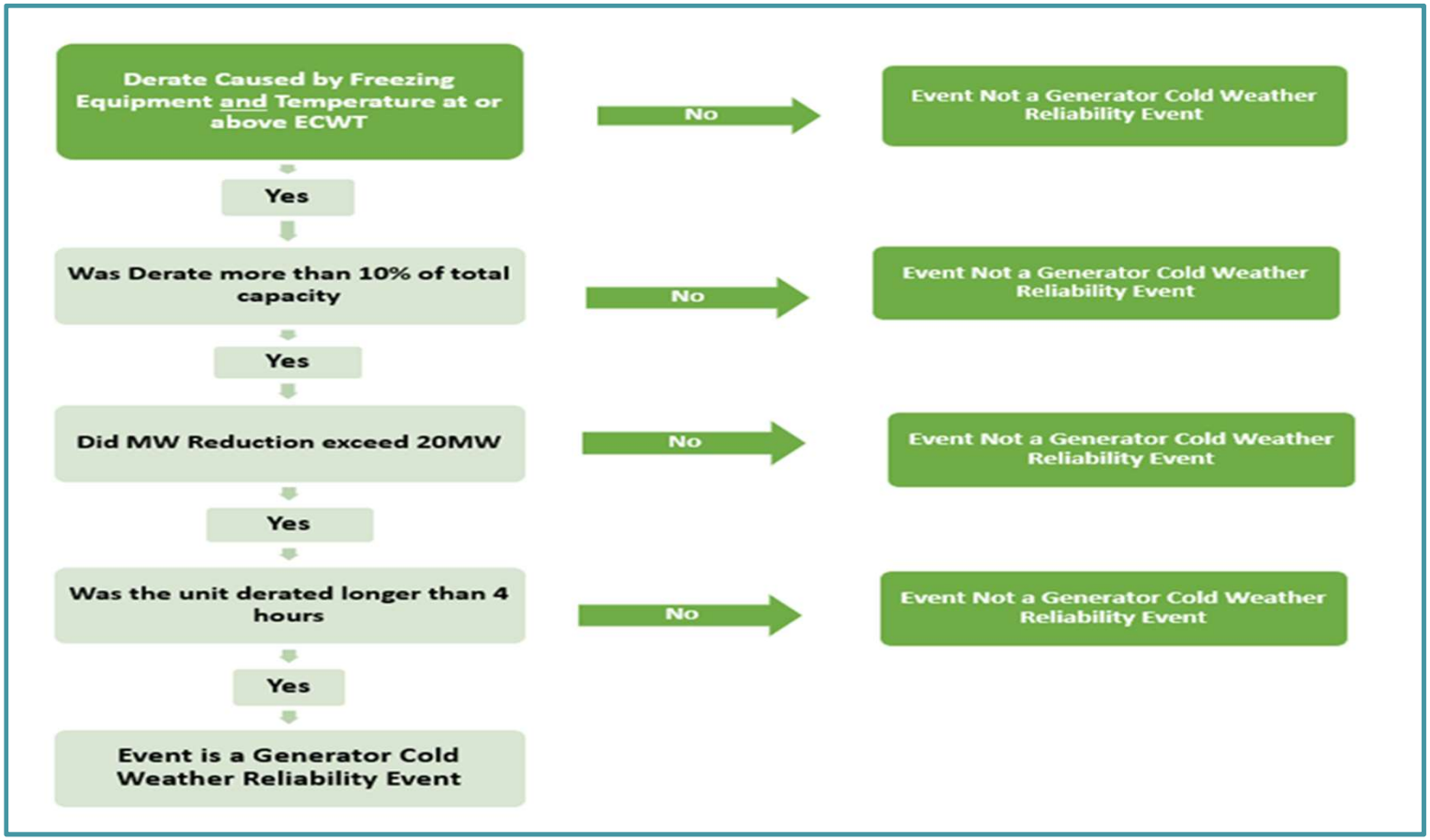
NERC Group: _____, Job title _____, Date _____

Rev. #	Date	Description	Approved
0	9/1/2023	Initial	

_____

[4] Snowfall rate, for example, if the issue was clogging of CTG inlet air filters

Flow chart to Analyze Derates



Corrective Action Plan (CAP) Form

Appendix C

NERC Generator Cold Weather Reliability Event Corrective Action Plan Form

Basic Data

Plant _____, Unit(s) _____,

Generator Cold Weather Reliability Event date _____

Talen Cold Weather Event report number _____

Talen Generator Cold Weather Reliability Event number _____

EOP-012 Required Information

R6.1: Summary, cause, and data:

Nature of event: Cold weather-related forced outage ___, derate ___, startup failure ___

Description of event:[1] _____

_____

Cause(s): _____

Relevant data[2]: _____

Corrective actions planned[3] _____

_____

Target completion date _____

R6.2: Applicability at other generating units owned by Talen:[4]

_____

_____

R6.3: Operating limitations or impacts to the cold weather preparedness plan that apply until execution of the corrective action(s) identified in the CAP:

Operating limitations:

Capability and availability _____

Fuel supply and inventory concerns _____

Fuel switching capabilities _____

_____

[1] Attach a separate document if appropriate.
[2] e.g. dry bulb temperature, wind speed, snowfall rate, NERC Extreme Cold Weather Temperature
[3] Attach a separate document if appropriate.
[4] Consider all Talen facilities, not just those in the same region.

Environmental constraints _____

Minimum temperature capability _____

Cold weather preparedness plan _____

R6.4: Updates required for the list of Generator Cold Weather Critical Components, or their freeze protection measures in the cold weather preparedness plan(s):

_____

CAP Approvals

Plant: _____, Job title _____, Date[5] _____

NERC Group: _____, Job title _____, Date _____

Implementation

Progress Tracking:

Plant	Unit/Equipment	Work Order or Purchase Order Number	Date Opened	Date Closed

CAP completion date _____

Completion date for work at other units or plants, if applicable _____

Other actions taken and completion dates, if applicable: _____

Close-out Confirmation

Plant _____, Job title _____, Date _____

NERC Group _____, Job title _____, Date _____

Rev. #	Date	Description	Approved
0	9/1/2023	Initial	

_____

[5] Must be within 150 days of the Generator Cold Weather Reliability Event

In Summary
Risk Assessment Improvements from NERC Alert Actions

Control Environment (end of 20/21 Winter Season)	Control Activities (start of 21/22 Winter Season)	Monitoring Activities (start of 22/23 Winter Season)	Risk Assessment (start of 23/24 Winter Season)
(Consolidate)**Evidence Repository**	(Consolidate) **One Plant Level Procedure and Compliance Evidence Form**	(Include) **Plant Work Orders** (time periods for checklists and responsibilities)	**Cold Weather Preparedness – Annual Review**
(Include) **Task Reminders**	(Determine) **Plant Critical Equipment List**	(Add) **Plant routine checklists**	**Review of GADs Data – what tripped or derated unit**
(Add Time Frame) **Annual Training**	(Include) **Tasks assigned to Plant NERC Contact**	(Add) **Pre-weather event checklists**	**Generator Cold Weather Event Form**
NERC Group filing of evidence	Plant specific training (tail boards)	Corrective Work Orders	**Corrective Action Plans (CAP)**
Escalation Group Management monitors tasks	Plant meetings	Annual completion of EOP-011-2 Compliance Evidence Form	Corporate NERC Group review of plant's Annual EOP-011-2 Compliance Evidence Form
Compliance Calendar	Regional NERC Contact review of evidence	NERC Cold Weather Real-Time Limitations Form	Weatherization Regulatory Risk Analysis Dashboard

