

2018 Standards and Compliance Workshop

July 24-25, 2018 | Eastern Time Zone

Hyatt Regency Columbus
350 North High Street
Columbus, OH 43125

*Note: NERC Staff will try to stay on schedule with each topic; however, if a presentation ends early we will need to move to the next topic.

Tuesday, July 24, 2018	Presentation	Speaker(s)
8:30 – 9:00 a.m.	Early Registration/Light Breakfast	
9:00 a.m.–Noon	NERC 101: An overview of the North American Electric Reliability Corporation (NERC), its core mission statement, departments located within NERC, and an overview of each Region.	Howard Gugel, NERC Senior Director of Standards and Education Steven Noess, NERC Director of Compliance Assurance and Program Oversight
Noon–1:00 p.m.	Lunch	
1:00–1:10 p.m.	Welcome and Introductions	Jordan Mallory, NERC Standards Developer
1:10–1:30 p.m.	Keynote Remarks	Wade Smith, Senior Vice President, Grid Development, American Electric Power
1:30–2:15 p.m.	Coordinated Oversight of Multi Region Registered Entities (MRRE): Entrance into the Program	Adina Kruppa, NERC Manager, Assurance Oversight and Monitoring
2:15–3:00 p.m.	Internal Controls Introduction/Compliance Monitoring and Enforcement Program (CMEP) Process	Steven Noess, NERC Director of Compliance Assurance and Program Oversight Adina Kruppa, NERC Manager, Assurance Oversight and Monitoring
3:00–3:15 p.m.	Break	
3:15–4:45 p.m.	Internal Controls Panel: Shared implementation experience from registered entities	Ryan Mauldin, NERC Compliance Assurance Advisor Jodirah Green, ACES Power Managing Director of Reliability Services Helen Nalley Southern Company Operations Compliance Director LaTroy Brumfield, ATC James Stanton, SOS International Director of Advisory Services Michael Puscas, ISO-NE Compliance Manager
4:45–5:00 p.m.	General Q&A Closing Announcements	Jordan Mallory, NERC Standards Developer
5:30–6:30 p.m.	Reception	

Wednesday, July 25, 2018	Presentation	Speaker(s)
7:00–8:00 a.m.	Breakfast	
8:00–8:10 a.m.	Opening Announcements	Jordan Mallory , NERC Standards Developer
8:10–8:40 a.m.	Program Alignment	Barbara Nutter , NERC Manager, Business Support Assurance Jennifer Flandermeyer , Evergy Director, Federal Regulatory Policy and Chair of the NERC CCC
8:40–9:45 a.m.	CIP Standards <ul style="list-style-type: none"> • Supply Chain: Standard Overview and NERC Board Resolution • CIP-005 Remote Access (FERC findings and NERC oversight) 	Lonnie Ratliff , NERC Senior Manager, Cyber and Physical Security Assurance Howard Gugel , NERC Senior Director of Standards and Education
9:45–10:15 a.m.	Break	
10:15–11:15 a.m.	Registration – ERO Enterprise Initiatives	Ryan Stewart , NERC Senior Registration Manager
11:15 – Noon	NERC Legal Update	Lauren Perotti , NERC Counsel
Noon–1:00 p.m.	Lunch	
1:00–2:30 p.m.	Preventing repeat noncompliance: Ensuring sustainable compliance through comprehensive mitigation that addresses root cause	Ed Kichline , NERC Senior Counsel and Director of Enforcement Oversight Max Reisinger , ReliabilityFirst Counsel, Enforcement Department Helen Nalley Southern Company Operations Compliance Director
2:30–2:45 p.m.	Break	
2:45–4:00 p.m.	Standards Under Development Updates <ul style="list-style-type: none"> • Project 2015-09 Establish and Communicate System Operating Limits • Project 2015-10 Single Points of Failure • Project 2016-02 Modifications to the CIP standards • BAL-003 • Standards Alignment • GMD Variance 	Soo Jin Kim , NERC Manager, Standards Latrice Harkness , NERC Senior Standards Developer Jordan Mallory , NERC Standards Developer Matthew Hyatt , Manager, Control Center Design and Special Projects TVA and NERC CIP standards drafting team member
4:00–4:20 p.m.	Technical Rationale	Chris Larson , NERC Manager of Standards Information

4:20–4:45 p.m.	Standards Efficiency Review	Howard Gugel , NERC Senior Director of Standards and Education Chris Larson , NERC Manager of Standards Information
4:45–5:00 p.m.	General Q&A Closing Announcements	Jordan Mallory , NERC Standards Developer

Speaker Bios

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Howard Gugel (howard.gugel@nerc.net)

Howard Gugel is the Senior Director of Standards and Education for the North American Electric Reliability Corporation (NERC). In this role he is responsible for directing all aspects of NERC's continent-wide standards development process by providing oversight, guidance, and coordination of the timely development of technically excellent reliability standards to ensure an adequate level of reliability of the bulk power system. Prior to this he was the Director of Performance Analysis for NERC. His primary responsibility in that role was the development, maintenance, and analysis of reliability performance metrics, including those in NERC's annual State of Reliability Report. This includes analysis of various databases of transmission and generations outages to look for statistically significant trends. Prior to joining NERC, he was with Progress Energy Florida in the roles of transmission area maintenance manager and transmission planning manager. His background also includes management experience in transmission operations and energy marketing.

Howard received his BSEE and MSEE from the University of Missouri – Rolla, and is a licensed Professional Engineer in the state of Missouri.



Latrice Harkness (latrice.harkness@nerc.net)

Latrice Harkness joined the North American Electric Reliability Corporation in 2014. Latrice has over 15 years of experience working in the electric utility industry. At NERC she has worked as an Engineer of Registration and Certification and is currently working as a Senior Standards Developer.

