



# Spring 2023 Compliance and Reliability Webinar

Scott Nied

Vice President – Compliance

May 18, 2023



# Welcome

- Agenda
  - See news item on NPCC home page
  - Also appears under “Compliance” tab, then “Webinars”
- Speaker biographies appear in the MS Teams registration
- Disclaimer
- Safety Message



# Disclaimer

*The information provided today at this workshop is intended to provide accurate and helpful guidance and education to industry and interested stakeholders. The information provided in this workshop is nonbinding and should not be relied upon for compliance or for other matters. The governing documents for compliance and other matters include the applicable NERC Reliability Standard, NERC Rules of Procedure, various regulatory agency orders, approved Implementation guidance and other laws, rules, and regulations. Compliance with Reliability Standards ultimately depends on the facts and circumstances, quality of evidence, and the language of the Reliability Standard.*



# Safety Message

Tracy Kinsella-DeWees  
Senior Entity Risk Assessment Analyst





# Tips for Motorists

5,579 motorcycle fatalities in 2020. 2,702 motorcycle fatalities in 1991.

- Motorcyclists stop quickly and don't always use their brakes so keep your distance.
- It's hard to judge the distance of a motorcycle so wait until it passes.
- Motorcyclists blend in so keep an eye out for them.
- Your car has almost 40% blind spots so stay alert and adjust your mirrors.
- Drive alcohol and drug-free.
- Drive defensively.
- Obey the speed limit.



# Tips for Motorcyclists

5,579 motorcycle fatalities in 2020. 2,702 motorcycle fatalities in 1991.

- Observe all traffic laws and obey the speed limit.
- Never ride impaired or distracted.
- Always complete rider education courses and have a current license.
- Drive and ride defensively.
- Use a DOT-compliance motorcycle helmet.



# BP&B Season: NERC and NPCC

## 2022 NERC Annual Report – Focus on Risk Based Compliance

- [NERC Publishes 2022 Annual Report](#)

## NERC, NPCC, and Regional Business Plans

- [2024 NERC Business Plan and Budget by May 25](#)
  - 6/1 NERC webinar for stakeholders
- [2024 NPCC Draft 2024 BP&B at NPCC.org](#)

## NPCC Strategic Plan and Goals

- [NPCC Governance & Corporate at NPCC.org](#)

These all affect the Registered Entity!



# Inverter Based Resources

- [3/28/23 NERC Posts Recap of Technical Session's Inverter-Based Resource Panel](#)
- [2/6/23 NERC comments on FERC 11/17/22 NOPR on IBR Standards](#)
  - [11/17/22 FERC NOPR](#)
  - Project 2020-02 Modifications to PRC-024 (Generator RideThrough)
  - Project 2020-06 Verification of Models and Data for Generators
  - Project 2021-01 Modifications to MOD-025 and PRC-019
  - Project 2021-04 Modifications to PRC-002-2
  - Project 2022-04 EMT (Electromagnetic Transient) Modeling
  - Project 2021-02 Modification to VAR-002
  - Project 2023-01 EOP-004 IBR Event Reporting
  - Project 2023-02 Performance of IBR
- [2/15/23 NERC Filed IBR Registration Work Plan to FERC](#)
  - [11/17/22 FERC Order](#)
  - More on IBR Generator Owner registration plan later in the agenda
- Coming Soon: [NERC IBR Webinar 10-part series in June/July](#)





# NERC CIP-014 Actions

## 12/15/22 FERC orders NERC to develop CIP-014 report addressing

- The adequacy of the Applicability criteria
- The obligations under the R1 risk assessment. Is it sufficient to cover the intent of the standard?
- Whether a minimum level of physical security protections should be required for all Bulk-Power System transmission stations and substations and primary control centers

## 4/14/23 NERC reported to FERC

- Applicability section does not need to be expanded
- Standards project needs to be undertaken to enhance R1 technical rigor obligations
- Recommended that a risk-based approach needs to remain to determine what level of investment would be appropriate based on local risk factors, regional system configuration, and the asset's mean time to recover.
- NERC will coordinate a stakeholder technical conference with FERC to discuss additional aspects that could be added to standards or guidelines.

More thoughts on the current CIP-014 later in the agenda



# Status of NERC Cold Weather Standards Revisions

- Project 2021-07 Extreme Cold Weather
- 2/16/23: FERC approved EOP-011-3 and EOP-012-1
- But, by 2/15/24, also directed NERC to modify EOP-012-1 to address:
  1. Applicability: to ensure proper BES gen resources are captured
  2. Include auditable criteria on allowed constraints that would preclude GO from implementing appropriate freeze protection
  3. Adjust R1 to not exclude generators that cannot run 12 hours (e.g., solar in winter period)
  4. Include deadlines for completion of Corrective Action Plan measures
  5. Shorten proposed 5-year implementation and add staggered completion % across owner's fleet (e.g., 30%, 60%, 100%).
  6. And to submit a plan to report on entity implementation of EOP-012-1
    - 5/15/23 – NERC Level 3 Alert – 20 questions and 8 “Essential Actions” - For BES generation
    - Acknowledge by 5/22/23; responses due 10/6/23
    - Must answer the 20 questions; but, implementing the EAs is not mandatory.
    - GOs must also send back a completed worksheet



# Level 3 Alert - Essential Actions (not mandatory)

1. Each GO should calculate the Extreme Cold Weather Temperature (ECWT) for each plant location prior to the next winter season.
  - Related to forthcoming EOP-012-1 R1 through R3 preparation
2. Each GO should identify, in the cold weather preparedness plan, the Generator Cold Weather Critical Components and freeze protection measures implemented on those components prior to the next winter season.
  - Related to forthcoming EOP-012-1 R1 through R3 preparation
3. Each GO should identify which units are capable of operating at the ECWT as currently built, and which units require additional freeze protection measures to operate at that temperature.
  - Related to forthcoming EOP-012-1 R1 through R3 preparation
4. Each GO should identify which units experienced a Generator Cold Weather Reliability Event in the 2022–2023 winter season.
5. Each TOP should update their operating plan(s) prior to the next winter season, to include provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for under frequency load shed (UFLS) or under voltage load shed (UVLS).
  - Related to currently effective EOP-011-2 R1 and forthcoming EOP-011-3 R1 preparation
6. Each BA should update their operating plan(s) prior to the 2023–2024 winter season, to include provisions for TOPs to implement operator controlled manual load shed; and manage generating resources in its BA Area.
  - Related to currently effective EOP-011-2 R1 and forthcoming EOP-011-3 R2 preparation
7. Each GO should provide its RC, BA, and TOP the ECWT for its location prior to the next winter season and whether Generator Cold Weather Critical Component freeze protection measures will not be implemented on components prior to the next winter season.
8. Each GO should share their responses with their respective BAs and TOPs to allow for updates to any operating plans before the next winter seasons.



# Facility Ratings FAC-008

- 1:00 - 4:30 PM, May 24 NERC webinar
- [ERO Enterprise Industry Webinar | Facility Rating Management Webinar – Webex](#)
- NPCC on panel discussion
- More on FAC-008 themes later in the agenda



# NPCC Reliability Services

- 5/3/23 NPCC Assessment for Summer Operating Period Posted
  - [2023 NPCC Summer Assessment Overview](#)
  - ERO Summer Assessment coming week of 5/15
- NPCC DER/VER Forums
  - 4/27 – Transmission: Shortfalls, Needs, Solutions [Slides posted here](#)
  - 5/25 – IEEE 2800 – Interconnection/Interoperability of IBR and Trans Systems [NPCC DER/VER Forum May 25, 2023 - Webex Link](#)
  - August/October - TBD



# Cyber Related: NERC CITF Whitepaper

- 5/8/23 ERO Enterprise Publishes Cyber-Informed Transmission Planning (CITP) White Paper
  - A framework providing a roadmap for integrating cyber security aspects into transmission planning activities
- CITP is a tenant of NERC\_Security\_Integration\_Strategy\_2022
  - Ensuring security of the BPS through Cyber and Physical Security Integration into Planning, Design, and Operational Engineering Practices
- Some key takeaways for TP and PC entities



Coming soon

# Hybrid Compliance and Reliability Conference

- November 8 and 9, 2023
  - White Plains, NY
  - Sonesta White Plains

Watch for the announcement on the website!

# Align Usage and Piloting Status

**Kimberly Griffith**

*Senior Compliance Engineer*

**Jacqueline Jimenez**

*Director, Compliance*

**Ben Eng**

*Manager, Entity Risk Assessment*







# Where We Are

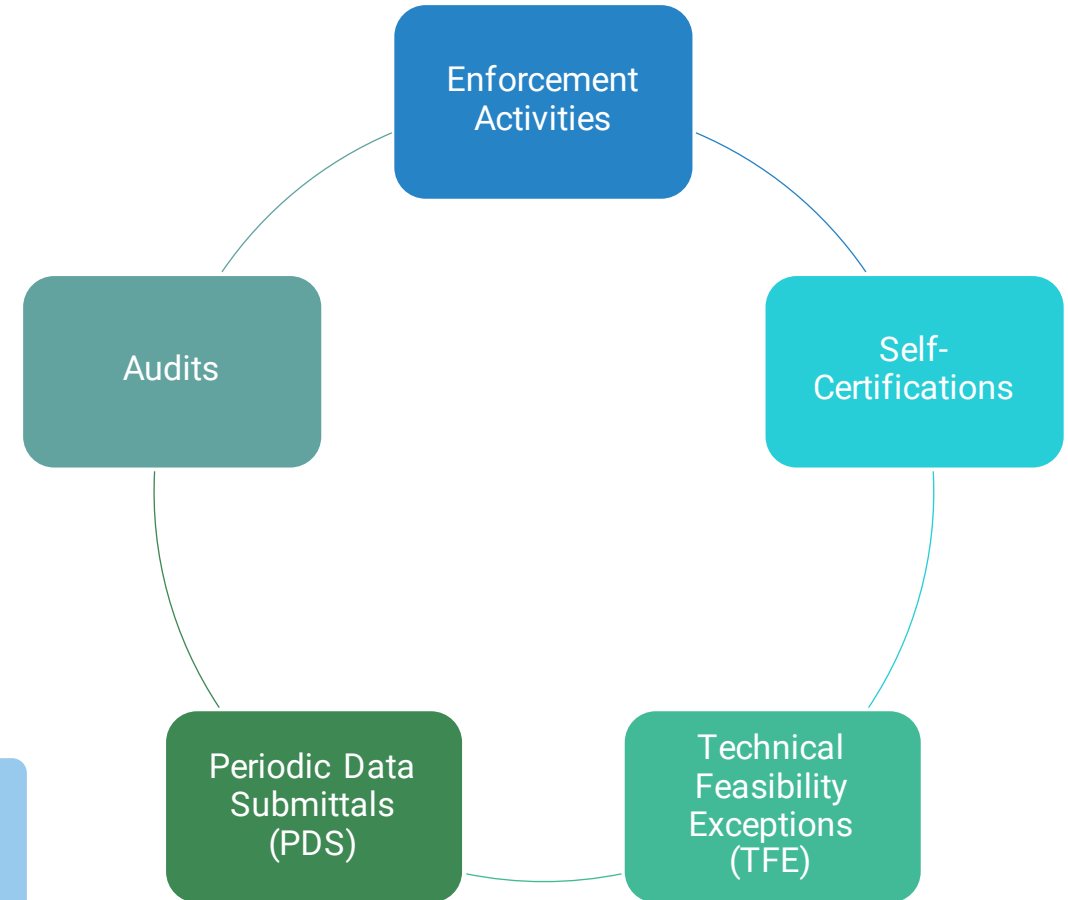
Initial functionality releases (R1-R4.5)