Questions

Nicholas Poluch
Sr Manager NERC| Talen Energy
Nicholas.Poluch@TalenEnergy.com

Colleen Dolan
Manager, NERC Internal Controls | Talen Energy
Colleen.Dolan-VanZandt@talenenergy.com


break
time

CMEP UPDATES

Zack Brinkman

Manager, CIP Compliance Monitoring, RF

Jim Kubrak

Manager, Operations and Planning Compliance Monitoring, RF

Maxwell Reisinger

Senior Counsel, RF

ENGAGEMENTS IN ALIGN & SEL

Jim Kubrak, O&P Compliance Manager

Zack Brinkman, CIP Compliance Manager

2023 RF Workshop

RELIABILITY FIRST

slido

Have you logged into the Align tool?

ⓘ Start presenting to display the poll results on this slide.

slido

Have you used the Align tool for an engagement?

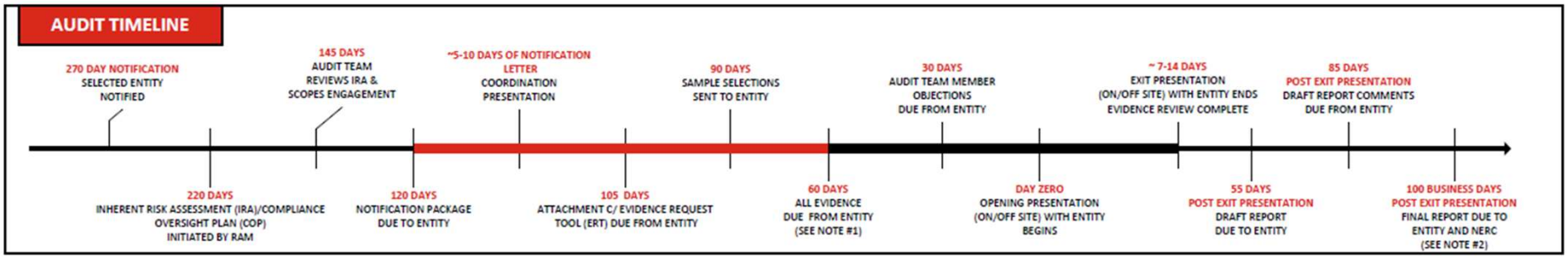
ⓘ Start presenting to display the poll results on this slide.

WHERE ARE WE AT WITH ALIGN & SEL

- Piloted in 2022/2023 – Thank you for your help
- Went live 7/1/2023 – with Align and the SEL
- All engagements moving forward will be within Align
- Helpful Material & Training
  - Coordination Presentations
  - Step-by-Step Work Instructions for Align and SEL (ANP)
  - *CIP Only - ERT Instructions (ANP)
  - NERC Videos and Documentation

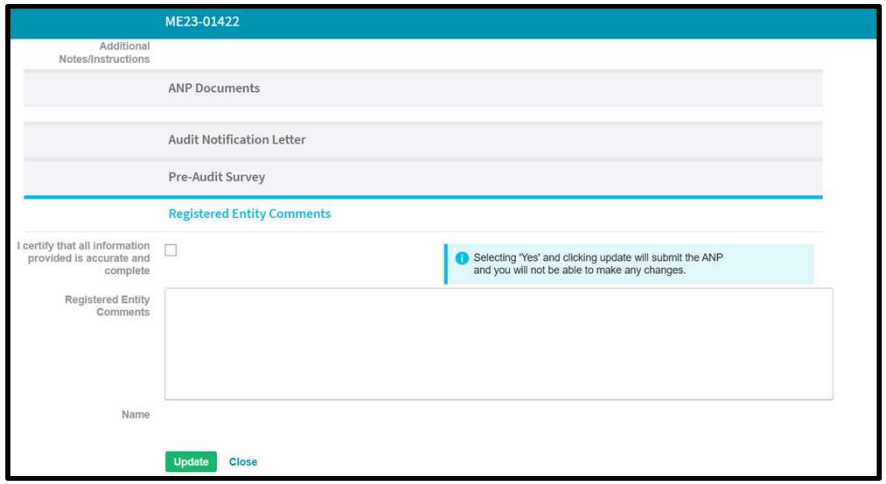
270-DAY NOTIFICATION

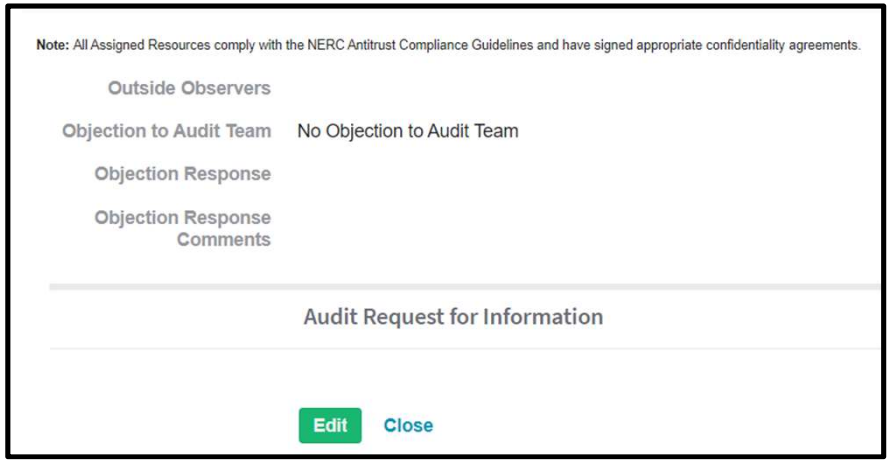
- 270-day notification is sent 270 days prior to the first day onsite/offsite week
- Alert will be received via Align to PCC
- RF PC will follow up with PCC via email
- Engagement will be visible in Align
- Scope is not known at this time