Prior to joining NERC, Latrice worked as a Transmission Analyst in Project Management at Georgia Power. She also has experience as a Security Engineer conducting short-term and long-term load flow studies for the bulk power system in Georgia and distribution engineering.

Latrice has a Bachelor's degree in Civil Engineering from the Georgia Institute of Technology and a Master of Science in Management in Leadership and Organizational Effectiveness from Troy State University.



Soo Jin Kim (soo.jin.kim@nerc.net)

Soo Jin is currently the Manager of Standards Development, and prior to this role, she served as the Manager of Reliability Operations reporting directly to the Chief Reliability Officer and Senior Vice President, Mark Lauby. Soo Jin began at NERC in December 2012 in our Atlanta, Georgia office as a Standards Developer. Before joining NERC, Soo Jin was an Associate at Troutman Sanders LLP in Washington, DC in their Federal Energy Group. At Troutman Sanders, Soo Jin worked on a variety of federal energy regulatory matters. Prior to attending law school, Soo Jin was a consultant/business analyst with various consulting firms focused on energy and commodity trading. Soo Jin has a BA in Economics and English from the University of Georgia, and she received her Juris Doctorate from American University.



Chris Larson (chris.larson@nerc.net)

Chris Larson is the Manager of Standards Information at NERC, and joined NERC in July 2015 as the Manager of Compliance Risk Analysis. Chris also serves as the Standards Committee Secretary. Previously, Chris worked as a Project Manager for Target Corporation implementing automated distribution systems. Chris served in the US Navy for eight years as a submarine officer. In his spare time, Chris enjoys volunteering as Executive Director of Free Bikes 4 Kidz in Atlanta. He holds a Bachelor of Science in Systems Engineering from the US Naval Academy, and a Master of Science in Nuclear Engineering from Massachusetts Institute of Technology.



Ryan Mauldin (ryan.mauldin@nerc.net)

Ryan Mauldin is a Compliance Assurance Advisor with the NERC Compliance Assurance group. In this position, Ryan is responsible for performing Regional Entity reviews to obtain assurance that the Regional Entity is effectively implementing risk-based CMEP activities and is in compliance with the NERC Rules of Procedure (RoP).

Ryan returned to NERC as a Compliance Assurance Advisor in June 2015. The previous year Ryan had been a senior project manager at GDS Associates, Inc. where he assisted registered entities by performing mock audits and by assisting in development and improvement of their procedures. Prior to joining GDS, he served as a senior registration and certification engineer at NERC and also served as a NERC Compliance Auditor. Before joining NERC, Ryan was a protection and control engineer at MEAG Power. Ryan is NERC Certified as a Reliability Coordinator Operator, holds a Master of Science in Electrical Engineering from the University of Nevada, Las Vegas and a Bachelor of Science in Electrical Engineering from the University of Oklahoma.

Steven Noess (steven.noess@nerc.net)

Director of Compliance Assurance and Program Oversight, North American Electric Reliability Corporation (NERC)

Steven Noess is Director of Compliance Assurance and Program Oversight at the North American Electric Reliability Corporation (NERC) in Atlanta, GA. Previously, he was Director of Standards Development and has held various other roles in both compliance and standards at NERC. Prior to NERC, Steven was an attorney at the Minnesota Legislature, where he advised legislative members and coordinated rulemaking with executive branch agencies. Before becoming an attorney, Steven was an officer in the United States Army, serving in Germany and Iraq in communications and intelligence units. From 2003 to 2004, he deployed to Iraq and was awarded the Bronze Star Medal during combat operations. Steven has a bachelor's of science degree in International Relations and Systems Engineering from the U.S. Military Academy, West Point, NY. He received his law degree from the University of Minnesota Law School, and he is licensed to practice law in Minnesota.



Ryan Stewart (ryan.stewart@nerc.net)

Ryan Stewart joined NERC on July 19, 2010 and is currently the NERC Senior Manager of Registration. In this position, Ryan oversees the day-to-day operations of the NERC Compliance Registry, co-chairs the Regional Organization Registration and Certification Group, and provides NERC staff support to the Industry Organization Registration and Certification Subcommittee of the NERC Compliance and Certification Committee. Prior to this role, Ryan served in two capacities in the NERC Standards Development department as a Manager and Standards Developer. Ryan initiated and implemented NERC's first Internship Program during the summer of 2011. Ryan was a student intern at NERC while attending the George Washington University, where he majored in Systems Engineering and minored in Computer Science and Economics.



Jordan Mallory (jordan.mallory@nerc.net)

Jordan Mallory currently serves as a Standards Developer at NERC. Jordan presently works as the developer on the Modifications to the CIP project. Jordan previously oversaw the development of TPL-004, PRC-005, PER-005, and leads the NERC Standards and Compliance Workshop. She began at NERC in June 2011 in the Atlanta office. Prior to NERC, Jordan worked for MEAG Power. Jordan received her managerial science degree from Georgia State University.



Lauren Perotti (lauren.perotti@nerc.net)

Lauren Perotti is a Counsel at NERC in the Washington, DC office. Prior to joining NERC, Lauren was an associate attorney with the law firm of Haynes and Boone LLP in Washington, DC. She graduated from the George Mason University School of Law in 2009 and has a Bachelor of Arts from Ursinus College.



Barbara Nutter (barbara.nutter@nerc.net)

Barbara Nutter is Manager of Business Support Assurance. Previously, she was Manager of Standards Information. Prior to joining NERC, Barbara was at Southwest Power Pool (SPP) as Manager of Market Design and at OATi as a Project Manager. Prior to OATI, Barbara started at the Midwest ISO in 2000 and worked there for 7 ½ years. She was involved in the Midwest ISO start up in 2001 and the Energy Market start up in 2005. Barbara was Manager of Physical Scheduling and Manager of Information Technology Real-Time Operations. Barbara started her career in the electric utility industry at Allegheny Energy and spent 16 years at Allegheny in various positions.