System Improvements

Process Improvements

Align User Group

Helpdesk Ticket Support





# Audit Pilots



**2022**

One audit pilot



**2023**

One hybrid on-site audit pilot  
Two off-site audit pilots



**Update**

Moving forward all U.S. audit engagements will be performed in Align and the SEL



# Process Improvements

## Hybrid On-Site Audit



Audit Notifications will be sent  
165 days before the audit week



Entities will still have 90 days to  
prepare their RSAW and  
evidence submittals



75 days from RSAW and  
evidence submittal date to start  
of audit week

## Off-site Audit



Adding 30 days to the expected  
audit completion date



# SEL Process Improvement

	A	B	C	D	E	F	G	H	I
1	Entity Name:		ExampleEntity			Registered Functions: Audited Functions: Audit Period:	BA, RC, GO, GOP, TO, TOP, PA, RC		
2	NCR #:		NCR99999				GO, GOP		
3	Audit Dates:		05/16/2023-05/18/2023				01/01/2020 - 01/01/2023		
4	Align Engagement #		ME123-456789						
5						Operations & Planning			
6	Level (round) #	RFI Number	Reliability Standard	Requirement Number	Internal Control Question	Auditor Question or Data Request	Entity Response	Document Reference	SEL Locker Reference ID
7	1	OP1	COM-002-4	R3		Example Question 1			NPCC NCR99999 ME123-456789 ME123-456789,OP1,L1 COM-002 R3
8	1	OP2	FAC-008-5	R1	X	Example Question 2			NPCC NCR99999 ME123-456789 ME123-456789,OP2,L1 FAC-008 R1



# IRA and COP Pilots

- COP (Compliance Oversight Plan)
  - *is a plan consisting of the entity specific inherent and operational risks (Risk Factors & Risk Categories) and oversight strategy for a registered entity.*
  - *The COP includes Sections describing 1. Purpose, 2. Analysis and Results, 3. Oversight Strategy, Monitoring Interval and CMEP Monitoring Tools, 4. Inherent Risk Assessment (IRA) Summary [Appendix A] and 5. NERC Standards and Requirements for Monitoring [Appendix B]*
- IRA (Inherent Risk Assessment)
  - *is an evaluation of entity specific ERO Risk Factors and Risk Profile questions to determine the inherent risks of the registered entity.*
  - *is one input to the COP*



# IRA Pilots

- Identified a few entities to begin the Align v4.5 pilots.
- IRA Pilot - mimics the entity questions posted on the NPCC public ERA Website and applies Align v4.5 to generate results
  - Align v4.5 has the standard ERO Risk Factor questions and a pool of NPCC ERPQ (Entity Risk Profile Questions) to choose from.
  - Align v4.5 will be used to apply the Risk Factor Analysis, ERPQ analysis and other known data about the entity to determine the other deliverables in NPCC's Risk Assessment processes (proposed Audit Scope, components of COP).
  - NPCC ERA staff are working closely with NERC on the above.
  - Any gaps or issues in implementation will be captured and addressed with NERC's Align Team.
  - NPCC will apply legacy processes in parallel with the Align tool.



# COP Pilots

- COP Pilot - mimics the ERO COP template and applies Align v4.5 to generate the COP report.
  - Align v4.5 will create the entity specific COP based on the ERO COP template
  - The results of the IRA, other risk analyses, and Performance Considerations will be used to create the entity COP in Align.
  - Performance Considerations include entity Compliance History, activity in TADS, GADS, MIDAS, TEAMS (as applicable), Compliance Culture and Internal Controls to mitigate Risk Categories being monitored.
  - NPCC ERA staff are working closely with NERC on the above.
  - Any gaps or issues in implementation will be captured and addressed with NERC's Align Team.
  - NPCC will apply legacy processes in parallel with the Align tool.



## Conclusion

# Align Improvements

Work In Progress

ERO Helpdesk: <https://support.nerc.net>

All Compliance Engagements will use Align going forward

[Align Training Videos](#)





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# Questions

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# Facility Ratings

## Themes and Best Practices

**Patrick Palompo, PE**  
*Senior Compliance Engineer*



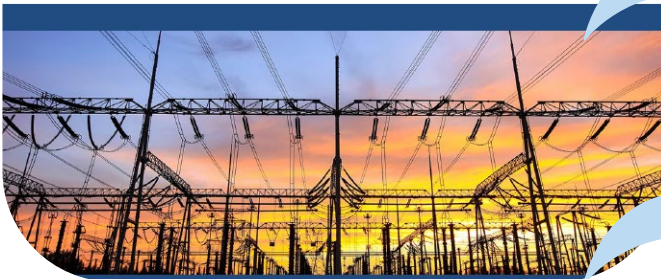


# Themes



**ERO Enterprise Themes  
and Best Practices for  
Sustaining Accurate  
Facility Ratings**

October 20, 2022



**Theme 1: Lack of Awareness**

**Theme 2: Inadequate Asset and Data  
Management**

**Theme 3: Inadequate Change Management**

**Theme 4: Inconsistent Development and  
Application of Facility Ratings Methodologies**



# Facility Ratings Theme 1

ERO Enterprise Themes and Best Practices

• Theme 1: Lack of Awareness

Failure to adequately document or maintain an accurate equipment inventory

Failure to understand the current carrying series equipment within its electrical system

An ineffective facility ratings validation program, including but not limited to identifying and assessing potential program deficiencies, inadequate methodology, and/or inadequate processes/procedures





# Facility Ratings Theme 1

## ERO Enterprise Themes and Best Practices

### • Theme 1: Lack of Awareness

#### Observations

- Lack of awareness tends to concern the failure to verify and validate that Facility Ratings accurately reflect the equipment actually installed in the field upon commissioning and/or consider any subsequent equipment changes in the field because of the addition, removal, or replacement of equipment over time or due to an event (e.g., hurricane).

#### Suggestions

- Establish an accurate baseline with an in-field verification
- Perform periodic in-field verifications post maintenance and/or maintenance activities





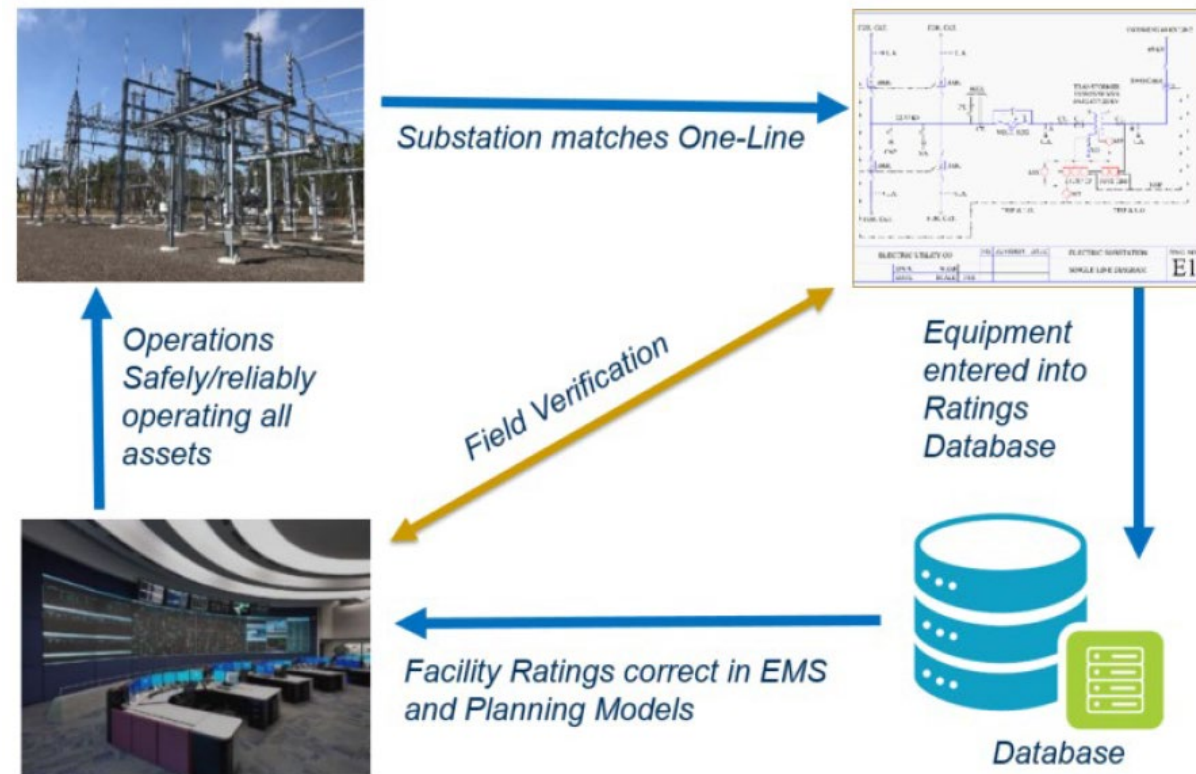
# Facility Ratings Theme 2

## ERO Enterprise Themes and Best Practices

### • Theme 2: Inadequate Asset and Data Management

Asset management (as it relates to facility ratings) is the identification, management, and tracking of physical facility ratings assets. Data management (as it relates to facility ratings) is the collection, validation, and storage of all data associated with facility ratings.

Effective and efficient asset and data management plays an integral role in the success of an entity's facility ratings program and reduces the risk of inaccurate facility ratings.





# Facility Ratings Theme 2

## ERO Enterprise Themes and Best Practices

### • Theme 2: Inadequate Asset and Data Management

#### Observations

- Common data management failures involve programs that do not identify and account for all necessary pieces of equipment or the equipment's ownership in the field when determining a Facility Rating.
- Programs frequently miss accounting for equipment such as wave traps, jumpers, connectors, and bus work.

#### Suggestions

- Identify each individual piece of equipment even those that typically do not impact Facility Ratings
- List each piece of equipment individually; do not consolidate equipment
- Recognize differences in equipment ratings that allow for emergency Facility Ratings



# Facility Ratings Theme 3

ERO Enterprise Themes and Best Practices

• Theme 3: Inadequate Change Management

Change management processes and controls enable facility and equipment rating changes to be captured, coordinated, and implemented throughout the entity in a timely manner.

Without a strong and sustainable change management process, there is a significant risk that inaccuracies in facility ratings will occur.



Photo Credit: BC Hydro, EEP





# Facility Ratings Theme 3

## ERO Enterprise Themes and Best Practices

### • Theme 3: Inadequate Change Management

#### Observations

- Common Change Management Failures:
  - Lack of, or delay in, communicating changes to all necessary personnel
  - Lack of data entry verification
  - Lack of oversight over contractors performing facility ratings work

#### Suggestions

- Change Management Controls:
  - Change checklist
  - Quality assurance reviews after any change
  - Validation through periodic reviews
  - Data entry verification
  - Periodic in-field verifications



# Facility Ratings Theme 4

ERO Enterprise Themes and Best Practices

• Theme 4: Inconsistent Development and Application of Facility Ratings Methodologies

Each applicable registered entity is required to have a documented methodology for determining facility ratings of its solely and jointly owned facilities.