AUDIT NOTIFICATION PACKAGE

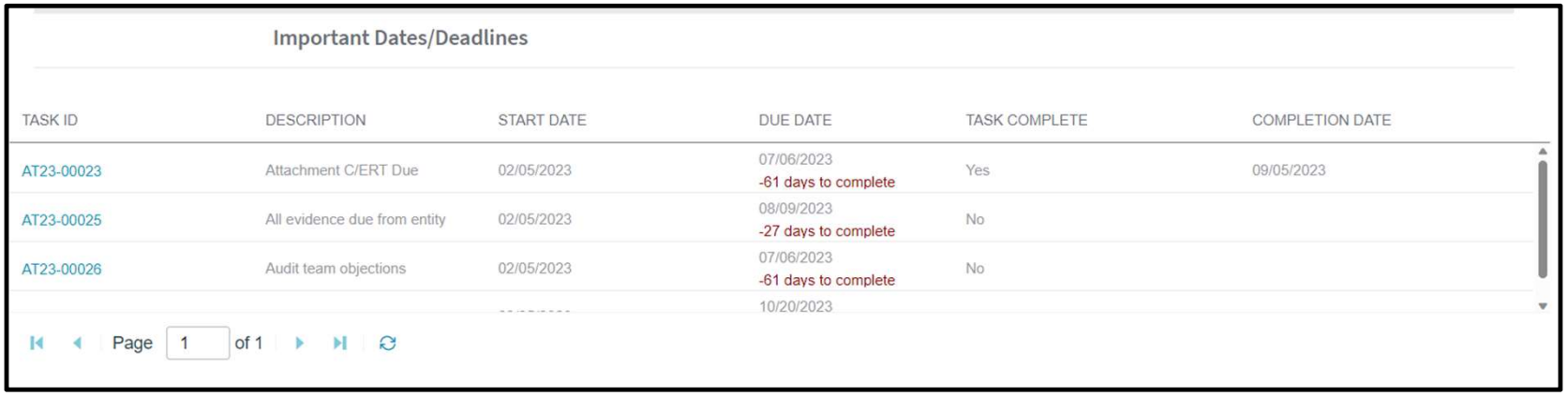
- 120-day mark
- *ANP Tab* - Included in Audit Notification package:
  - COBCE
  - RF Work Histories
  - COP
  - Notification Letter with Attachment A
- Top Left Drop down go to *Audit and Spot Checks*
  - *ANP Tab* - Attachment B Signed and placed into Align
  - *General Tab* - Signing that no objections to the audit team in **Align**

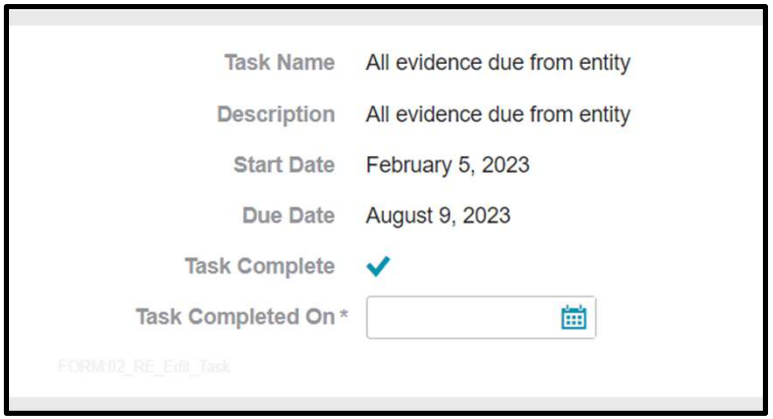




IMPORTANT DATES/DEADLINES

- Under the ANP Tab





SAMPLING PROCESS

- Under RFI's Category ANP will have Attachment C's for each standard and requirement or CIP ERT
  - Download the attachment C's/ERT fill them out and upload to the SEL
- RF will then review in the SEL and provide only index numbers back in a RFI categorized as Sampling

Index Number (Add More As Needed)
1
2
3
4
5

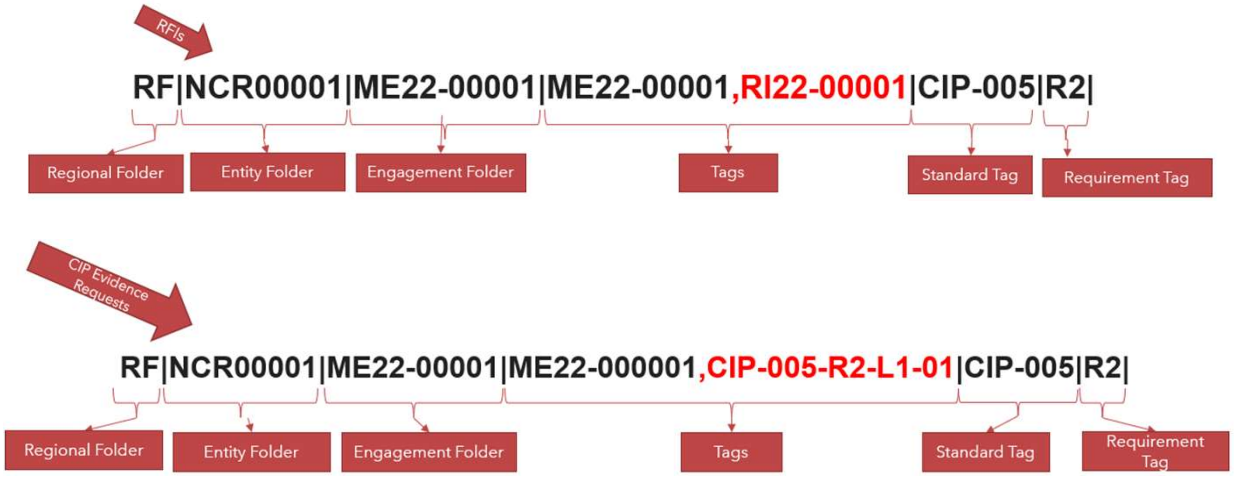
Audit Request for Information

ID	CATEGORY	DUE DATE	STATUS	CEA COMMENTS
RI23-007494	ANP	07/06/2023	CEA Review	
RI23-007497	Sampling	07/13/2023	Registered Entity Processing	Sampling Selections