Barbara received her Bachelor of Arts Degree in Management of Human Resources and Marketing at Seton Hill College in Greensburg, PA.



Ed Kichline (ed.kichline@nerc.net)

Ed Kichline is Senior Counsel and Director of Enforcement Oversight in NERC's Washington, DC office. Ed's team focuses on implementation of the risk-based Compliance Monitoring and Enforcement Program through the review of noncompliance and oversight of the Regional Entities' enforcement activities. Prior to joining NERC in November of 2010, Ed was Senior Counsel at National Grid in the Federal Regulatory group, focusing on federal policy and reliability matters. Ed graduated from Georgetown University Law Center in 1996 and started in the energy field in 1999 while at Hunton & Williams.



Adina Kruppa (adina.kruppa@nerc.net)

Ms. Kruppa joined NERC January 2013 and is currently the Manager of Assurance Oversight and Monitoring. In this capacity, she is responsible for managing multiple activities across the ERO that supports oversight of the Regional Entities and the ERO Enterprise implementation of risk-based compliance monitoring. Ms. Kruppa also develops and delivers training and outreach on risk-based audit techniques and other ERO Enterprise compliance monitoring activities.

Prior to joining NERC, Ms. Kruppa worked in FERC's Division of Audits in the Office of Enforcement. While at FERC, she led a variety of multi-scope FERC-mandated audits within the electric and gas industry. Ms. Kruppa has a B.S. from Edinboro University of Pennsylvania and a M.B.A. from Upper Iowa University with a focus in accounting. She is also a Certified Public Accountant in the state of Virginia.



Helen Nalley (hernalley@southernco.com)

Helen Nalley is the Operations Compliance Director for Southern Company, which has included compliance oversight of Southern Company Transmission and Southern Company Generation organizations. In addition, she has oversight of Records Management, Data Privacy and Protection, Personnel Risk Assessment Programs, and other Southern Company Compliance Programs. Helen has had responsibility for the compliance assurance activities for all NERC Reliability Standards for all Southern Company subsidiaries including implementation of the NERC CIP Standards. She has been active with NERC and the Regions in the development of NERC's Risk-Based Compliance Monitoring and Enforcement

Program approved by FERC. Helen is currently a member of the NERC Certification and Compliance Committee and past Chair of the Compliance Practice Group of the North American Transmission Forum. Prior to assuming her current role in 2005, Helen served as the Compliance and Support Manager of both Miller Steam Plant and E. C. Gaston Steam Plant. Helen has worked in various capacities at Southern Company since 1987. Helen is a graduate of Wake Forest University.



Max Reisinger (maxwell.reisinger@rfirst.org)

Max Reisinger is Counsel in the Enforcement Department at ReliabilityFirst. Max joined ReliabilityFirst in 2014 where he primarily resolves violations of NERC Reliability Standards for a variety of Registered Entities. Prior to joining ReliabilityFirst, Max worked for the Direct Marketing Association in Washington, DC and the Purchasing Department at Ohio State.

Max has a Bachelor of Arts in History and Political Science from The Ohio State University. He received his law degree from The Ohio State University Moritz College of Law and he is licensed to practice law in Ohio.



Jim Stanton (james.stanton@sosintl.com)

Jim Stanton is the Director of Advisory Services. Jim brings more than 30 years of experience in the electric utility industry including plant operations, system operations, market design, RTO development, and reliability standards. His extensive background in the electric power industry has enabled him to assist clients in their efforts to reach and maintain compliance with the reliability standards.

Jim has spent the last five years assisting clients in compliance readiness and risk management efforts through his roles as Principal Advisor at Quanta Technology and Executive Director at SPS Energy. Prior to those roles, Jim was a Director/Project Manager at ICF International where he co-founded a new practice to assist clients with all aspects of NERC Reliability Standards compliance, recruiting, training and coordinating a staff of six compliance specialists.

Jim was a charter member of the NERC Standards Committee and continues to serve on the NERC Compliance and Certification Committee.

His experience covers all areas of NERC compliance services including procedure development, training, gap analyses, risk-based assessments, self-reports and mitigation plans, and internal compliance programs.



Michael Puscas (mpuscas@iso-ne.com)

Michael is currently the Compliance Manager at Independent System Operator of New England (ISO-NE) in Holyoke, MA. Prior to that he was the CIP Compliance Manager at Eversource in Berlin, CT. Prior to Eversource he was the Director of Compliance at United Illuminating in New Haven, CT. He's been involved in compliance-related work since 2003. He's active in multiple compliance-related committees at the North American Transmission Forum (NATF), NERC's Standards Efficiency Review (SER) Operations Planning team, and the ISO/RTO Council's Standard Review Committee (SRC).



Jennifer Flandermeyer (Jennifer.Flandermeyer@kcpl.com)

Ms. Flandermeyer works for Evergy, Kansas City Power and Light and Westar Energy (Evergy companies). She joined the company in 1999 bringing with her several years of finance and accounting experience and knowledge of the energy industry. During that time, she held positions in Internal Audit, SOX Implementation Team Project Manager and Strategic Business Planning in Transmission Delivery Operations. In 2009, she accepted the opportunity leading the team responsible for the company's FERC and NERC compliance. In that capacity, she has been responsible for the company-wide regulatory compliance function now expanded to include additional regulatory bodies. In 2015, the position expanded to focus on policy and enforcement matters for FERC and NERC as well as other federal agencies. Her team works in partnership with a team focused on implementation and assurance oversight at the direction of the Chief Compliance Officer. She continues to hold this role in the company covering BES responsibilities for much of the state of Kansas and a large portion of the state of Missouri.