# Facility Ratings Theme 4

## ERO Enterprise Themes and Best Practices

### • Theme 4: Inconsistent Development and Application of Facility Ratings Methodologies

#### Observations

- Common Failures:
  - Identifying the most limiting element
  - Entities may have multiple methodology criteria for rating different transmission and generating facilities. This can create confusion on which criteria to apply or make it difficult to apply the criteria consistently

#### Suggestions

- Develop and maintain a detailed and comprehensive facility ratings methodology
- Provide the specific rating method for each class and type of element comprising a BES facility
- Train appropriate personnel on how to apply the methodology



# Facility Ratings Best Practices

## ERO Enterprise Themes and Best Practices

### • Best Practices



Robust documented change management process

Inventory management tools, with required training

Checklists for new inventory to be added

Effective data capture processes

Single database for master record keeping

Access controls established for facility management tools

Built in quality assurance reviews, in concert with internal controls

Periodic in-field validation/field walk-downs

Facility ratings program owner

Management oversight



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# Questions

Patrick Palompo

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# 2022 CIP-008-6 NERC Annual Report

**Catherine Nakor-Tetteh**  
*CIP Compliance Auditor*

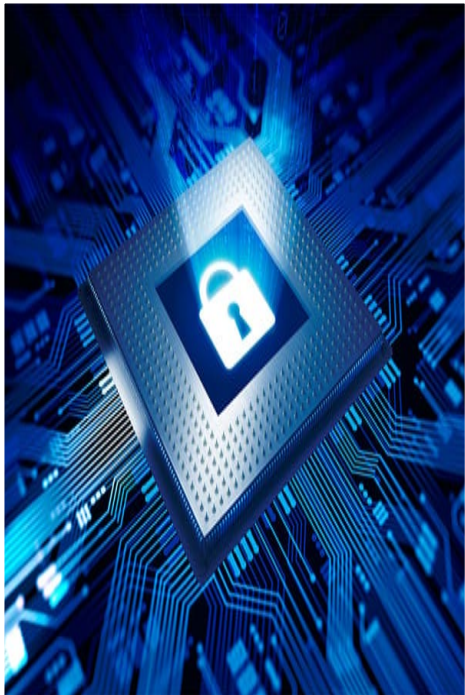
**Cecil Elie**  
*Senior CIP Analyst*







# 2022 Annual Report on Cyber Security Incidents



This report covers the Cyber Security Incidents received by the Electricity Information Sharing and Analysis Center (“E-ISAC”) between January 1 to December 31, 2022, pursuant to Reliability Standard CIP-008-6 Cyber Security Incident Reporting and Response Planning.



# Sections of the Report

FERC approval of CIP-008-6

E-ISAC Report Collection

Summary of the Reports Received

Next Steps

Conclusion to the Filing





# Summary of the Report

RESPONSIBLE  
ENTITIES  
SUBMITTED EIGHT  
CIP-008-6 REPORTS  
TO THE E-ISAC

ATTACK VECTOR

FUNCTIONAL  
IMPACT AND LEVEL  
OF INTRUSION



# Next Steps



**Project 2022-05  
– Modifications  
to CIP-008  
Reporting  
Threshold**



# Conclusions



The report was concluded with NERC requesting the Commission accept this informational filing as consistent with the directives from Order No. 848.



# Resources

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[FERC eLibrary](#)

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FERC Docket No. RM18-2-000

Annual Report Of The American Electric Reliability Corporation On Cyber Security Incidents



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# Questions

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Catherine Nakor-Tetteh

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# NPCC Cold Weather and Winterization Outreach Update

**Matt Forrest, Brian Robinson**

*Senior Entity Risk Analyst*

*May 18, 2023*

*NPCC Compliance Committee*





- For 2023, NPCC is continuing the cold weather outreach.
- In addition to the outreach, NPCC has participated in the Cold Weather SGAS.
- We are planning to perform onsite walk-downs with 12 volunteering entities by 12/23.
  - 5 by 9/23, 4 additional by 11/23, 3 additional by 12/23.
- The walkdowns will allow NPCC to assess and assist each entity in ensuring they have a robust plan and training to ensure plant and system reliability.
- Operating experience and good practices from the 2022 outreach are being shared along with responses from the SGAS FAQ.





## 2023 Progress

- We have visited 5 sites so far in 2023.
  - We are expanding our outreach to include more variation in generation type.
  - Thus far in 2023 we have visited 1 Blackstart Gas Turbine site, Two wind facilities, one large coal facility with Blackstart GTs, and the Messina Hydro plant.
  - We are planning to visit at least two sites/units each month over the Summer and into Fall.





# 2023 Updates and Changes

- FERC Order Issued February 16, 2023 - Approved Extreme Cold Weather Reliability Standards EOP-011-3 AND EOP-012-1 and Directing Modification of Reliability Standard EOP-012-1
- Ongoing review of the December 2022 Cold Weather Event
- NERC Alerts
  - Industry Advisory - Cold Weather Standards: Initial Distribution: February 13, 2023 (Cold Weather Standards – Primary focus of this presentation)
  - NERC issued a Level 3 NERC Alert regarding “Essential Actions” pertaining to cold weather operations on 5/15/2023. (Basis of the proposed Level 3 Alert will be the requirements outlined in enhanced versions of EOP-011-3 and EOP-012-1)
- As a result of the above, we anticipate that entities will likely have a number of questions related to the “Essential Actions” as well as the additional detail in the new requirements.



- The NPCC outreach plan should not change much as a result of the new standards and the Level 3 NERC alert.



## Observations and Questions

- We have noted on every site visit that the entities in the Northeast have cold weather preparation and operator awareness across the board.
- What many do not have is a consolidation of all of their cold weather actions, work orders, equipment modifications, procedures etc.
- Each visit has raised awareness to the number of items that each entity considers routine but do not have a one-stop-shop to cover. We have suggested that they reference current processes and work orders within their cold weather plans and update them regularly as they become aware of tasks that exist but have not yet been captured in their cold weather plan.



# Winter Preparedness Standards Good Practices

- NPCC recommends that entities review the [ERO CMEP Practice Guide on Cold Weather](#) to prepare for the effective date. The Practice Guide provides stakeholders with an overview of what ERO CMEP Staff will be looking to acquire an understanding of during assessments of compliance and assessments of processes and controls. NPCC also recommends that GO/GOPs be mindful of the [Implementation Plan Project 2019-06 Cold Weather](#) which is posted on the NERC website which states:
  - *Initial Performance of Periodic Requirements*
  - *Responsible Entities shall develop, maintain, and implement the Operating Plan(s) required by Reliability Standard EOP-011-2 by the effective date of the Reliability Standard.*
  - *For the cold weather preparedness plan(s) for generating unit(s) required under Requirement R7, the Responsible Entity shall perform annual inspection and maintenance of generating unit freeze protection measures under Requirement R7 Part 7.2 and conduct generating unit specific training for its maintenance and operations personnel under Requirement R8 by the effective date of the Reliability Standard.*
- In particular, the Implementation Plan requires:
  - For R7: The GO to be able to provide documentation to show that a preparedness plan was developed prior to 4/1/23.
  - For R7.2: The GO to be able to provide documentation to show that annual inspection and maintenance of generating unit(s) freeze protection measures took place prior to 4/1/23.
  - For R8: The GO/GOP to be able to provide documentation to show that training for maintenance and operations personnel was completed prior to 4/1/23.
  - Entities should be aware of the upcoming standards changes and ask for clarification and



# Suggested Best Practices

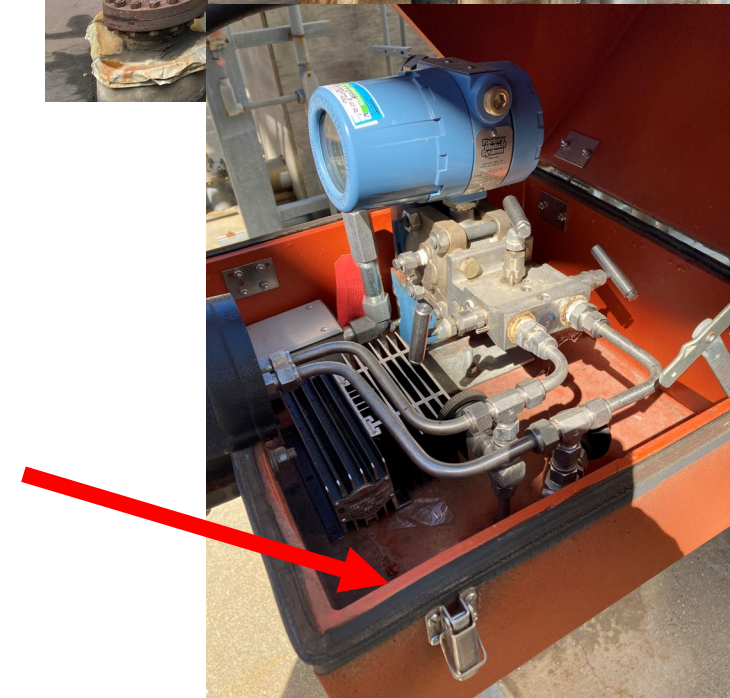
- Know the basis for generator operating limitations day to day
- Take advantage of affiliates and industry forums.
  - North American Generator Forum
  - North American Transmission Forum
- Protective measures and efforts should be prioritized based on equipment that has the potential to:
  - Cause unit trip or partial outages.
  - Impact unit start-up or plant monitoring and automation
  - Cause equipment or plant damage
  - Adversely impact the environment.
  - Cause fuel disruption
  - Reduce plant safety





# Suggested Best Practices

- Split up winter preparation and planning rather than trying to accomplish it just prior to winter.
  - Review prior winter
    - Effectiveness of cold weather strategy
    - Trouble areas
    - Complete corrective actions and document
  - Prioritize work orders
    - Consider a cold weather code
    - Ensure work is scheduled to complete prior to a specific date.
  - Keep a winterization items list year-round.
  - Keep things as simple as possible.
  - Enhancements do not have to break the bank
  - Ensure personnel are trained.







# WINTER PREPARATION GOOD PRACTICES

- Developing a plan - Prioritize your review and preparation.
- Building doors, Building Louvers, Building Heat, GT intake, and boiler stack area
- External Piping, insulation, traps, and heat trace.
- Vital instrumentation
- Fuel Supply
- Plant cooling basins, tank heat
- Main plant condensate, feed, and boiler system, aux boiler
- Emergency Generator and fuel supply, key loads.
- Station service power
- Other systems – instrument air, fire protection, water treatment
- Lessons learned from prior winter events. Corrective Action Plans, Mitigation results, Extent of condition.