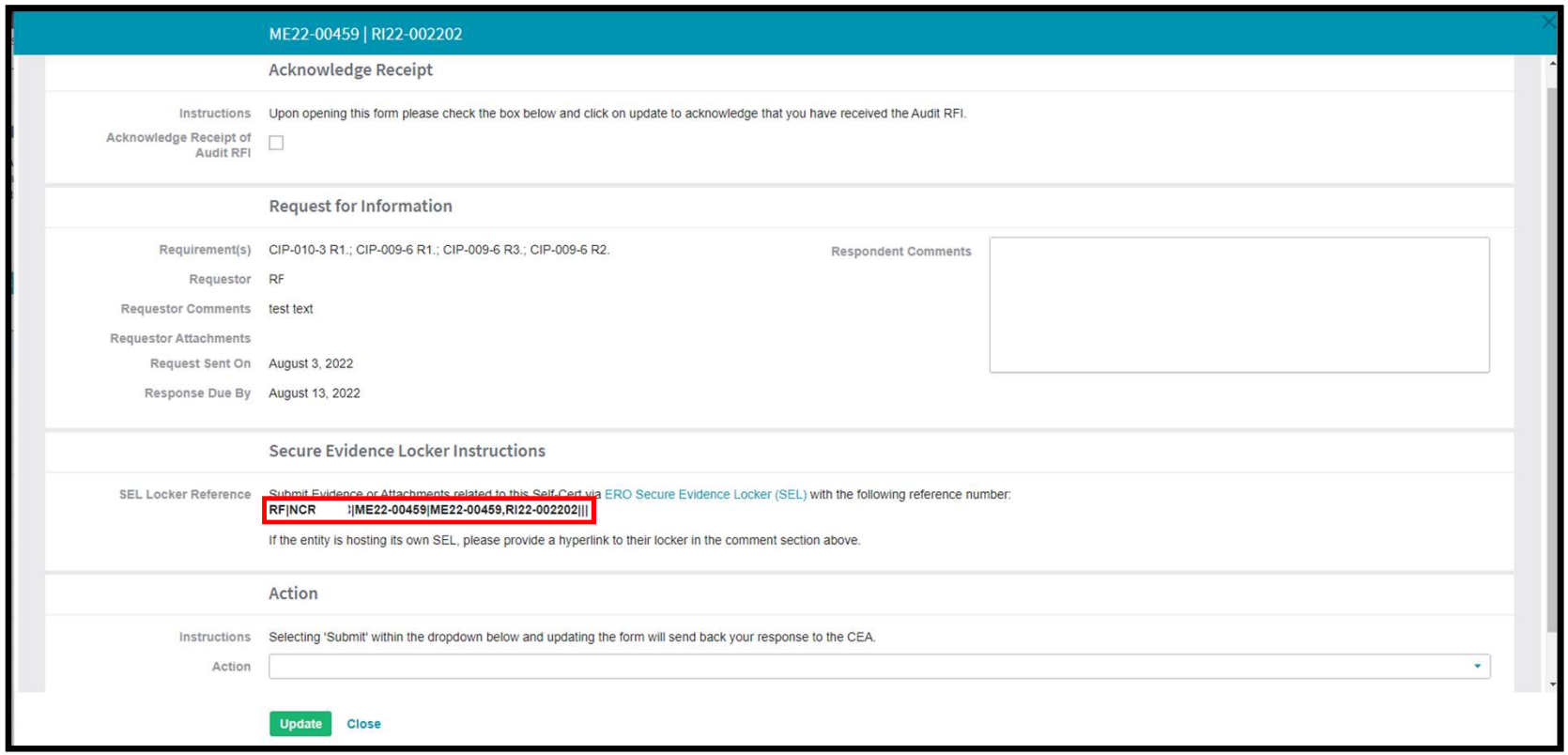
EVIDENCE SUBMITTAL

- SEL - All evidence will be submitted via the SEL
  - Initial Evidence submittal
    - CIP – SEL Reference IDs in the ERT
    - O&P – Reference IDs in RFIs
  - For both CIP and O&P, utilize RFI SEL IDs when responding to RFIs

- Reference ID Numbers



EXAMPLE OF REFERENCE IDs



EXAMPLE OF REFERENCE IDs

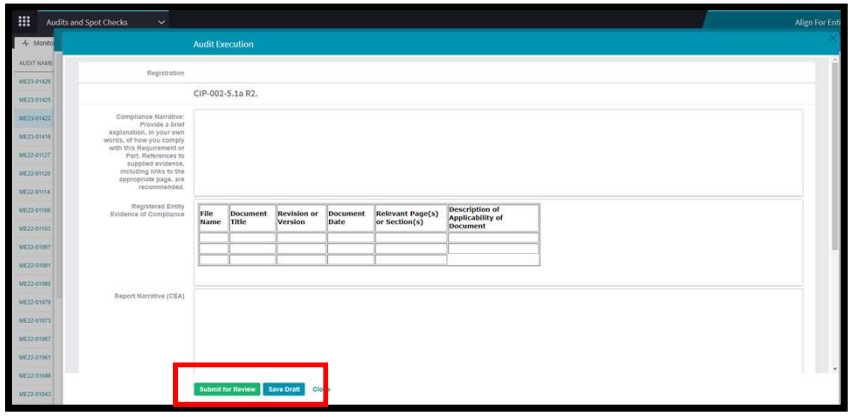
	A	B	C	D	E	F
1	NCR # NCR99999		Align Engagement #	ME105-1499	For use by Region	Region:
2	Detail Tab or Request ID	Standard	Require-ment	Initial Evidence Request Required in RSAW and NERC Evidence Request Spreadshee	Response Due Date	SEL Locker Reference ID
19	CIP-EOL-L1-01			Provide a list of Cyber Assets with operating systems, firmware, and/or software that is		RF|NCR99999|ME105-1499|ME105-1499,CIP-EOL-L1-01|||
20	CIP-002-R1-L1-01	CIP-002	R1	Provide the process that was implemented to identify each of the high impact and		RF|NCR99999|ME105-1499|ME105-1499,CIP-002-R1-L1-01|CIP-002|R1|
21	CIP-002-R1-L1-02	CIP-002	R1	Provide the following supporting information for each listed BES asset on the BES		RF|NCR99999|ME105-1499|ME105-1499,CIP-002-R1-L1-02|CIP-002|R1|
22	CIP-002-R1-L1-03	CIP-002	R1	Provide the following supporting information for each listed Transmission asset on the		RF|NCR99999|ME105-1499|ME105-1499,CIP-002-R1-L1-03|CIP-002|R1|
23	CIP-002-R1-L1-04	CIP-002	R1	Provide the following supporting information for each listed Generation asset on the		RF|NCR99999|ME105-1499|ME105-1499,CIP-002-R1-L1-04|CIP-002|R1|