Ms. Flandermeyer holds a Bachelor of Science degree in Accountancy from William Jewell College, a Master's Degree in Business Administration from Rockhurst University and certifications in Risk Management as well as Compliance and Ethics. Ms. Flandermeyer is the Chair of the Southwest Power Pool's Reliability Compliance Working Group and Chair of the NERC Compliance and Certification Committee. She is a member of the NERC Standards Committee, Vice Chair of the NERC Standards Committee Process Subcommittee and serves on the CIP Modifications Standards Drafting Team. Ms. Flandermeyer is active in several organizations such as EEI's Reliability Executive Advisory Committee and serves as a Core Team member of the North American Transmission Forum Compliance Practices Group.



Lonnie Ratliff (lonnie.ratliff@nerc.net)

Lonnie is a Senior Manager, Cyber and Physical Security Assurance in the NERC Grid Assurance group. In this position, Lonnie is responsible for providing oversight, guidance, and coordination in managing programs and processes to monitor, review, and evaluate program effectiveness of Electric Reliability Organization (ERO) Enterprise implementation of risk-based compliance monitoring and adherence to the NERC Rules of Procedure, Compliance Monitoring and Enforcement Program, and approved delegation agreements.

In July 2017, Lonnie joined NERC's Grid Assurance group. Prior to joining NERC, Lonnie was the Manager, Entity Assessment and Mitigation (EAM) at SERC Reliability Corporation. Lonnie led a team that was responsible for assessing non-compliance scope and risk posed to the Bulk Power System. In addition, his team was responsible for conducting registered entity Inherent Risk Assessments and ensuring appropriate mitigation activities were applied for each non-compliance.



Jodirah Green (jgreen@acespower.com)

Jodirah Green is Managing Director of Reliability Services for Alliance for Cooperative Energy Services (ACES). Mr. Green joined ACES in April 2017. He is currently responsible for providing ACES' Generation and Transmission Cooperative Members and Customers with compliance expertise which includes tracking and disseminating information regarding NERC standards. Jodirah also leads compliance support engagements, mock audits, program development, and program maturity projects. He manages the training support team at ACES that provides NERC and other regulatory and reliability training to ACES Members. Prior to joining ACES, Jodirah worked at Progress Energy/Duke Energy for 16 years. He held engineering, supervisory, and management positions in power operations. Jodirah has also built extensive experience in NERC CIP compliance that covers Program Development, Audit Experience, NERC CIP Physical Security Controls Implementation and NERC CIP Cyber Security Implementation.



LaTroy Brumfield (lbrumfield@atcllc.com)

Mr. Brumfield is an employee at American Transmission Company LLC (ATC) where he has held his current position as the Sr. Policy and Standards Strategist since July 2017. In this role, Mr. Brumfield is responsible for ensuring the appropriate execution of ATC's NERC reliability standards compliance program and managing regional and national regulatory relationships.

Prior to joining ATC Mr. Brumfield was employed at Wisconsin Energy Corporation (WEC) from 2012 to 2017. WEC is an electric and natural gas utility with generation and distribution operations in Wisconsin, Illinois, and Michigan's Upper Peninsula. While at WEC Mr. Brumfield held various leadership roles in the Operations and Engineering-Major Projects work group and the operations support group where he was responsible for managing regulatory obligations, standards development, compliance, and asset management. During his time at WEC, Mr. Brumfield served as Chair of the International Right-of-Way Association's (IRWA) - Wisconsin Department of Transportation (WisDOT), liaison committee. Mr. Brumfield utilized the IRWA forum to facilitate discussions related to standards interpretation and standards execution by a group of utility and governmental employees focused on the reliable design, construction, operation, and maintenance of electric and gas facilities within state owned Rights-of-way.

Mr. Brumfield is a Subgroup chair and active member of the NERC Standards Efficiency Review Team. As a member of the team Mr. Brumfield was asked to evaluate the NERC Reliability Standards using a risk-based approach to identify potential efficiencies through retirement or modification of Reliability Standard Requirements.

Mr. Brumfield holds a Bachelor's of Science in Electronics Engineering Technology, a Master's of Science in Engineering Management and a Master's degree in Business Administration from the Milwaukee School of Engineering University.



Wade Smith (wsmith@aep.com)

Wade Smith is Senior Vice President Grid Development, AEP Transmission. In this position, he leads AEP Transmission's planning, engineering, project management, construction, and real-time operation teams.

From 2010 – 2015, Wade served as President & COO, AEP Texas. He led two transmission and distribution wires companies serving more than one million customers in Texas. In 2008, he was Vice President, Transmission Engineering and Project Services, AEP Service Corporation.

Wade's earlier roles include Director, Gas Turbine and Joint Venture Operations where he was responsible for gas turbine and wind generating facilities; and Executive Director, IPP and Wind with responsibility for 12 IPP and wind generation projects in the United States and Mexico. He also held plant management, engineering, and project roles.

Wade earned a bachelor of science degree in mechanical engineering from Texas Tech University in Lubbock, Texas, a master of business administration degree from Abilene Christian University in Abilene, Texas, and is a graduate of The Executive Program-Darden School of Business at the University of Virginia. In 2014 he received the Distinguished Engineer Award at Texas Tech University and was inducted into the school's Academy of Mechanical Engineers in 2016.