# Resources

[2019-06 SDT Responses](#) (one example)

[2019-06 Project Page](#)

[ERO Enterprise CMEP Practice Guide Cold Weather Preparedness](#)

[Major Events Reports](#)

[Lessons Learned](#)

[Reliability and Security Guidelines](#)

[Generating Unit Winter Weather Readiness](#)



# Thank you

- Please reach out at any time if there are any questions or items that you need clarified.
- [mforrest@npcc.org](mailto:mforrest@npcc.org)
- [brobinson@npcc.org](mailto:brobinson@npcc.org)

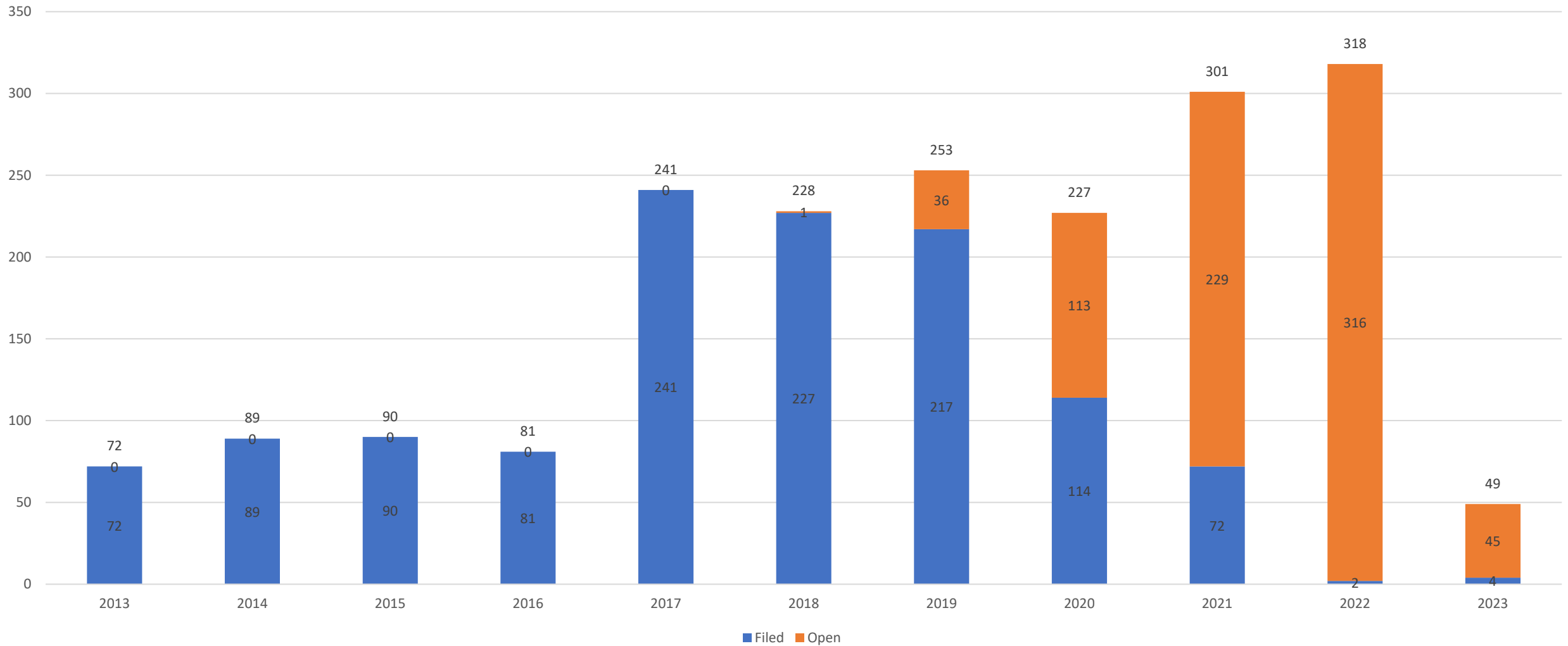


# Enforcement Approach and Compliance History

Presented by  
Jason Wang – Manager of Enforcement  
Deketa Wall – CIP Risk and Mitigation Analyst



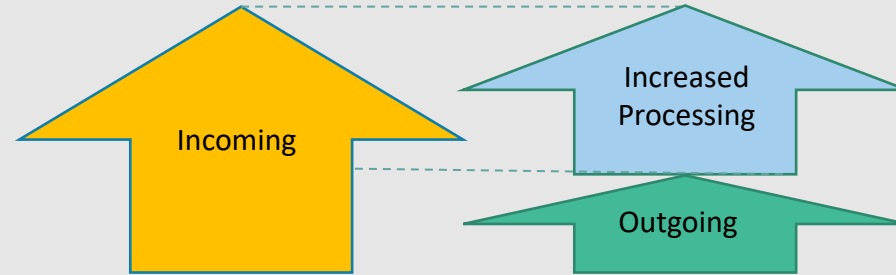
## Noncompliance Vintage - Filed/Open





## The “What”

- What was happening/What’s the need?



- What is an Enforcement Approach?  
Standard specific risk characteristics to help guide the enforcement team in reaching a conclusion
- What is the Goal?  
Provide clear language to help identify reliability violations and standard-specific criteria to evaluate risk



## How Do We Do It?

**NERC**  
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Home > Program Areas & Departments > Compliance & Enforcement > > Enforcement and Mitigation

Enforcement and Mitigation

Sample Table A

Population Description

Statistical Sampling

Example: MOD-025-2 R1 – Identifying Criteria from the Sample

Primary Population  
(Examples: Substations, Generators, etc.)

1-8  
9 +

Dependent Population  
(Examples: Substations, Generators, etc.)

1-9  
10-19  
20-40  
41-100  
101-1000  
1001 +

The entity synchronized the Facility on March 29, 2017 and the net active power output identified during commissioning testing was approximately 106 MWs, which is the same value provided by the June 6, 2018 power test.

The Entity owns and operates a single steam turbine generator with nameplate capabilities of 112.5 MW and 132.4 MVA, which interconnect with the host Transmission Owner's BES substation via two 65 MVA generator step-up transformers. In addition, the generator operated at capacity factors of 23.23% in 2017 and 20.82% in 2018.

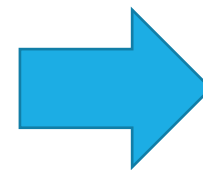
The rated capability of the generator is 5.7% of the Entity's Balancing Authority (NYISO) required Operating Reserve (1965 MW). Therefore, the capacity of this unit can be replaced by the NYISO in the event of an unnecessary trip or loss of generating capability due to inaccurate information.

Previous submittal still reliable

Inherent Properties

Balancing Authority Operating Reserve

General Factors #4...5...6...Etc...



NORTHEAST POWER COORDINATING COUNCIL, INC.  
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### MOD-025-2 Enforcement Approach

#### Background Information

- [MOD-025-2 Standard Language](#)
- [MOD-025-2 Implementation Plan](#)

#### Standard/Implementation Plan Effective Dates

- United States

Standard	Requirement	Effective Date	% of Applicable Facilities
MOD-025-2	R1., R2., R3.	07/01/2016	40%
MOD-025-2	R1., R2., R3.	07/01/2017	60%
MOD-025-2	R1., R2., R3.	07/01/2018	80%
MOD-025-2	R1., R2., R3.	07/01/2019	100%

#### Key Terminology

##### Applicable Facilities:

- Individual generating unit greater than 20 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Synchronous condenser greater than 20 MVA (gross nameplate rating) directly connected to the Bulk Electric System.
- Generating plant/Facility greater than 75 MVA (gross aggregate nameplate rating) directly connected to the Bulk Electric System.

##### Real Power

The portion of electricity that supplies energy to the load

##### Reactive Power

The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive Power must be supplied to most types of magnetic equipment, such as motors and transformers. It also must supply the reactive losses on transmission facilities. Reactive Power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (Mvar).





# Plan of Action

## Enforcement Approach Timeline

Estimated Completion	Standard	Status
2022 Q1	CIP-006-6 PRC-005-6	Completed
2022 Q2	CIP-007-6 FAC-008-5	Completed
2022 Q3	CIP-002-5.1b CIP-010-2	Completed
2023 Q1	CIP-005-7 CIP-011-2	Completed



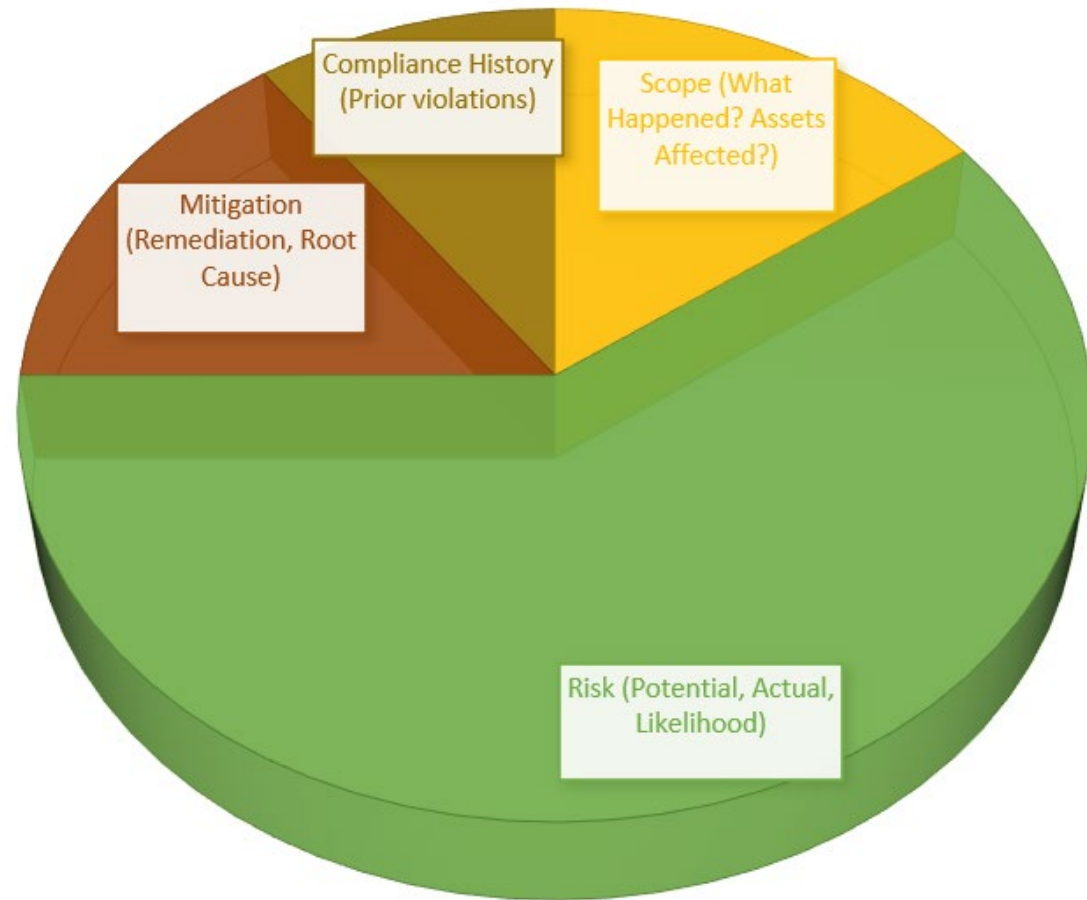
## Results

Standard	2021	2022	Difference
CIP-002	0	4	4
CIP-004	10	15	5
CIP-005	4	5	1
CIP-006	8	7	-1
CIP-007	16	17	1
CIP-010	19	11	-8
CIP-011	1	0	-1
FAC-008	12	13	1
MOD-025	10	28	18
PRC-005	3	10	7
Grand Total	83	110	27



What  
enforcement  
path will my  
noncompliance  
go?