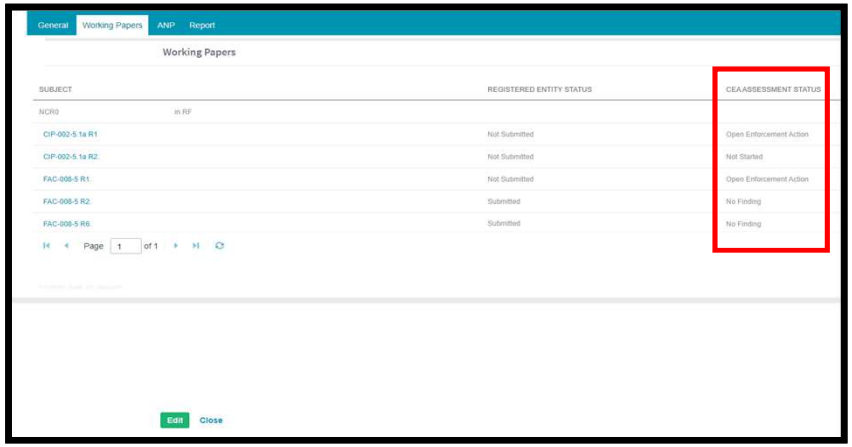
CONFIDENTIAL

Request ID	Standard	Requirement	Sample Set	Sample Set	Sample Set Evidence Request	SEL Locker Reference ID
CIP-005-R1-L2-01	CIP-005	R1 Part 1.1	ESP-L2-01	Source Tab: ESP	For each ESP in the Sample Set ESP-L2-01, provide a network diagram that	RF|NCR99999|ME105-1499|ME105-1499,CIP-005-R1-L2-01|CIP-005|R1
CIP-005-R1-L2-02	CIP-005	R1 Part 1.1	CA-L2-01	Source Tab: CA	For each Cyber Asset in Sample Set CA-L2-01, provide evidence that the Cyber	RF|NCR99999|ME105-1499|ME105-1499,CIP-005-R1-L2-02|CIP-005|R1
CIP-005-R1-L2-03	CIP-005	R1 Part 1.1	CA-L2-02	Source Tab: CA	For each Cyber Asset in Sample Set CA-L2-02, that are identified as not being	RF|NCR99999|ME105-1499|ME105-1499,CIP-005-R1-L2-03|CIP-005|R1
CIP-005-R1-L2-04	CIP-005	R1 Part 1.3	EAP-L2-01	Source Tab: EAP	For each EAP in Sample Set EAP-L2-01, provide evidence of inbound and	RF|NCR99999|ME105-1499|ME105-1499,CIP-005-R1-L2-04|CIP-005|R1
CIP-005-R1-L2-05	CIP-005	R1 Part 1.4	CA-L2-03	Source Tab: CA	For each Cyber Asset in Sample Set CA-L2-03, with Dial-up Connectivity,	RF|NCR99999|ME105-1499|ME105-1499,CIP-005-R1-L2-05|CIP-005|R1

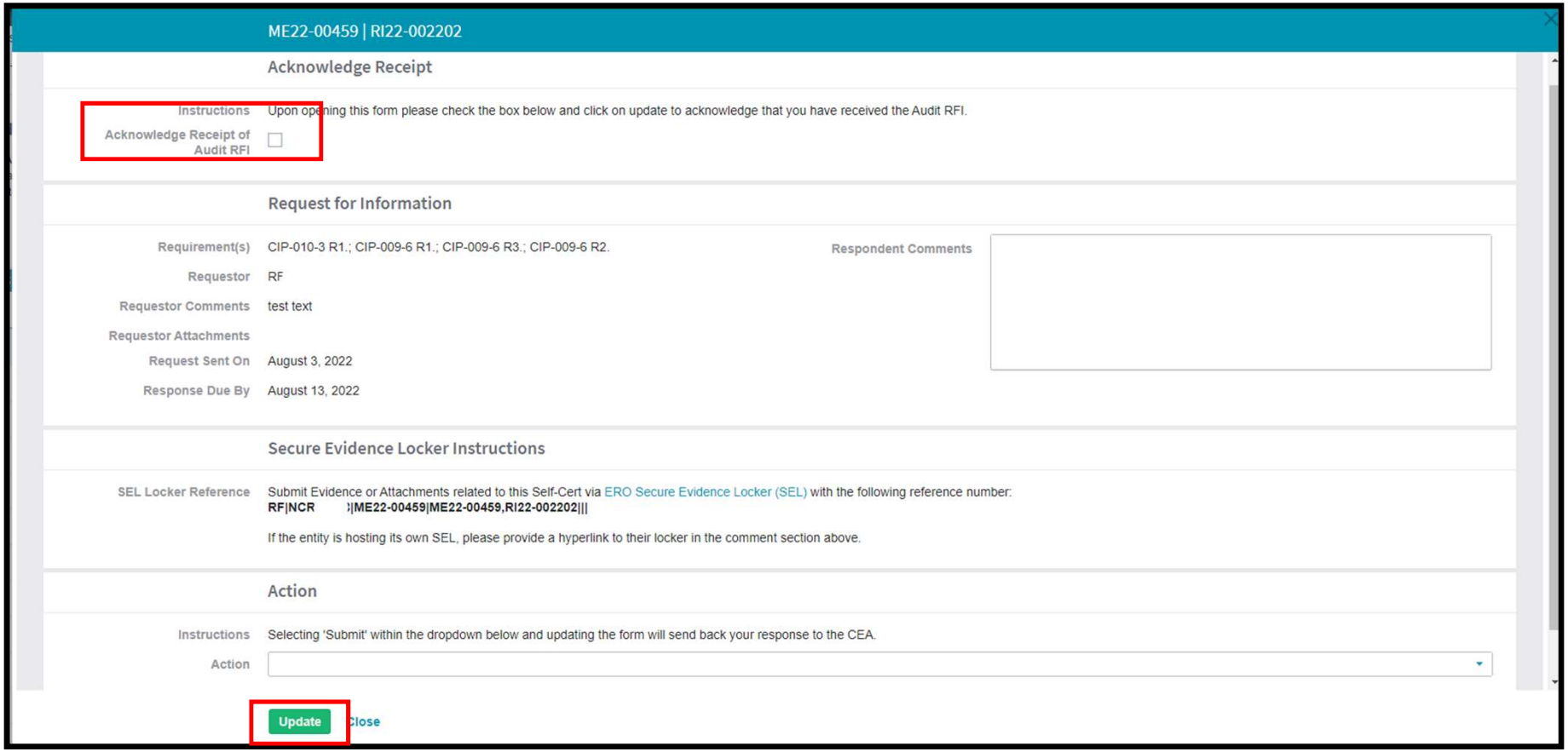
WORKING PAPERS

- Align
  - RSAWs input in Align
  - Submit work paper once evidence has been submitted into the SEL
- CEA Assessment Status
  - See status of Audit team review

