

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Registered Entities and ERO Enterprise IT Applications Update

Stan Hoptroff, Vice President and Chief Technology Officer  
Standards Oversight and Technology Committee Meeting  
May 10, 2017

**RELIABILITY | ACCOUNTABILITY**



- Registered Entities IT Projects Update
- ERO Enterprise IT Projects Update
- Compliance Monitoring and Enforcement Program (CMEP)  
Technology Program – Program objectives and current activities
- Electricity Information Sharing and Analysis Center (E-ISAC) IT  
Projects Update

- IT Projects Cost Benefits Initiative – Categories
- IT Projects Cost Benefits Initiative – Scorecard
- 2017-2020 Technology Spend Plans
- 2017 Budget and 2018 Forecast
- Priorities Looking Ahead

- User Management and Records (NERC applications) - Complete
  - Improved user experience, reduce complexity, and reduce support risk
  - Self service for users to manage profile, request access to lists, and resources
- Misoperations Data Portal - Underway
  - New capability, increase quality and efficiency, mitigate reliability risk
  - Registered entities will submit, review, retrieve, and update misoperations data for reliability studies

- NERC Public Website Enhancements - Underway
  - Improve user experience and reduce support challenges
- Entity Registration Application - Underway
  - Mitigate reliability risk, improve client experience, and reduce costs
  - Phase 1 – Coordinated Functional Registration
  - Integration with CMEP program

- Generating Availability Data System (GADS) – Wind Turbine Generation (FERC 1600 Data Request)
  - Mitigate reliability risk and provide new capability
- CMEP Program
  - Mitigate reliability risk, improve user experience, reduce costs, and provide new capability

- Ensure consistency in practices and data gathering by aligning common CMEP business processes across the ERO Enterprise
- Improve the effectiveness of the ERO Enterprise by improving the ability to share and analyze reliability risk and compliance information
- Increase efficiency of compliance work activities across the ERO Enterprise through the use of workflows and collaboration tools

- Assist the ERO Enterprise in meeting applicable requirements of generally accepted professional standards, as well as requirements established through the Rules of Procedure
- Reduce total combined NERC and Regional Entity IT capital investments and maintenance cost for CMEP-related applications; current annual licensing and maintenance fees ERO Enterprise-wide spend of \$1.1M
- Enable easier data entry and access to information for registered entities



- ERO project team and experienced consultant currently focused on the following activities:
  - Project communications and change management plan
  - Requirements gathering
  - Process and tools inventory
  - Conceptual model for key data structures and relationships
  - RFP and selection criteria for a new CMEP solution

- E-ISAC Portal Platform - Project underway
  - Targeted deployment September 2017
- Cybersecurity Risk Information Sharing Program (CRISP) Data Management Tools Evaluation and Support
  - Data Repository - In production

- Mitigate reliability risk to the Bulk Power System
- Reduce or avoid costs
- Increase capability
- Mitigate corporate risk
- Increase work quality
- Increase efficiency

Solution	Status	Primary Benefits
<b>MIDAS</b> Misoperations Information Data Analysis System	In Production	Reduce reliability risk <b>TBD</b> Increase capability 👍 Increase work quality 👍 Increase efficiency 👍
<b>UMR</b> User Management and Records	In Production	Mitigate corporate risk 👍 Increase efficiency <b>TBD</b> Reduce cost 👍

Solution	Status	Primary Benefits
<b>ERO Portal MIDAS</b>	<i>Project In Flight</i>	Mitigate corporate risk Increase efficiency
<b>Entity Registration</b>	<i>Project In Flight</i>	Mitigate reliability risk Increase capability Mitigate corporate risk Increase work quality Increase efficiency

	<u>2017</u>	<u>2018</u>
• ERO Enterprise		
▪ New Functionality	\$1.5M	\$2.6M
▪ Applications and Infrastructure Support	\$3.2M	\$3.2M
• NERC		
▪ New Functionality (Document Management)	\$335k	\$0
▪ Applications and Infrastructure Support	\$2.4M	\$2.3M
• E-ISAC*		
▪ Portal	\$1M	\$350k
▪ Other	\$402k	\$576k

*\* Does not include potential additional resources related to strategic initiatives being considered by the NERC Board of Trustees (Board) and Members Executive Committee (MEC)*

	<u>2019</u>	<u>2020</u>
• ERO Enterprise		
▪ New Functionality	\$3.0M	\$3.0M
▪ Applications and Infrastructure Support	\$3.4M	\$3.7M
• NERC		
▪ Applications and Infrastructure Support	\$2.7M	\$2.6M
• E-ISAC*		
▪ Portal	\$350k	\$350k
▪ Other	\$576k	\$576k