Acronyms and Initialisms

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Acronym	Stands for:
AC	Alternating Current
ACE	Area Control Error
ADI	ACE Diversity Interchange
AFC	Available Flowgate Capability
AFN	Abnormal Frequency Notification
ATC	Available Transfer Capability
ATF	After the Fact
AGC	Automatic Generation Control
AIE	Area Interchange Error
ALM	Active Load Management
ALR	Adequate Level of Reliability
AML	Actively Monitored List
AMR	Automatic Meter Reading
ANSI	American National Standards Institute
APX	Automatic Power Exchange
ARE	Affected Regional Entity
ARS	Automatic Reserve Sharing
ATC	Available Transmission Capacity
ATEC	Automatic Time Error Correction
AVR	Automatic Voltage Regulator
AWR	Alignment Working Group
BA	Balancing Authority
BAL	Resource and Demand Balancing (Standards Family)
BAAL	Balancing Authority ACE Limit
BES	Bulk Electric System
BOT	Board of Trustees
BOTCC	Board of Trustees Compliance Committee
BPS	Bulk Power System
CA	Control Area or Critical Asset
CAN	Compliance Application Notice
CAP	Corrective Action Process
CB	Circuit Breaker
CBM	Capacity Benefits Margin
CCA	Critical Cyber Asset
CCC	Compliance and Certification Committee
CCP	Critical Constrained Path

Acronym	Stands for:
CCVT	Capacitor-coupled voltage transducer
CEA	compliance enforcement authority
CEAP	Cost Effective Analysis Process
CEH	Continuing Education Hour
CEI	Compliance Enforcement Initiative
CETL	Capacity Emergency Transfer Limit
CF	Coordinated Flowgates
CFR	Coordinated Functional Registration
CIP	Critical Infrastructure Protection (Standards Family)
CIPC	Critical Infrastructure Protection Committee
CM	Congestion Management
CMEP	Compliance Monitoring and Enforcement Program
COM	Communications (Standards Family)
CO	Coordinated Oversight
COO	Continuity of Operations
CPS	Control Performance Standard
CT	Current Transformer
CUG	Compliance User(s') Group
CVI	Compliance Violation Investigation
CVT	Capacitive Voltage Transformer
DADS	Future Demand Availability Data System
DAM	Day Ahead Market
DB	Data Base
DCA	Designated Congestion Areas
DCLM	Direct Control Load Management
DCS	Disturbance Control Standard
DF	Distribution Factor
DFR	Digital Fault Recorder
DHS	Department of Homeland Security
DME	Disturbance Monitoring Equipment
DP	Distribution Provider
DSM	Demand Side Management
DTS	Dispatcher Training Simulator
EA	Event Analysis
EAIE	Event Analysis and Information Exchange
EDT	Eastern Daylight Time
EI	Edison Electric Institute
EHV	Extra High Voltage
EMP	Electromagnetic Pulse
EMS	Energy Management System
EOP	Emergency Preparedness and Operations (Standards Family)
EPRI	Electric Power Research Institute
ERO	Electric Reliability Organization

Acronym	Stands for:
ES-ISAC	Electricity Sector Information Sharing and Analysis Center
ESP	Electronic Security Perimeter
ETC	Existing Transmission Commitments
ETIN	Electronic Transmission Information Network
FAC	Facilities Design, Connections, and Maintenance (Standards Family)
FAT	Factory Acceptance Test
FBA	Flow-Based Analysis
FCITC	First Contingency Incremental Transfer Capability
FCL	Fault Current Limiter
FCTTC	First Contingency Total Transfer Capability
FDR	Frequency Data Recorder
FEMA	Federal Emergency Management Administration
FERC	Federal Energy Regulatory Commission
FFT	Find, Fix and Track (sometimes FFTR for Find, Fix, Track and Report)
FM	Functional Model
FOH	Forced Outage Hours
FOIA	Freedom of Information Act
FPA	Federal Power Act
FRCC	Florida Reliability Coordinating Council (Regional Entity)
GADS	Generation Availability Data System
GCIR	Generation Capability Import Requirement
GLDF	Generator-to-Load Distribution Factor
GMD	Geomagnetic Disturbance
GMD	Geometric Mean Distance
GO	Generator Owner
GOL	Generator Operator Limit
GOP	Generator Operator
GSF	Generator Shift Factor
GSU	Generator Step-up Transformer
GTDF	Generation Transfer Distribution Factor
GUI	Graphical User Interface
GWh	Gigawatt Hours
HCA	Host Control Area
HEMP	High-Altitude Electromagnetic Pulse
HI	Hourly Interruptible
HILF	High-Impact, Low-Frequency
HVDC	High Voltage Direct Current
Hz	Hertz

Acronym	Stands for:
IA	Interchange Authority
IAIP	Information Analysis and Infrastructure Protection
IBM	International Business Machines
ICCP	Inter-Control Center Protocol
ICE	Internal control evaluation
ICP	Internal Compliance Program
IDC	Interchange Distribution Calculator
IDF	Interchange Distribution Factor
IEEE	Institute of Electrical and Electronics Engineers
IESO	Independent Electricity System Operator
IMM	Independent Market Monitor
INPO	Institute of Nuclear Power Operations
INT	Interchange Scheduling and Coordination (Standards Family)
IOS	Interconnection Operations Services
IOU	Investor Owned Utility
IP	Internet Protocol
IPP	Independent Power Producer
IPX	Independent Power Exchange
IRL	Interconnection Reliability Limit
IRO	Interconnection Reliability Operations and Coordination (Standards Family)
IROL	Interconnection Reliability Operating Limit
IRP	Integrated Resource Plan
ISAC	Information Sharing and Advisory Center
ISC	Independent Security Center
ISO	Independent System Operator
JOA	Joint Operating Agreement
JTSIN	Joint Transmission System Information Network
KRSSC	Key Reliability Standards Spot Check
kV	kilovolts
LCO	Limited Condition of Operation
LDC	Local Distribution Company
LIFO	Last In – First Out
LMP	Local Marginal Pricing
LOOP	Loss of Off-site Power
LOP	Loss of Potential
LRE	Lead Regional Entity
LSE	Load-Serving Entity
LSF	Load Shift Factor
LTC	Load Tap Changer
LTRA	Long Term Reliability Assessment