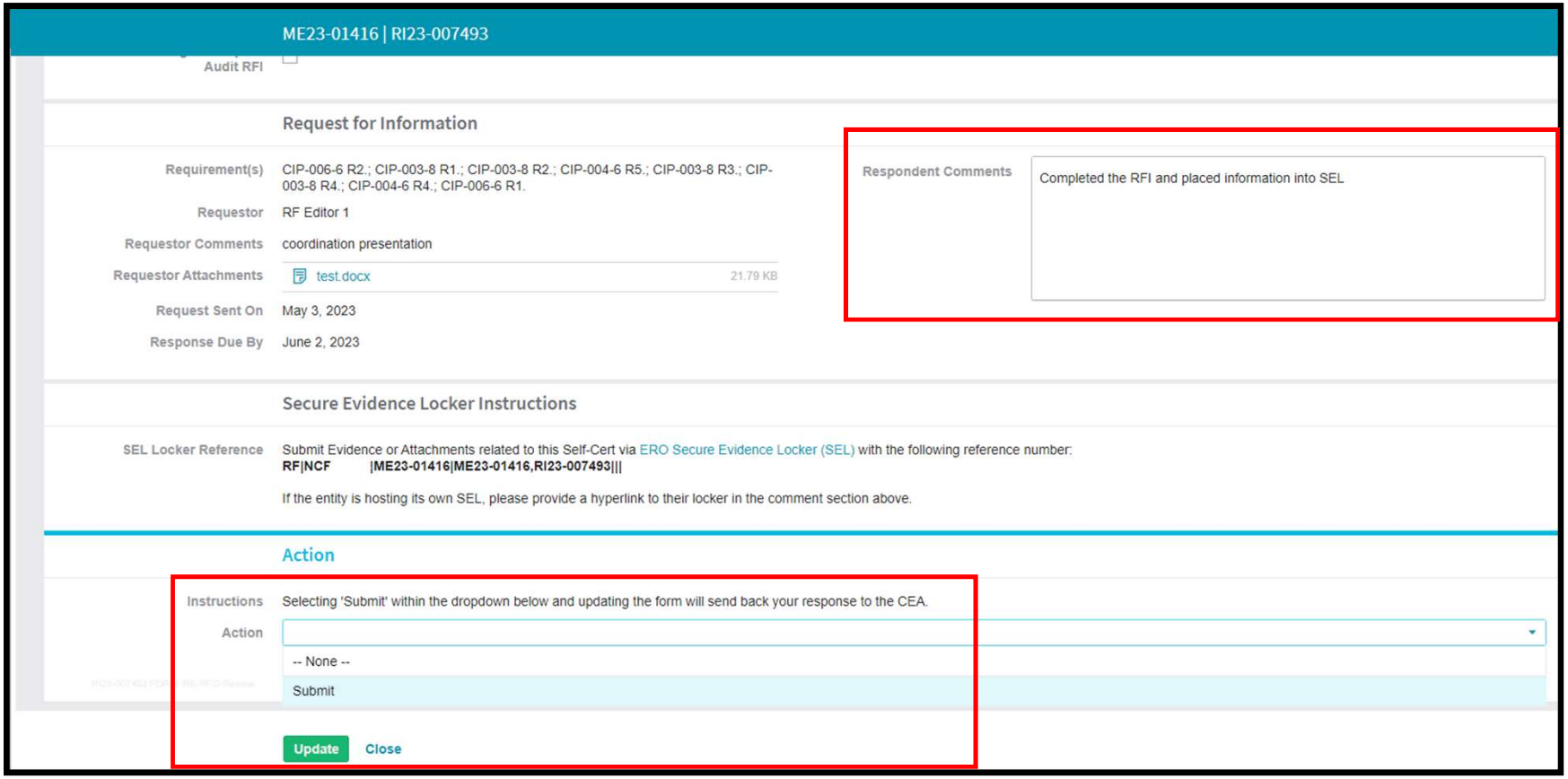




ACKNOWLEDGING THE RFI



SUBMITTING THE RFI

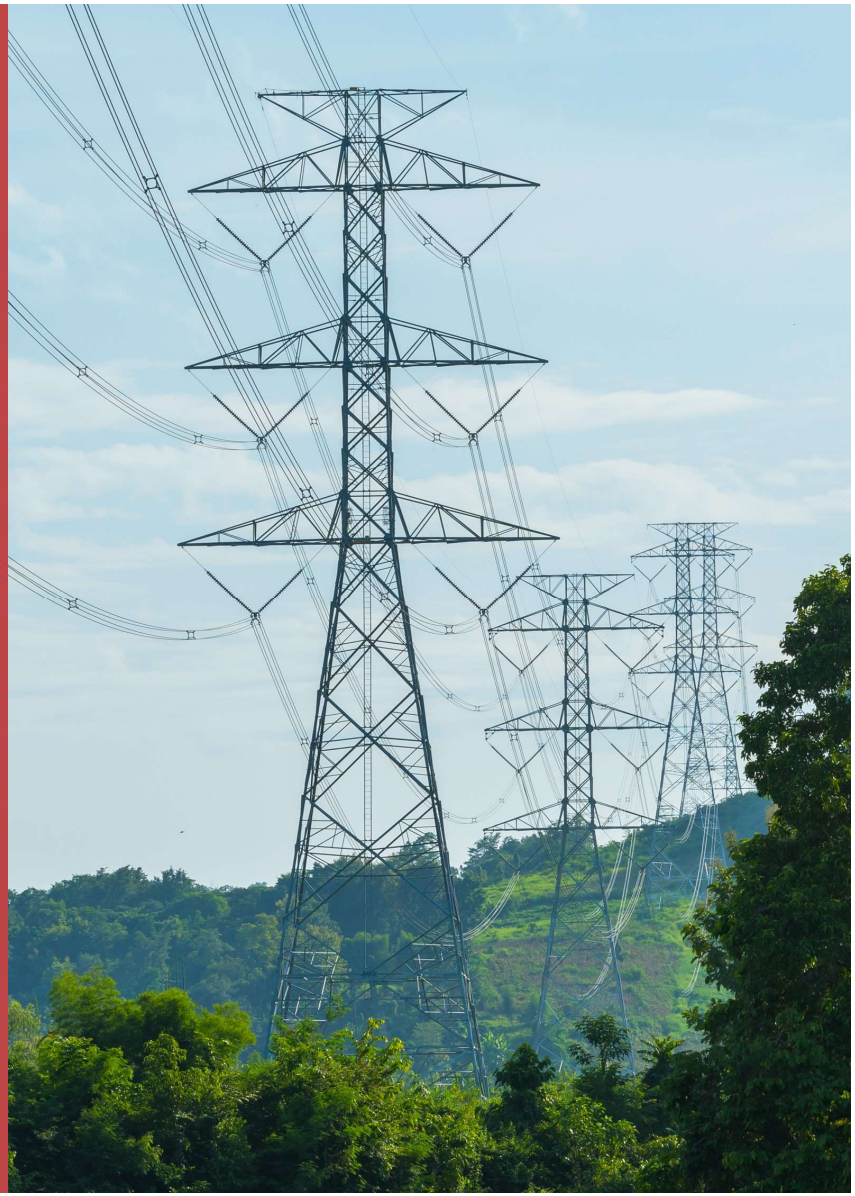


REPORTING PROCESS

- Draft Report – Align RFI
- Comments in SEL & Respond to RFI
- Final Report and Exit Presentation – Align RFI
- Any PNCs will be visible in Enforcement Module