*\* Does not include potential additional resources related to strategic initiatives being considered by the Board and MEC*

(\$000's)

<b>Information Technology Budget</b>	<b>2017</b>	<b>2018*</b>
Personnel	\$ 4,227	\$ 4,238
Capital Expenditures	3,272	3,576
Contractors and Consultants	2,313	2,124
Meetings, Travel, and Conferencing	162	219
Office Costs	2,595	3,288
<b>Total</b>	<b>\$ 12,569</b>	<b>\$ 13,445</b>

***\*NOTE: The 2018 Budget is not final and is subject to change until approved by the Board on August 10, 2017.***



- Registered Entities
  - NERC Public Website Enhancements
  - Registration Application
  - GADS-Wind Data Portal
- ERO Enterprise
  - CMEP Technology Program
  - Enterprise Reporting – Transmission Availability Data System and events data to be extracted and loaded
  - FERC order 830 Geo-Magnetic Disturbance – Data collection solution

- E-ISAC
  - E-ISAC Portal Platform
  - E-ISAC Cyber Security Automation
  - CRISP Analytical Capabilities



# Questions and Answers

# Additional Information

Benefit Area	Potential Beneficiaries			Measurement Options
	REGISTERED ENTITIES	REGIONS	NERC	
Mitigate Reliability Risk	X	X	X	Deliverable Confirmation
				Metric Based
				Surveys
Increase Capability		X	X	Deliverable Confirmation
				Surveys
Mitigate Corporate Risk		X	X	Deliverable Confirmation
				Metric Based
				Auditable Records
Increase Work Quality	X	X	X	Time/Labor Comparisons
				Delivery Confirmation
				Metric Based
				Surveys
Increase Efficiency	X	X	X	Time/Labor Comparisons
				Surveys
				Anecdotal Evidence
Reduce Cost	X	X	X	Financial Reporting

# NERC

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# Guidelines and Technical Basis Update

Howard Gugel, Senior Director of Standards and Education  
Standards Oversight and Technology Committee Meeting  
May 10, 2017

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- Initially designed to support results based standards
- First used in FAC-003-2
- Contained an “information only” disclaimer
- Incorporated into standard development template
- Disclaimer paragraph was omitted

- Provides drafting teams a mechanism to
  - Explain the technical basis for Reliability Standard
  - Provide technical guidance to help support effective application
- To further clarify Guidance and Technical Basis (GTB)
  - NERC staff and Standards Committee (SC) leadership to coordinate
  - Captured in Task 3 in SC Strategic Plan



- NERC staff and SC leadership collaboration
- A separate document to explain technical basis
- Focus on understanding technology and the technical requirements
- No compliance approaches or compliance guidance
- Encourage use of NERC Compliance Guidance Policy

- Present to SC for endorsement
- Report results at August Standards Oversight and Technology Committee meeting
- Begin implementing for all projects going forward
- Consider in periodic reviews whether to remove GTB from existing standards



# Questions and Answers

# CIP-013-1 – Cyber Security - Supply Chain Risk Management

Howard Gugel, Senior Director of Standards and Education  
Standards Oversight and Technology Committee Meeting  
May 10, 2017

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- Background
  - FERC issued Order No. 829 on July 21, 2016
  - Standard must be filed by September 2017
- Status
  - Initial ballot ended March 3, 2017: 10.36%
  - Additional comment period and ballot underway
    - Represents industry-responsive changes
    - Standards Committee coordination for subsequent ballots, if necessary
  - FERC filing deadline of September 27, 2017



# Questions and Answers

# Reliability Standards Quarterly Status Report

Howard Gugel, Senior Director of Standards and Education  
Standards Oversight and Technology Committee Meeting  
May 10, 2017

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- 11 standards related directives in progress

Project	Regulatory Directives	Regulatory Deadline
Project 2013-03 Geomagnetic Disturbance Mitigation	4	6/4/2018
Project 2015-09 Establish and Communicate System Operating Limits	2	N/A
Project 2015-10 Single Points of Failure	2	N/A
Project 2016-02 Modifications to CIP Standards (Revisions unrelated to Definition of "Low Impact External Routable Connectivity")	2	N/A
Project 2016-03 Cyber Security Supply Chain Management	1	9/27/2017



- May 2017 (0 planned)
- August 2017 (1 planned)
- November 2017 (1 planned)
- February 2018 (4 planned)

- Revisions to NERC Standard Processes Manual
  - Sections 6, 7, and 11
  - Posted for industry comment through May 3, 2017
- Notification of Standards Committee Special Election Results

- History
- Current activities
- Future activities
- Policy input



# Questions and Answers