### CRITERIA FOR DISPOSITION METHOD





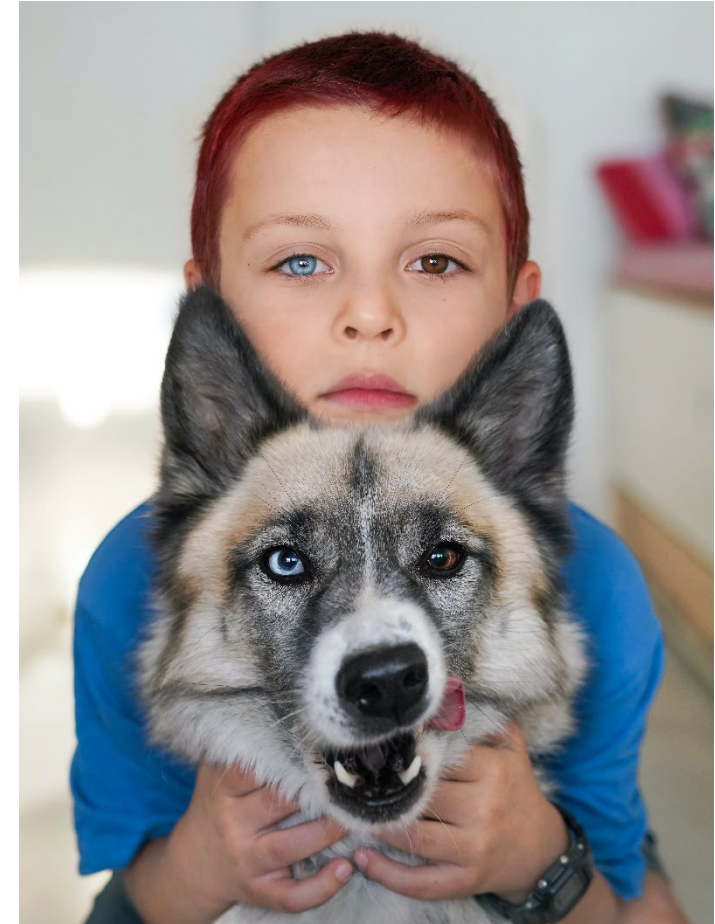
# Compliance History Analysis

- Step 1: Determine if prior compliance history is relevant
  - If you find relevant compliance history, move to Step 2
- Step 2: Determine if relevant prior compliance history should be considered aggravating or not aggravating for various purposes
  - Usually impacts disposition method or penalty amount
  - But can also be considered aggravating for risk assessment purposes



# What is Relevant Compliance History?

- **Same or similar Standard and Requirement**
  - CIP-007-3 R3 and CIP-007-6 R2 both involve security patch management
  - FAC-009-1 R1 and FAC-008-3 R6 both involve ensuring Facility Ratings are consistent with the Facility Ratings Methodology





# What is Relevant Compliance History?



- **Affiliates**

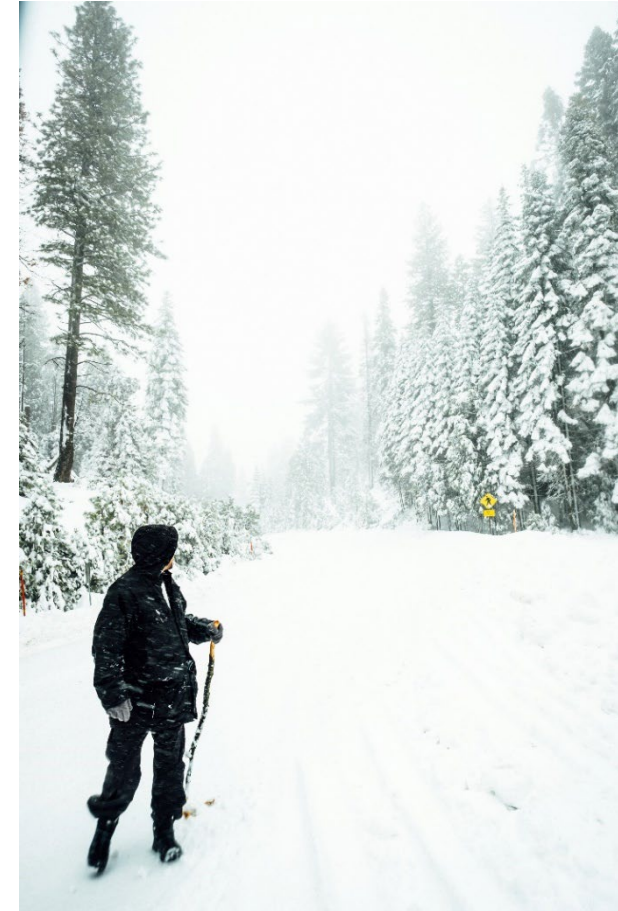
- If affiliates share a common NERC compliance program, or a common program for the purposes of the Standard(s) at issue, the affiliates' compliance history may be relevant
- Look at whether the affiliate has:
  - Its own compliance policies, processes, or procedures;
  - Its own committee to monitor and oversee compliance; and/or
  - Its own compliance officer





# What is Relevant Compliance History?

- **Five-Year Lookback**
  - If prior noncompliance was still ongoing within five years of the start date of the current noncompliance, it may be relevant







# Aggravating Compliance History



- **Repetitive Violations**

- Repeat or continuing conduct (failure to adequately mitigate prior issue)
- Relevant prior noncompliance has same root cause or prior mitigation should have prevented current issue

- **Programmatic Failure**

- Multiple prior failures of same or similar Standard or Requirement, or multiple failures of a group of Standards or Requirements
- Will usually involve substantial or widespread problems and require broad/entity-wide mitigation



# Reasons to Not Aggravate

- Different root causes
- Prior mitigation would not have prevented current noncompliance
- Other reasons
  - High frequency activities may result in minor noncompliance that is identified and corrected quickly
  - Entity overhauled/restructured compliance program in ways that resulted in quick identification and correction of instant noncompliance





# The Effects of Compliance History

- Company A
- Small Size
- CIP-004 R5.1 violation
- Minimal Risk
- Duration 15 days of noncompliance
- No prior compliance History
- Penalty \$29,000

- Company B
- Small Size
- CIP-004 R5.1 Violation
- Minimal Risk
- Duration 15 days of noncompliance
- 4 aggravating prior noncompliances
- Penalty \$60,000



# Registration and Certification Review

Brian Robinson





# Registration Update



# Overview of Registration Process

- Owners, operators and users of the Bulk Power System (BPS) are all candidates for registration
  - NERC Rules of Procedure (RoP) defines the registration process
    - Appendix 5A: Organization Registration and Certification Manual (How)
    - Appendix 5B: Statement of Compliance Registry Criteria (Who)
- NERC and the Regional Entities (NPCC) coordinate with Entities to ensure appropriate Functional Registration (i.e. TOP, GO, DP, etc.)





# ERO Portal and CORES

- ERO Portal access required to manage NERC Compliance Registry (NCR) Information
- Centralized Organization Registration ERO System (CORES) is an ERO Portal module which consolidates the primary registration functions, including:
  - New Entity Registration requests
  - Functional Registration Scope modification
  - Delisting/Deactivation Requests

# ERO Portal and CORES: Mandatory Information

- Minimum Contacts:  
PCC/PCO
  - PCC is granted Admin access
- Unlimited Alternate Compliance Contacts
- Maintaining Contact Information is essential

[NERC Learning - Training Material for NERC Professionals](#)

## CORES for Registered Entities

PREVIOUS VIDEO | NEXT VIDEO

1. Course Introduction

NERC

Kevin Koloini | NCR90074315-7314-4098-a555-0b31cb54e0ed - Basin Electric

My Profile | My Resources | My Groups | NERC Membership | New Entity Registration Request | My Entity | Help Desk | NERC Membership List

Home / My Entities / Basic Information

- This form is used for updating basic information about the registered entity. This includes the name, acronym, and address. The information regarding the NERC Led Review Panel and the BES Exception Process are asked to review as part of the application. Name changes will require approval.
- Training Link

Entity Name *	Basin Electric - Test 2	Edit Name	✓	Basic Information
NERC Number	NCR90074315-7314-4098-a555-0b31cb54e0ed	Street 1 *	✓	Upstream Holding Companies
Phone	701-223-0441	Street 2	✓	Contacts
Website	http://www.basinelectric.com	City *	✓	Entity Scopes
		State/Province *	✓	Functional Mapping

00:45 Has a NERC Led Panel Request been submitted?

vimeo



# Information Sharing

- Required Systems (based on registration)
  - NERC Alert
  - GADS/GADSWind/DADS/TADS
  - MIDAS
- Voluntary
  - E-ISAC

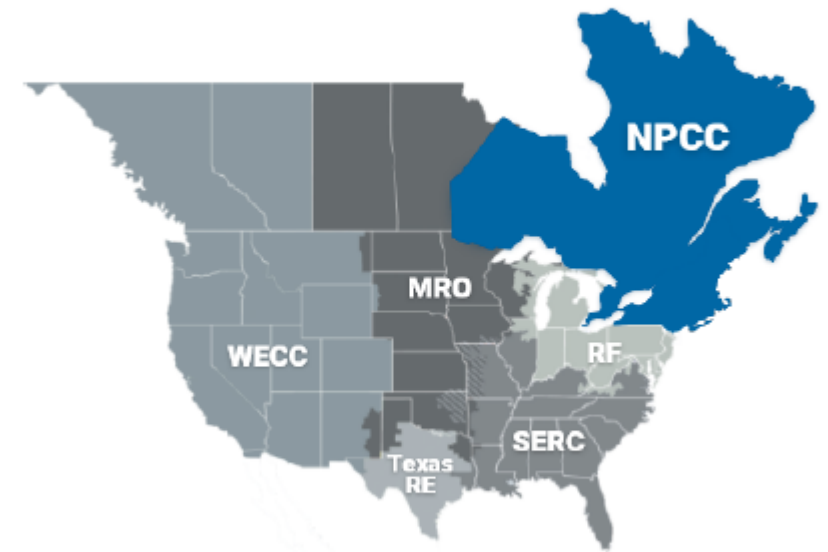


# New Generator Welcome

- NPCC outreach to help ensure smooth transition to Commercial Operation and Compliance
  - Review of Data Request (GADS/MIDAS/NERC Alerts)
  - Review of Facility Rating expectations
  - Training Obligations
  - Coordination with Functionally Mapped Entities
    - Modeling Data
    - Data Specifications

[New Generator Welcome](#)

## Generator Welcome Package



April 2023



# Coordinated Oversight Program

- Multi Region Registered Entity vs. Coordinated Oversight
  - Multi Region Registered Entity (MRRE): Entity that holds registrations in more than 1 Region.
  - Coordinated Oversight: One Regional Entity is responsible for CMEP activities for entities with registrations in more than 1 region.
  - Coordinated Oversight can be sought for MRREs or corporate entities with multiple NCR numbers



# Certification

# Rules of Procedure Process Overview

---

- NERC RoP Appendix 5A outlines Certification process
- New Registrations which require a full Certification:
  - RC
  - BA
  - TOP







# Certification Review Activities

- Examples of modification requiring a Certification Review
  - Changes in footprint
  - Relocation of a Control Center
  - Modification of the EMS which
    - Modifies Security Perimeters
    - Modifies System Operators
      - Situational Awareness tools
      - Functionality
      - Machine Interfaces



# Certification Scope

- Certification Review scopes are tailored to address the modification (not exhaustive as a new certification)
- Certifications are Not an Audit!
  - Seeking assurance for future reliability



# Future Changes: Inverter Based Resources



# NOPR: Inverter Based Resources

- November 2022 FERC NOPR “Reliability Standards to Address Inverter-Based Resources”
- FERC Identified Reliability Gaps for Inverter Based Resources
  - data sharing;
  - model validation;
  - planning and operational studies; and
  - performance requirements
- Three Categories of IBR
  - Registered IBR
  - Unregistered IBR
  - IBR-DER (Distributed Energy Resources)





# IBR Order: How to Capture IBR Entities

---

- Three steps to Capture IBR Entities
  - Revise Rules of Procedure to include GO-IBR/GOP-IBR within 12 months
  - Identify candidates for GO-IBR/GOP-IBR Registration within 24 months
  - Effectuate Registration of GO-IBR/GOP-IBR within 36 Months
- Generator Owner – Inverter-Based Resource (GO-IBR):
  - Owners of IBRs which have aggregate nameplate capacity of less than or equal to 75 MVA and greater than or equal to 20 MVA interconnected at a voltage greater than or equal to 100 kV; or
  - Owners of IBRs which have aggregate nameplate capacity of greater than or equal to 20 MVA interconnected at a voltage less than 100 kV.