SUPPORT & FEEDBACK

- Point of Contact – ATL
- Secondary – Audit Team Manager
- NERC Ticketing System



FORWARD TOGETHER RELIABILITYFIRST

QUESTIONS &

ANSWERS

Jim Kubrak – Jim.Kubrak@rfirst.org

Zack Brinkman – Zack.Brinkman@rfirst.org

LIMITED DISCLOSURE

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Enforcement Trends

Max Reisinger, Senior Counsel

September 27, 2023, Pittsburgh, PA

RELIABILITY FIRST

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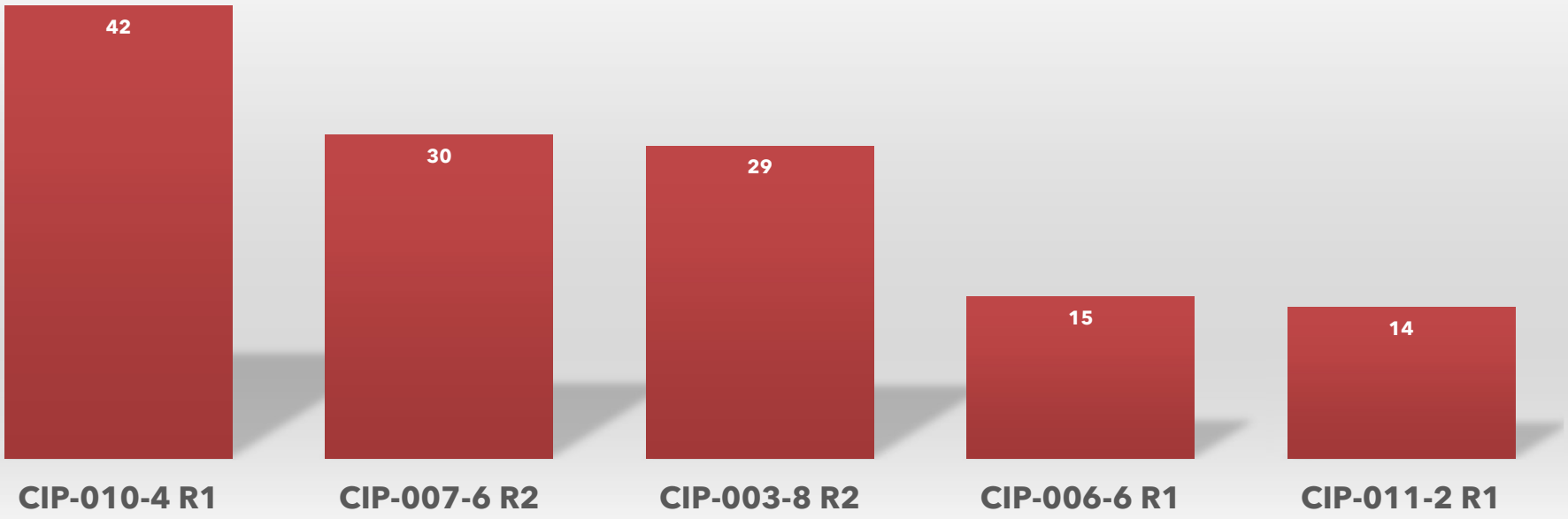
Roadmap

- Background
- Most Violated Standards
  - CIP
  - Operations and Planning (OPS)
  - Higher Risk
- Enforcement Trends
- Resources

Most Violated CIP Standards and Requirements

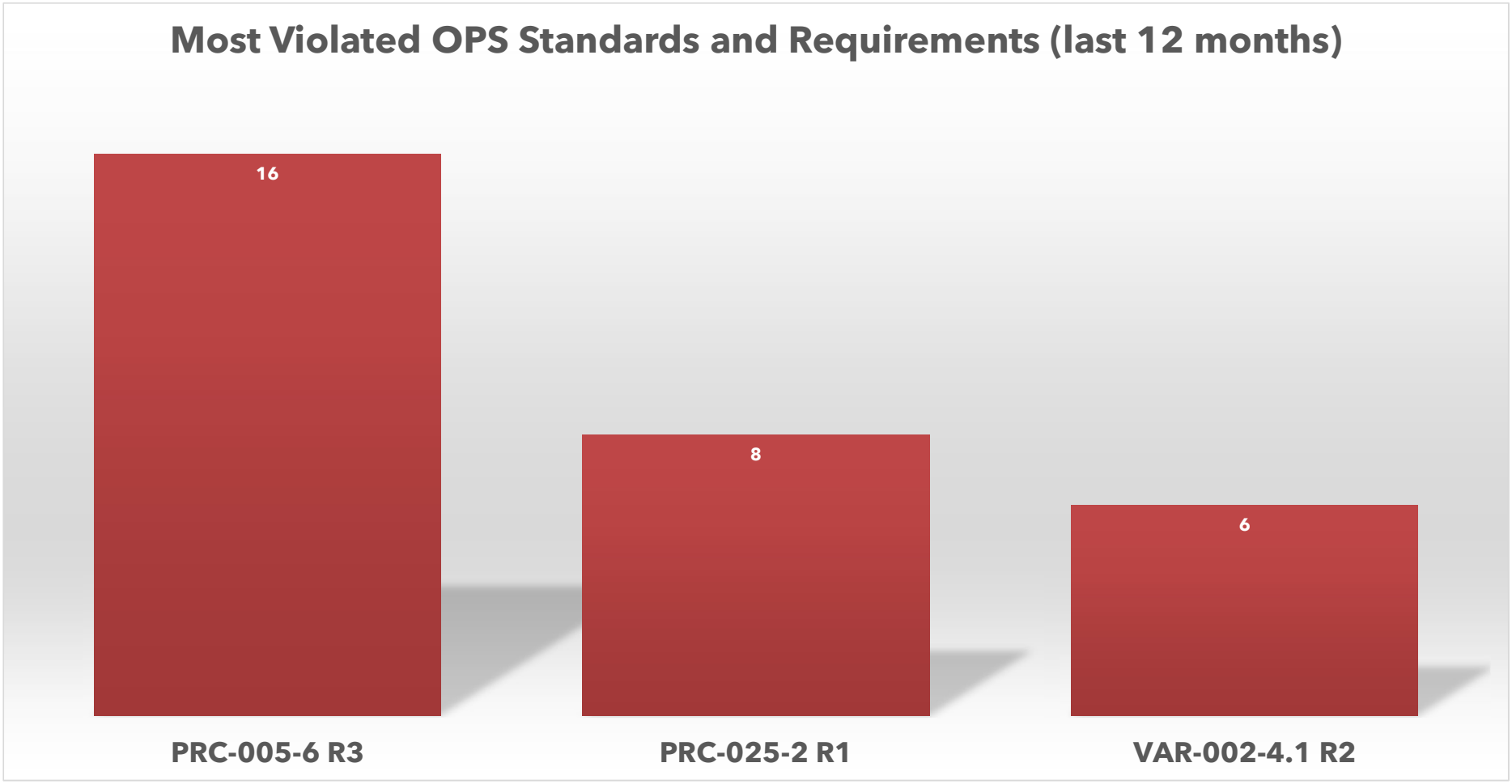
- CIP-010-4 R1 (creating, maintaining, and updating baselines)
- CIP-007-6 R2 (patch management)
- CIP-003-8 R2 (implementing cyber security plan for low impact assets)
- CIP-006-6 R1 (managing and restricting physical access)
- CIP-011-2 R1 (protecting BES Cyber System Information (BCSI))