Acronym	Stands for:
MM	Market Monitor
MOD	Modeling, Data, and Analysis (Standards Family)
MP	Market Participants
MRC	Member Representatives Committee
MRRE	Multi-Region Registered Entity
MRO	Midwest Reliability Organization (Regional Entity)
MTU	Master Terminal Unit
MUST	Maximizing Utility System Transfer
MVA	MegaVoltAmperes
MVAR	Megavar
MW	Megawatts
MWh	Megawatt hours
MVCD	Minimum Vegetation Clearance Distances
NAESB	North American Energy Standards Board
NCF	Net Capacity Factor
NCR	NERC Compliance Registry
NCSD	National Cyber Security Division
NDA	Non-Disclosure Agreement
NEAT	NERC Event Analysis Tool
NEB	National Energy Board (Canada)
NEM	National Electricity Market
NEPA	National Energy Policy Act of 1992
NERC	North American Electric Reliability Corporation
NESC	National Electric Safety Code
NHC	National Hurricane Center
NIAC	National Infrastructure Advisory Council
NIPC	National Infrastructure Protection Center
NIPP	National Infrastructure Protection Plan
NNL	Native and Network Load
NOP	Notice of Penalty
NOPR	Notice of Proposed Rulemaking
Nox	Nitrous Oxides
NPCC	Northeast Power Coordinating Council (Regional Entity)
NPIR	Nuclear Plant Interface Requirements
NRC	Nuclear Regulatory Commission
NRECA	National Rural Electric Cooperative Association
NREL	National Renewable Energy Laboratory
NUC	Nuclear (Standards Family)
NUG	Non-Utility Generator
OAG	Open Access Gateway
OASIS	Open Access Same Time Information System

Acronym	Stands for:
OATT	Open Access Transmission Tariff
OC	Operating Committee
OL	Operating Limit
OP	Operating Procedures
OPF	Optimal Power Flow
ORCG	Organization Registration and Certification Group
ORCS	Organization Registration and Certification Subcommittee
OSL	Operating Security Limit
OTC	Operating Transfer Capability
OTDF	Outage Transfer Distribution Factor
PA	Planning Authority
PC	Planning Committee or Planning Coordinator
PCC	Primary Compliance Contact
PCO	Primary Compliance Officer
PCB	Power Circuit Breaker
PER	Personnel Performance, Training, and Qualifications (Standards Family)
PLC	Programmable Logic Controller
POE	Principles of Excellence
POD	Point of Delivery
POR	Point of Receipt
POTT	Permissive Overreach Transfer Trip
PR	Periodic Review
PRC	Protection and Control (Standards Family)
PSC	Public Service Commission
PSDR	Power System Data Recorder
PSE	Purchasing-Selling Entity
PSM	Power System Measurements
PSP	Physical Security Perimeter
PSS	Power System Stabilizer
PSS/E	Power System Simulator/Electric
PT	Potential Transformer
PTDF	Power Transfer Distribution Factor
PTP	Point to Point Transmission Service
PU	Per Unit
PUC	Public Utilities Commission
PUHCA	Public Utilities Holding Company Act
PURPA	Public Utilities Regulator Policy Act
PV	Potential Violation
PX	Power Exchange
QF	Qualified Facility
RA	Reliability Authority
RAI	Reliability Assurance Initiative

RAPA	Reliability Assessment and Performance Analysis
RAS	Remedial Action Scheme
RBAM	Risk-Based Assessment Methodology
RBB	Registered Ballot Body
RBS	Results-Based Standards
RC	Reliability Coordinator
RCIS	Reliability Coordinator Information System
RE	Regional Entity
RFC	ReliabilityFirst Organization (Regional Entity)
RFI	Request for Interchange
RFP	Request for Proposal
RISC	Reliability Issues Steering Committee
RMS	Root Mean Square
ROP	Rules of Procedure
ROW	Right-of-Way
RP	Resource Planner
RPM	Revolutions per Minute
RSAW	Reliability Standards Audit Worksheets
RSDP	Reliability Standards Development Plan
RSG	Reserve Sharing Group
RTCA	Real-Time Contingency Analysis
RTU	Remote Terminal Unit
SAFFNR	Situational Awareness for FERC, NERC, and the Regions
SAR	Standard Authorization Request
SC	Standards Committee
SCADA	Supervisory Control and Data Acquisition
SDT	Standard Drafting Team
SDX	System Data Exchange
SE	State Estimator
SERC	SERC Reliability Corporation (Regional Entity)
SMD	Solar Magnetic Disturbance
SME	Subject Matter Expert
SOL	System Operating Limits
SOTC	Standards Oversight and Technology Committee
SPIG	Standards Process Input Group
SPM	Standard Processes Manual
SPOC	Single Point of Contact
SPP	Southwest Power Pool RE (Regional Entity)
SPS	Special Protection Systems / Schemes
SRI	System Risk Index
SSVT	Station Services voltage transformer
STDB	Spare Transformer Database
SVC	Static Var Compensator

Acronym	Stands for:
TA	Transmission Administrator
TADS	Transmission Availability Data System
TFC	Total Flowgate Capability
TDF	Transfer Distribution Factor
TFE	Technical Feasibility Exception
TLR	Transmission Loading Relief
TO	Transmission Owner
TOP	Transmission Operator or Transmission Operations (Standards Family)
TP	Transmission Planner or Transmission Provider
TPF	Transaction Participation Factor
TPL	Transmission Planning (Standards Family)
TRE	Texas Reliability Entity (Regional Entity)
TRM	Transmission Reliability Margin
TSIN	Transmission System Information Network
TSP	Transmission Service Provider
TSR	Transmission Service Reservation
TTC	Total Transfer Capability
TWh	Terawatt hour (trillion watts hours)
UFLS	Under-Frequency Load Shedding
URC	Utilities Regulatory Commission
UVLS	Under Voltage Load Shedding
VAR	Voltage and Reactive (Standards Family)
VPN	Virtual Private Network
VRF	Violation Risk Factor
VSA	Voltage and Stability Analysis
VSL	Violation Severity Level
WACS	Wide-Area Control System
WECC	Western Electricity Coordinating Council (Regional Entity)