# Additional Reference

- [Organization Registration and Organization Certification \(nerc.com\)](https://www.nerc.com)
- [NERC Filings to FERC 2023](#)



# You've Received an Audit Notification, What's Next?

**Jacqueline Jimenez**

*Director, Compliance*

**Emily Stuetzle, CISA**

*Manager, CIP Compliance*







# Acronyms

- ANL – Audit Notification Letter
- ANP – Audit Notification Package
- ATL – Audit Team Lead
- ERT – Evidence Request Tool
- RFI – Request for Information
- SEL – Secure Evidence Locker



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# I Received an audit notification, What Do I Do?



Read the Email



Review the  
documents in Align

Start with the ANL first  
Then proceed with the  
rest of the documents



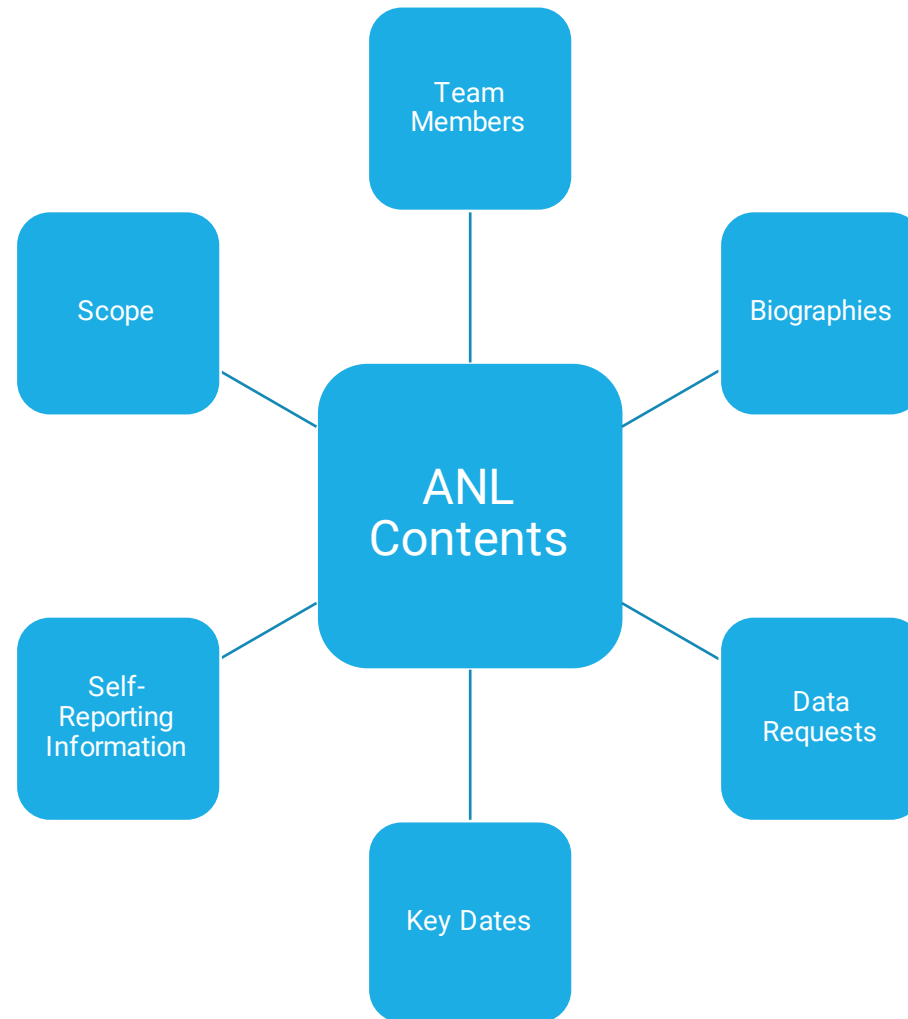
Reply to the email

Acknowledge receipt  
of the email

Identify the individual  
who will be the  
primary point of  
contact



# What's in the ANL?





# Audit Initial Briefing Call



## Audit Logistics

- Key Dates, Audit process, Virtual Interviews, etc.

## Entity Overview

- Key information for Auditors

## Self-Reports/PNCs

- Expectations of entity

## Evidence Tips

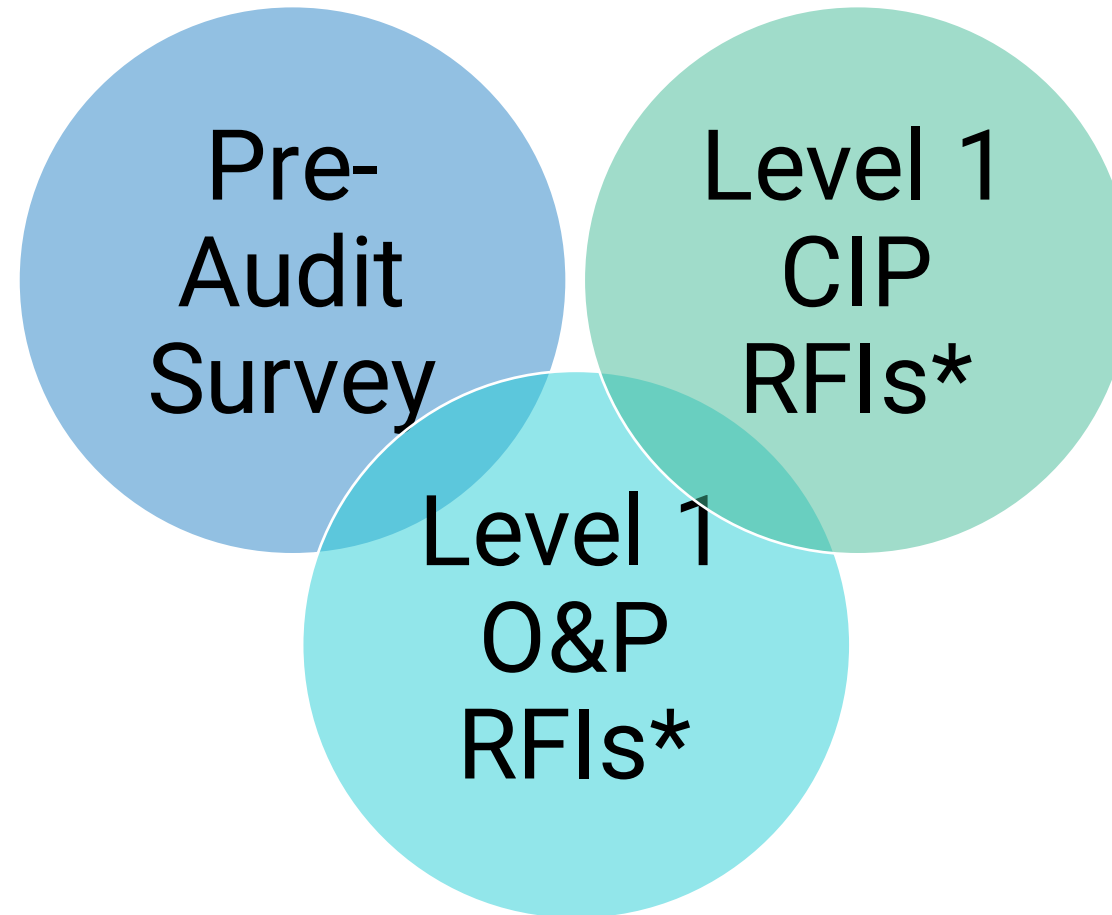
- What auditors are looking for

## Q&A

- Entity or NPCC Questions



# RFIs due 30 days after Audit Notification



*\* Dependent on the scope of the audit*



# Level 1 O&P RFIs



## O&P RFIs

- Standard Specific Requests (e.g. *FAC-008*, *PRC-005*)
- Previous Audit Follow-Ups
- BES Facility Work
- System Diagrams
- Facility Diagrams
- BES Assets
- Templates and Indexing