Most Violated CIP Standards and Requirements in 2023



Most Violated OPS Standards and Requirements

- PRC-005-6 R3 (maintaining and testing protection system devices)
- PRC-025-2 R1 (load-responsive protective relay settings)
- VAR-002-4.1 R2 (maintaining compliance with voltage schedule)


Most Violated OPS Standards and Requirements (last 12 months)
16
8
6
PRC-005-6 R3
PRC-025-2 R1
VAR-002-4.1 R2

Most Violated Highest Risk Requirements

- CIP-004-6 R4 (electronic and physical access management)
- CIP-005-5 R1 (controlling access to cyber assets)
- CIP-004-6 R5 (access revocation)
- PRC-005-6 R3 (maintaining and testing protection system devices)
- FAC-009-1 R1 (predecessor to FAC-008-3 R6) (establish facility ratings)


Top 5 Highest Risk Requirements (Based on 2023 Filings)
12
6
6
5
3
CIP-004-6 R4
CIP-005-5 R1
CIP-004-6 R5
PRC-005-6 R3
FAC-009-1 R1

Enforcement Trends

PRC-005-6 R3

- Failing to timely maintain and/or test protection system devices

Causes

- Contractor related failures
  - Lack of communication between entity and contractors
  - Failure to provide proper oversight
- Asset and configuration management issues
  - Testing protection system devices on the wrong schedule
- Confusion around responsibility for maintenance and testing of protection system devices at shared facilities

Enforcement Trends

VAR-002-4.1 R2

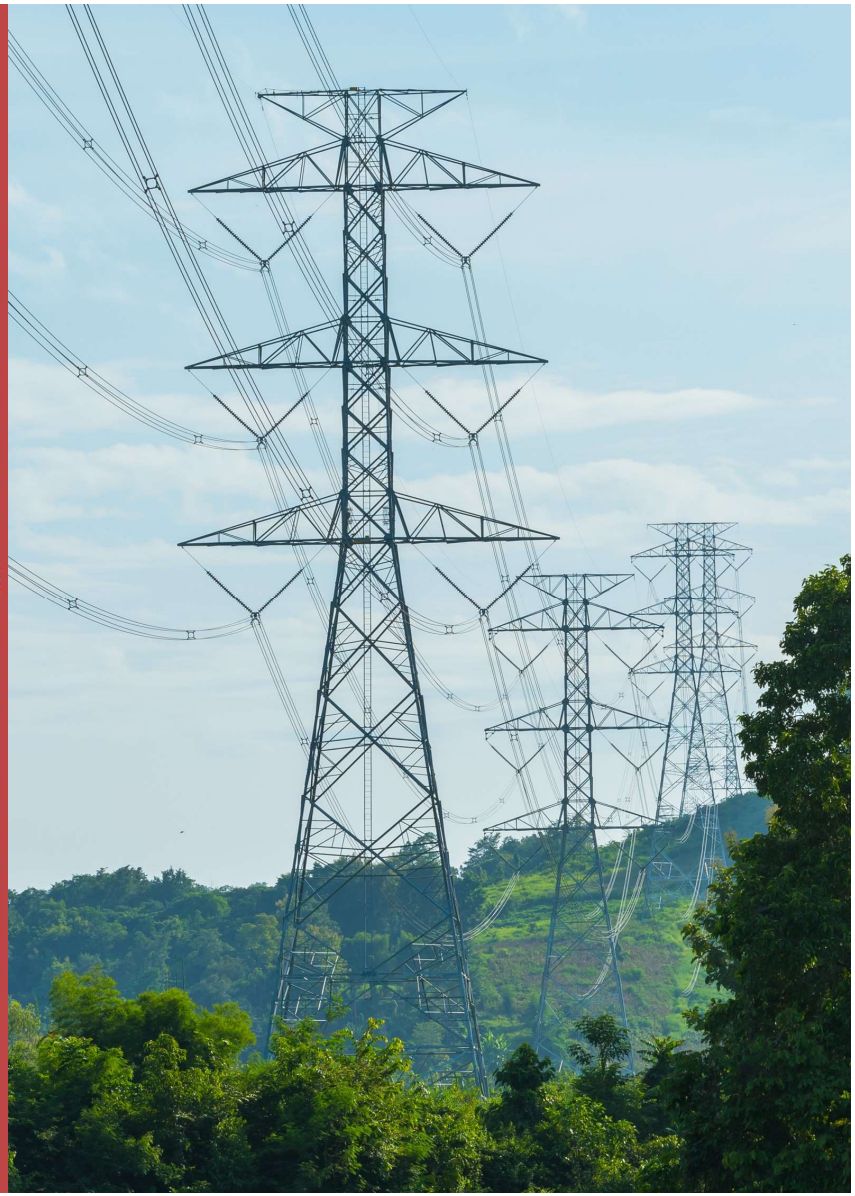
- Generator Owners/Generator Operators
  - failing to timely notify the Transmission Operator (TOP) of voltage schedule deviations
  - failing to enable Power System Stabilizer (PSS) after an outage
  - failing to comply with voltage schedule during startup

Causes

- Inadequate training around voltage schedule requirements during startup
- Alarm failures
- Ineffective alarms (overload of alarms, poor location of alarms)
- Losing documentation during ownership transitions

Resources

- Self-Report and Mitigation Plan User Guide
  - https://www.nerc.com/pa/comp/CE/Enforcement%20Actions%20DL/Registered%20Entity%20Self-Report%20and%20Mitigation%20Plan.pdf
- NERC Glossary
  - https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf
- Recently Filed OPS Dispositions
  - https://www.nerc.com/pa/comp/CE/Pages/Enforcement-and-Mitigation.aspx
- RF Newsletters (Enforcement Explained)
  - https://rfirst.org/about/Newsroom
- Case Manager
  - Reach out with questions



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QUESTIONS & ANSWERS

Max Reisinger

Maxwell.Reisinger@rfirst.org

216-503-0664

THANK YOU!

RELIABILITY FIRST

ReliabilityFirst Corporation
3 Summit Park, Suite 600
Cleveland, OH 44131
Website: rfirst.org
Phone: 1-216-503-0600