Project Tracking Spreadsheet



[SUMMARY](#)

Updated: 7/9/2018

Nom-SAR/DT QR Posting-SAR or PR Posting-Comment Only Posting Com

[Tutorial Video \(11 min\)](#)
[Click here to report errors or issues](#)

[Baseline/Current](#)

[HOME](#)

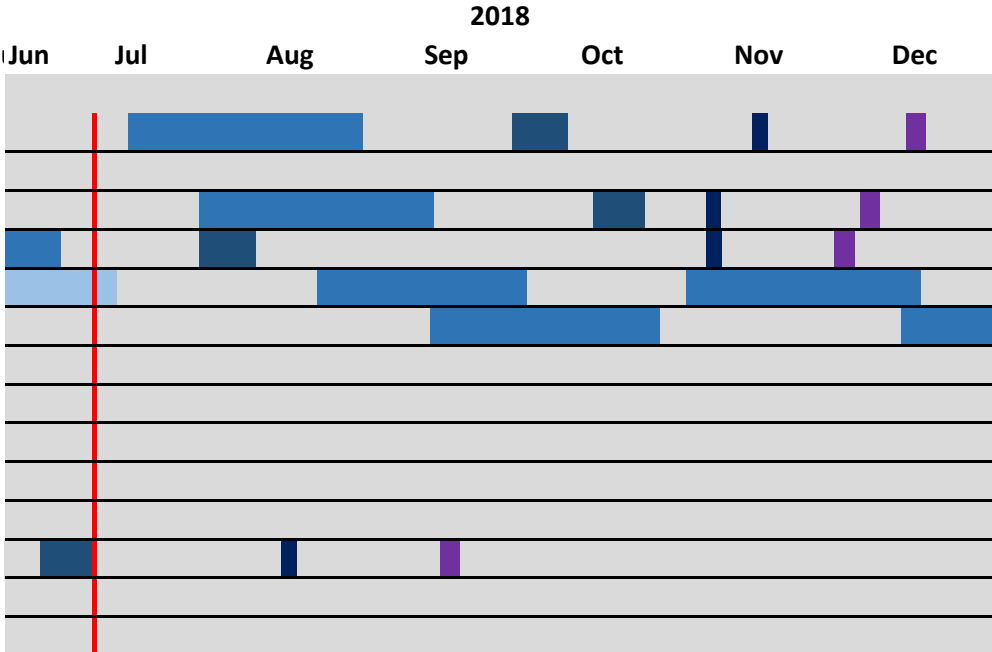
DO NOT SORT (Filtering Ok) Early/(Late) Days (Filter) (Filter)

U Project (Filter)

Deliverables (Filter)

Days (Filter) (Filter)

Ye	2015-09 - Establish and Communicate System O	FAC-010-3, FAC-011-3, and FAC	(180) Current
Ye	2015-09 - Establish and Communicate System O	IROL Stds.	N/A
Ye	2015-10 - Single Points of Failure TPL-001	TPL-001-5	(280) Current
G	2016-02 - Modifications to CIP Standards	Directives, Control Center Com	(286) Current
G	2016-02 - Modifications to CIP Standards	Address TO Control Centers Pe	(465) Current
G	2016-02 - Modifications to CIP Standards	Address all remaining V5TAG is	No schedule N/A
G	2017-01 - Modifications to BAL-003-1.1	BAL-003-2	Proposed
Ye	2017-02 - Modifications to Personnel Performan	PER-003-2, retire PER-004-2	24 Proposed
Ye	2017-03 - Periodic Review of FAC-008-3 Standar	Periodic Review Recommendation	N/A
Ye	2017-04 - Periodic Review of Interchange Sched	Periodic Review Recommendation	N/A
Ye	2017-05 - Project 2017-05 NUC-001-3 Periodic R	Periodic Review of NUC-001-3	N/A
Ye	2017-06 - Project 2017-06 Modifications to BAL-	BAL-002-3	(43280) Proposed
G	2017-07 - Stds Alignment with Registration	Standards with PSE, IA, or LSE	Proposed
Ye	2018-01 - Canadian-specific Revisions to TPL-007	TPL-007-3	Proposed



Projected Posting Schedule

Week of July 9

BES Reference Document

- 30-day informal comment period

Week of July 16

Project 2015-09 Establish and Communicate System Operating Limits

- 45-day formal comment period and additional ballots

Week of July 23: None at this time

Week of July 30

Project 2016-02 Modifications to CIP Standards | CIP-012-1

- 10-day final ballot

Project 2015-10 Single Points of Failure

- 45-day formal comment period and additional ballots

Week of August 6: None at this time

Week of August 13: None at this time

*Note that some of the dates in the chart on the following page are estimates and are subject to change.

	7/9	7/16	7/23	7/30	8/6	8/13	Closing Date
BES Reference Document							
Cost Effectiveness Pilot							
2015-09 System Operating Limits FAC-010-3							
2015-09 System Operating Limits FAC-011-4							
2015-09 System Operating Limits FAC-014-3							
2015-09 System Operating Limits FAC-015-1							
2015-09 System Operating Limits - (System Operating Limit and SOL Exceedance Definitions)							
2015-10 Single Points of Failure TPL-001-5 and Implementation Plan							
2016-02 Modifications to CIP Standards CIP-012-1							
2016-02 Modifications to CIP Standards – Control Center Definition and Implementation Plan							
2016-02 Modifications to CIP Standards CIP-002-6							
2016-02 Modifications to CIP Standards IROL Modifications to CIP-002 SAR	Closes 7/13						
2016-02 Modifications to CIP Standards FERC Order No. 843 (Malicious Code Example) SAR	Closes 7/13						
2016-02 Modifications to CIP Standards Virtualization and V5TAG							
2017-01 Modifications to BAL-003-1.1							
2017-02 – Modifications to Personnel Performance, Training, and Qualifications Standards PER-003-2 and Implementation Plan							
Project 2017-03 FAC-008 Periodic Review							
Project 2017-04 Periodic Review of Interchange Scheduling and Coordination Standards INT-004, INT-006, INT-009, and INT-010 Periodic Review							
Project 2017-05 NUC-001-3 Periodic Review							
Project 2017-06 Modifications to BAL-002-2	Closes 7/16						
Project 2017-07 Standards Alignment with Registration							
Functional Model Advisory Group							
Standards Efficiency Review SAR	Closes 7/10						
Standards Grading							
Revisions to the NERC Standard Processes Manual (Draft 3)					8/9		