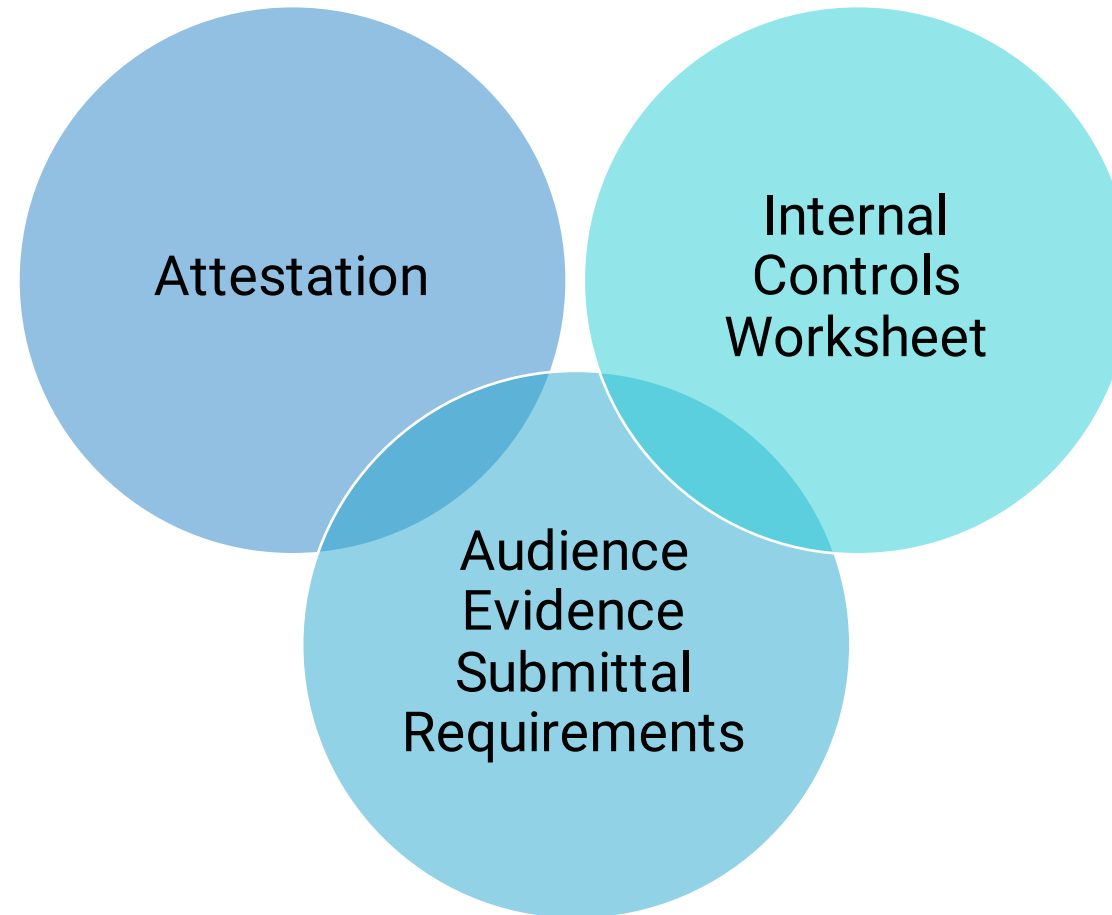
## Level 1 CIP RFIs

Detail Tab or Request ID	Standard	Requirement	Initial Evidence Request Required in RSAW and NERC Evidence Request Spreadsheet	Response Due Date
EAP	CIP-005		Provide a list of all Electronic Access Points (EAPs) and identify the interfacing ESP(s) and its configured EACMS on the EAP tab.	
PSP	CIP-006		Provide a list of Physical Security Perimeters and physical access points on the PSP tab.	
CSI	CIP-003 CIP-008		For each Cyber Security Incident response plan provided in the response to CIP-003-R2-L1-01 and/or CIP-008-R1-L1-01, provide a list of each test and activation of the Cyber Security Incident response plan on the CSI tab.	
TCA	CIP-003 CIP-010		For each TCA managed or not managed by the Responsible Entity, provide the information requested on the TCA tab.	
RM	CIP-003 CIP-010		For each Removable Media authorized and/or used during the audit period, provide the information request on the RM tab.	
BCSI	CIP-004 CIP-011		Provide a list of designated storage locations for provisioned access to BCSI in the BCSI tab.	
Reuse_Disposal	CIP-011		Provide the list of applicable Cyber Assets that have been released for reuse or in the disposal process during the audit period on the Reuse_Disposal tab.	
Procurement	CIP-013		Provide a listing of each procurement during the audit period for high and/or medium impact BES Cyber Systems of vendor products or services resulting from: (i) procuring and installing vendor equipment and software; and (ii) transitions from one vendor(s) to another vendor(s) on the Procurement tab.  *Future use with CIP-013-2: Include procurements for EACMS and PACS associated with high and/or medium impact BES Cyber Systems.	
CIP-TFE-L1-01			For each approved TFE and any TFE terminated during the audit period, provide evidence of the following: 1. Implementation of the compensating measures 2. Research towards achieving strict compliance as required 3. Beginning date of the approved TFE 4. Anticipated ending date of the approved TFE 5. Assets affected by the approved TFE 6. TFE ID number, Requirement(s) and Part(s) affected by the approved TFE	
CIP-CEC-L1-01			For each declaration of, and response to, a CIP Exceptional Circumstance, provide the following: 1. Beginning date of the CIP Exceptional Circumstance 2. Ending date of the CIP Exceptional Circumstance 3. Assets affected by the CIP Exceptional Circumstance 4. Requirement(s) and Part(s) affected by the CIP Exceptional Circumstance 5. Description of the situation which triggered the CIP Exceptional Circumstance	
CIP-SRP-L1-01			For all CIP Standards and Requirements that are in-scope and use technical/automated tools; provide a table/chart/spreadsheet detailing what hardware, software, appliance, etc. is utilized to accomplish compliance with each applicable Parts. Include in the chart whether the software is developed in-house, third-party, cloud service, etc.	
CIP-EOL-L1-01			Provide a list of Cyber Assets with operating systems, firmware, and/or software that is no longer supported (also referred to as end-of-life), and describe implemented control(s) to protect the Cyber Asset(s) and mitigate potential vulnerabilities to associated BES Cyber Systems.	
CIP-002-R1-L1-01	CIP-002	R1	Provide the process that was implemented to identify each of the high impact and medium impact BES Cyber Systems, and each asset containing a low impact BES Cyber System. Additionally, provide evidence of the implementation of that process.	
			Provide the following supporting information for each listed BES asset on the BES Assets tab: 1. For each generation resource (either owned or connected to the entity's Transmission Facilities), the Net Real Power capability, and method used to calculate this value. [IRC 2.1, 2.11] 2. For each generation resource (either owned or connected to the entity's Transmission Facilities), the location (station or substation name) of the generation interconnection Facilities. [IRC 2.1, 2.3, 2.4, 2.5, 2.6, 2.8] 3. List all Remedial Action Schemes which relate to the entity's Facilities along with a description of their purpose. [IRC 2.9, 3.5, 3.6]	
▶ Instructions Level 1 Sample Sets L2 Level 2 NPCC Sample Sets Table BES Assets CA Low C				





# General Data Requests and Information





# I submitted my Level 1 RFIs, what's next?



## **Sampling**

Dependent on audit scope  
Level 2 RFI – due with RSAWs and evidence



## **Prepare RSAW, evidence, and IC worksheet submittal**



# I submitted my RSAWs, evidence, etc., what happens now?



NPCC reviews  
submittal

- Multiple rounds of RFIs



Virtual Interviews



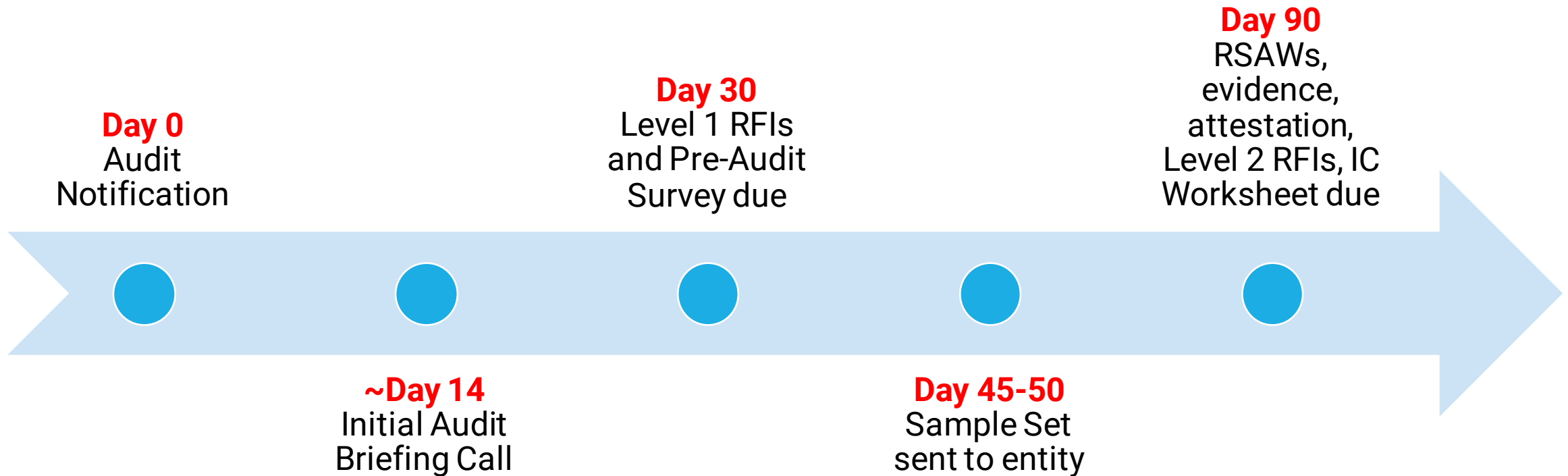
Audit Exit  
presentation



Audit Reports



# Recap





# Entity Resources

- [NPCC Audit Milestones and Deadlines](#)
- [Compliance Audit Schedules](#)
- CIP ERT Overview and Lessons Learned
  - [Slides](#)
  - [Recording](#)



# Questions

Jacqueline Jimenez  
[jjimenez@npcc.org](mailto:jjimenez@npcc.org)

Emily Stuetzle  
[estuetzle@npcc.org](mailto:estuetzle@npcc.org)

# CIP-014-3 Expectations

**Travis Tate**

*Senior Compliance Engineer*







# Primary Physical Security Standards

- CIP-003-8 – Physical security of low impact BCS
- CIP-006-6 – Physical security of medium and high impact BCS
- CIP-014-3 – Physical security of Transmission stations and Transmission substations, and their associated primary control centers





## CIP-014-3

June 16, 2022

CIP-014-3 became effective

V3 removed the provision that evidence be retained at the transmission owner's or transmission operator's facility


CIP-014-3 Evidence can be placed in the SEL effective 06/16/22



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# ERO CIP-014 R1 Practice Guide



This is a Compliance Monitoring and Enforcement Program (CMEP) Practice Guide. It is developed exclusively by the ERO Enterprise under its obligations for independence and objectivity. This CMEP Practice Guide is intended for use by ERO Enterprise Staff to support consistency as they perform CMEP activities. This CMEP Practice Guide is posted publicly solely to provide transparency.

## ERO Enterprise CMEP Practice Guide

### Version 1.1

CIP-014-3 R1  
September 19, 2022

#### Background

In support of successful implementation and compliance with the North American Electric Reliability Corporation (NERC) Reliability Standards, the Electric Reliability Organization (ERO) Enterprise<sup>1</sup> adopted the Compliance Guidance Policy.<sup>2</sup> The Compliance Guidance Policy outlines the purpose, development, use, and maintenance of guidance for implementing Reliability Standards. According to the Compliance Guidance Policy, Compliance Guidance includes two types of guidance: Implementation Guidance and Compliance Monitoring and Enforcement Program (CMEP) Practice Guides.<sup>3</sup>

#### Purpose

CMEP Practice Guides developed solely by the ERO Enterprise to reflect the independent, objective, professional judgment of ERO Enterprise CMEP staff (CMEP staff) and may be initiated at times following policy discussions with industry stakeholders. Following development, guides are posted for transparency on the NERC website.

It is noted, especially to registered entities using this guide as a reference that some parts of the guide are to assist CMEP staff in understanding how an entity mitigates risk to inform risk-based compliance monitoring, while other aspects of this guide may assist CMEP staff directly in determining compliance. This understanding of the controls to mitigate risk can affect monitoring activities, requests for information, and

Explains Regional approach for understanding R1 technical rigor

[CIP-014-3 Practice Guide](#)

**Effective 9-19-22**



# NPCC CIP-014 Focus Areas

## The aspects of the R1 assessment that NPCC wishes to understand

- Dynamic and Steady State Study's
- Study model years
- Facility selection criteria (other than the "A-10 list")
- Independent methodologies
- How are changes tracked and verified
- Assessment and review dates every 30 or 60 months

## TO's Responsibility

- Responsible for performing the R1 Assessment
- Also responsible for R3 notification to TOP with operational control of primary control center within 7 days of completion of R2



# Focus Areas Continued

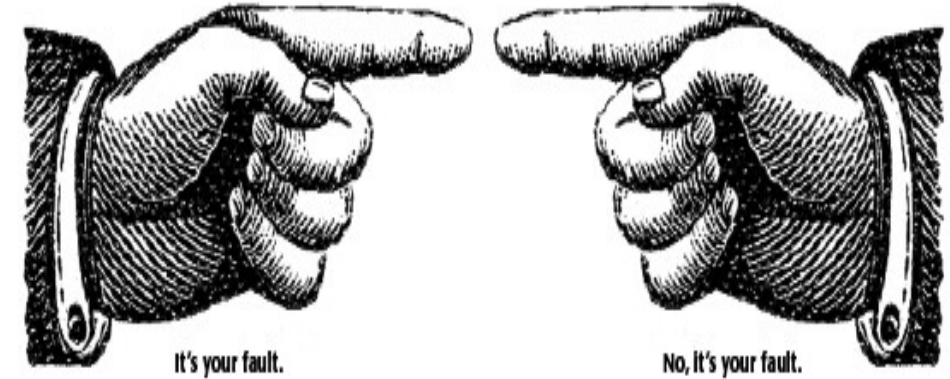
## Requirement 2

- Study verification by an unaffiliated 3<sup>rd</sup> party

## Utilization of another Entity's criteria

- Criteria coordination may be appropriate
- What if the TO is unaware of the study parameters (we did the study the way they told us to do it)

Who is The unaffiliated 3<sup>rd</sup> party reviewer if the 3<sup>rd</sup> party is the one determining the criteria study or performing the study.







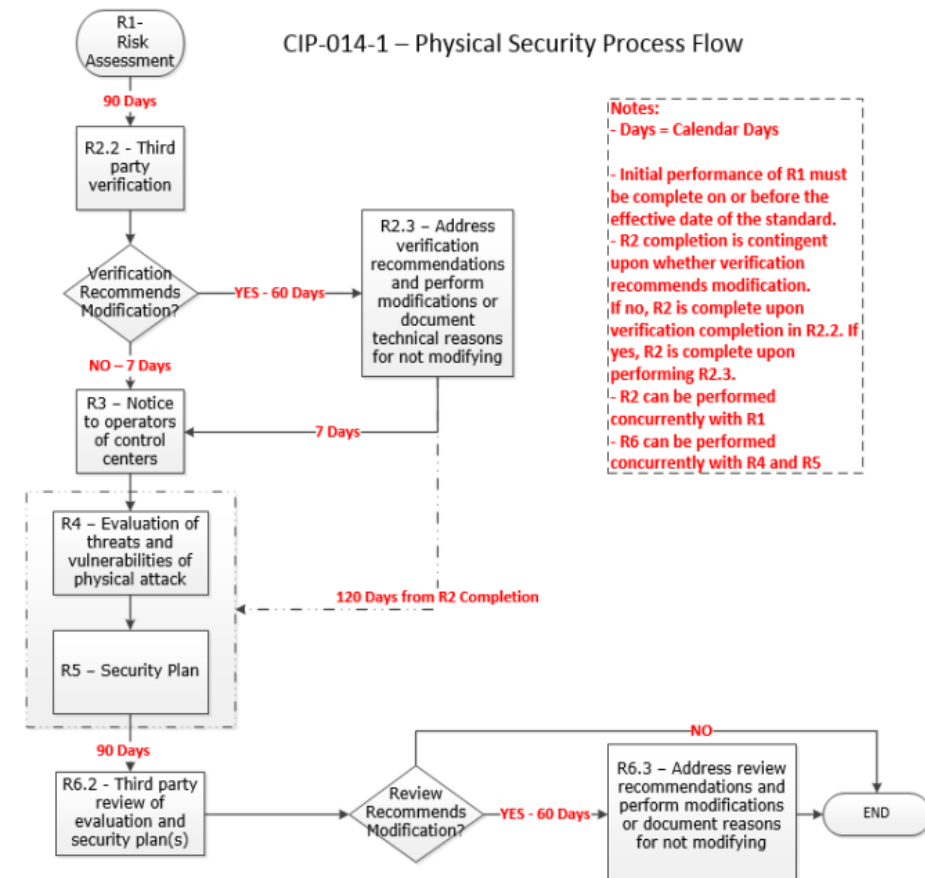
# R4 - The Vulnerability Assessment

After R1 and R2 are completed in conjunction with R3  
(notification by the TO, TP, ISO)

A threat and vulnerability assessment is required to be performed **within 120 calendar days** following the completion of R2 for the following:

Newly identified facilities

**Previously identified** facilities require an assessment **review and update** of threat landscapes when triggered every 30 calendar months





## R5 - Physical Security Plan

Every 30 calendar months

- A subsequent risk assessment Must be Performed

Within 120 calendar days following the completion of R2

- Entities must have a security plan that references their vulnerability assessment.

Dates

- Will be utilized to link timing between R4 and R5

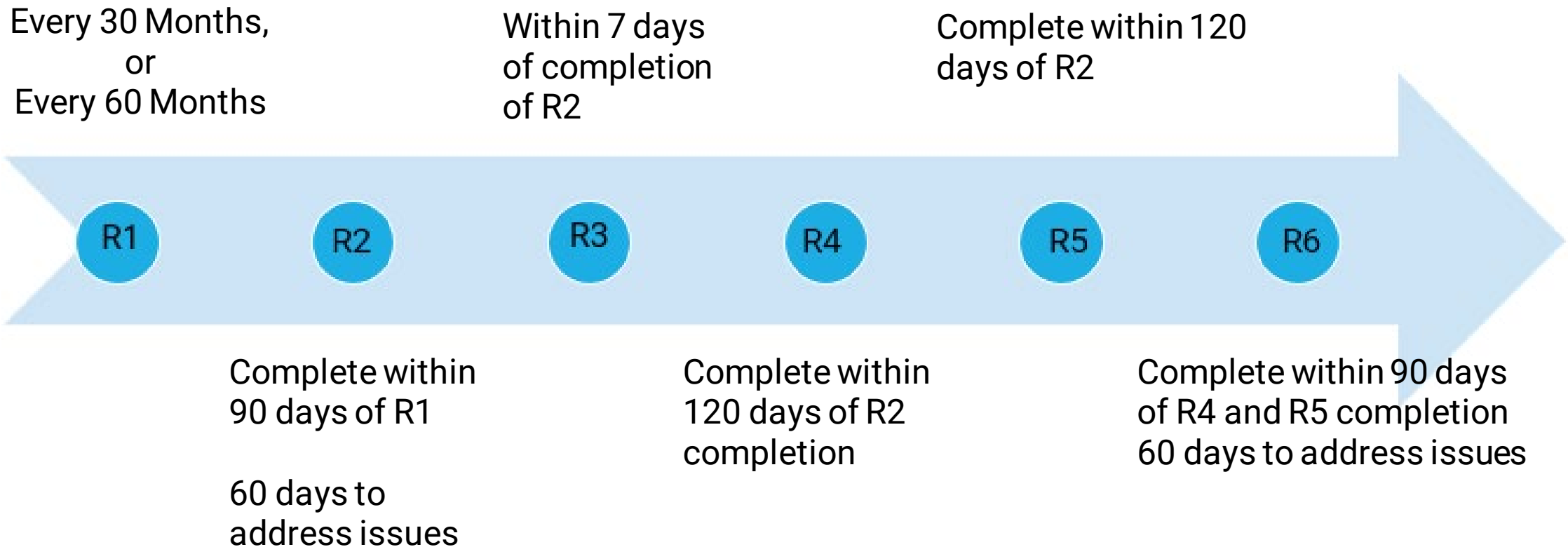
Within 90 days per R6

- R4 and R5 must be reviewed by an unaffiliated third party with appropriate credentials





# CIP-014 Timeline





NORTHEAST POWER COORDINATING COUNCIL, INC.



# Questions

Travis Tate

[ttate@npcc.org](mailto:ttate@npcc.org)

PUBLIC

# Internal Network Security Monitoring & WECC CIP-012 Audit

**Michael Bilheimer**  
*Senior CIP Analyst*





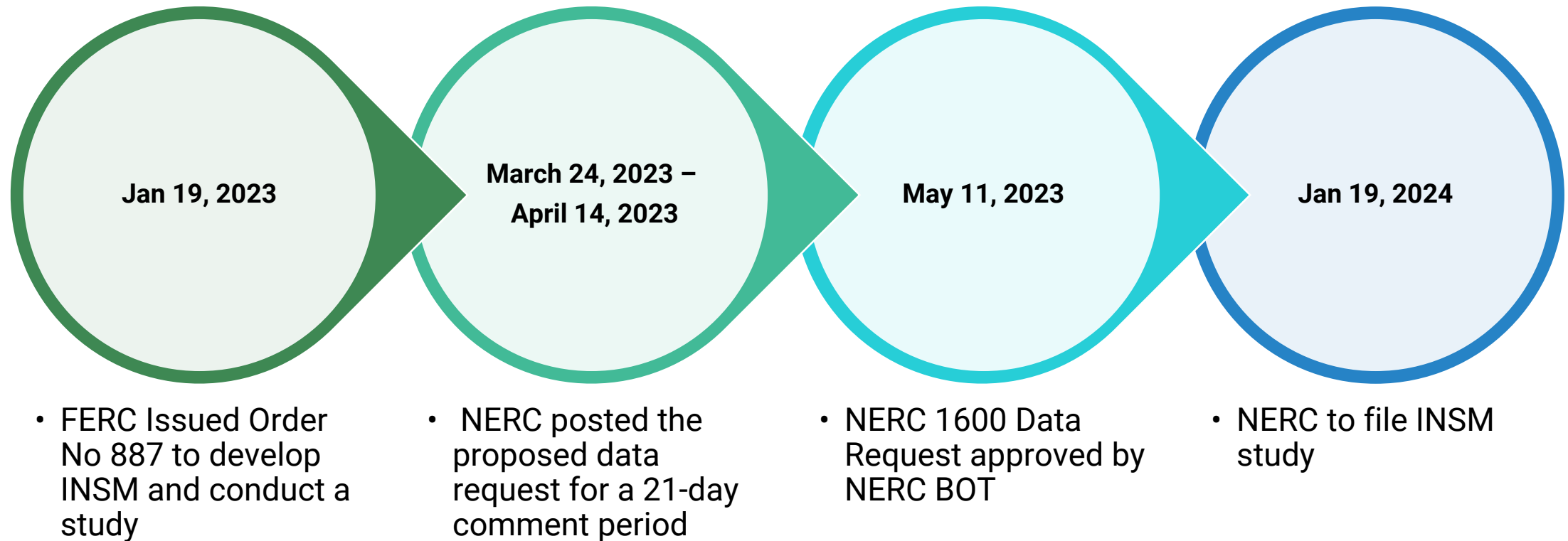
# What is Internal Network Security Monitoring (INSM)?



INSM is a subset of network security monitoring that is applied within a “trust zone,” such as an Electronic Security Perimeter (ESP) and is designed to address situations where vendors or individuals with authorized access are considered secure and trustworthy but could still introduce a cybersecurity risk to a high or medium impact BES Cyber System.



# Background of INSM 1600 Data Request





# Order No. 887 INSM Study

Directs NERC to perform a study to support possible future Commission actions on whether to extend INSM requirements to medium impact BES Cyber Systems without ERC and all low impact BES Cyber Systems regardless of ERC status.



The Study is required to include a determination of:

Ongoing risk to the reliability and security of the Bulk-Power System (BPS) posed by low and medium impact BES Cyber Systems that would not be subject to the new or modified Reliability Standards, including the number of low and medium impact BES Cyber Systems not required to comply with the new or modified standard; and

Potential technological or other challenges involved in extending INSM to additional BES Cyber Systems, as well as possible alternative mitigating actions to address ongoing risks.





# Summary of 21 Day Comment Period

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Not all entities believed that the proposed INSM Data Request contains the relevant data necessary to determine risk, challenges, and solutions and may require additional resources.

---

There is a need for INSM within the OT Network.

---

NERC modified questions and added text fields due to the comments that were received.

---

Entities requested 90 days instead of 60 days and NERC denied this request.

---

Provide a secure portal to submit Data Request information due to the sensitivity of the information.





# WECC CIP-012-1 Audit

WECC Audit Engagement  
Including CIP-012-1 R1

WECC High Impact Entity

NPCC SME participated as a  
CIP-012-1 Auditor





## May 1- May 3 Onsite

### NPCC Opportunity

- NPCC SME training on CIP-012-1 as an auditor on the engagement
  - Learn from WECC CIP-012-1 experience
  - Learn about Third Party CIP-012-1 communication (CAISO ECN Network)
  - Set expectations for NPCC CIP-012-1 evidence submittal
- Inter-ERO assistance and cooperation

### Learning Aspects



How region assesses evidence of encryption



Management and Maintenance of Encryption Service (Third Party or Entity applied)



Management of Encryption Contracts



Inclusion of CIP Exceptional Circumstances in overall process



MOU and other agreements with connected utilities



NORTH

COORDINATING COUNCIL, INC.



# Questions

Michael Bilheimer  
[mbilheimer@npcc.org](mailto:mbilheimer@npcc.org)

# Resources

[Section 1600 Data Requests  
\(nerc.com\)](http://nerc.com)

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