	Informal comment period
	Formal comment period
	Nomination solicitation
	30-day comment period
	45-day comment period and ballot/additional ballot
	Final ballot

Standards, Compliance, and Enforcement Bulletin

July 2–8, 2018

INSIDE THIS EDITION

[Active Standards Postings](#) | [Other Active Comment Periods](#) | [Standards News](#) | [General Compliance and Enforcement News](#) | [Other News](#) | [Standards Subject to Future Enforcement](#) | [Board of Trustees and FERC Action](#) | [Upcoming Events](#) | [About the SC&E Bulletin](#)

ACTIVE STANDARDS POSTINGS

Current and Upcoming Ballots (ballot periods close at 8:00 p.m. Eastern)

Project	Action	Start Date	End Date
Project 2016-02 – Modifications to CIP Standards CIP-012-1	Additional Ballot and Non-binding Poll	06/22/18	07/02/18

Join Ballot Pools (ballot pool windows close at 8:00 p.m. Eastern)

Project	Action	Start Date	End Date
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Posted for Comment

Project	Action	Start Date	End Date
Project 2016-02 – Modifications to CIP Standards CIP-012-1 NEW A draft RSAW is posted through July 2, 2018. Submit comments to RSAWfeedback@nerc.net .	Comment Period	05/18/18	07/02/18
Standards Efficiency Review SAR	Comment Period	06/07/18	07/10/18

Project 2016-02 – Modifications to CIP Standards FERC Order No. 843 (Malicious Code Sample) SAR	Comment Period	06/14/18	07/13/18
Project 2016-02 – Modifications to CIP Standards IROL Modifications to CIP-002 SAR	Comment Period	06/14/18	07/13/18

OTHER ACTIVE COMMENT PERIODS

Posted for Comment			
Posting	Action	Start Date	End Date
<p>Comment Period Open for Power Plant Model Verification for Inverter-Based Resources Draft Reliability Guideline: The NERC Power Plant Modeling and Verification Task Force (PPMVTF) developed the draft Reliability Guideline: Power Plant Model Verification for Inverter-Based Resources. This Reliability Guideline supports recommendations in the ERO Risk Priorities Report to address potential reliability impacts of the changing resource mix by developing guidance and recommended practices for these verification tests for inverter-based resources. The guideline covers many of the potential tests that may be needed to develop or verify dynamic models related to the activities of MOD-026-1 and MOD-027-1. The material presented is applicable to Generator Owners, Generator Operators, Planning Coordinators, Transmission Planners, Transmission Operators, Reliability Coordinators, testing engineers, and other subject matter experts of the NERC MOD standards pertaining to model verification and capability testing. The PC reviewed the initial draft of the guideline and approved it to be posted for industry comment.</p>	Submit comments via email .	06/11/18	07/27/18

<p>Comment Period Open for Proposed Retirement of Regional Reliability Standard IRO-006-TRE-1: Texas RE has requested NERC to post the proposed retirement of Regional Reliability Standard IRO-006-TRE-1 - IROL and SOL Mitigation in the ERCOT Region for industry review and comment as provided by the NERC Rules of Procedure. Documents and information about this project are available on the Texas RE’s Standards page.</p>	<p>Submit comments using the Standards Balloting and Commenting System. If you experience any difficulties using the electronic form, contact Nasheema Santos.</p>	<p>06/21/18</p>	<p>08/06/18</p>
<p>Comment Period Open for Regional Reliability Standards VAR-001-5: Western Electricity Coordinating Council (WECC) requested that NERC post VAR-001-5 - Voltage and Reactive Control for industry review and comment in accordance with the NERC Rules of Procedure.</p> <p>The drafting team made the following changes:</p> <ul style="list-style-type: none"> • In E.A.14 “Area” was corrected to “area.” • E.A.15 and associated elements were eliminated because the reliability-related task required in E.A.15 is contained as a lesser included task of VAR-002-4.1 Generator Operation for Maintaining Network Voltage Schedules, Requirement R2, Part 2.3. • Measures were updated and relocated matching current NERC conventions, and “shall” was replaced with “will”. • Typographical errors in VSL Table for E.A.17 were corrected. • The format and numbering were updated. <p>The standard was posted for comment twice, the most recent period being from December 22, 2017 – January 22, 2018, and the comments received can be viewed here.</p>	<p>Submit comments using the electronic form. If you experience any difficulties in using the electronic form, contact Nasheema Santos.</p>	<p>06/22/18</p>	<p>08/06/18</p>
<p>NEW Comment Period Open for Revisions to the NERC Standard Processes Manual: A 45-day formal comment period is open</p>	<p>Submit comments using the Standards Balloting and Commenting System. If you</p>	<p>06/25/18</p>	<p>08/09/18</p>

<p>through August 9, 2018 for revisions to the NERC Standard Processes Manual, Appendix 3A to the NERC Rules of Procedure. An additional ballot on the revisions to the Standard Processes Manual will be conducted July 31–August 9, 2018.</p> <p>For information on the Standards Development Process, refer to the Standard Processes Manual.</p>	<p>experience issues navigating the system, contact Nasheema Santos.</p>		
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STANDARDS NEWS

There is no additional Standards news to report for this week.

Quick Links

- [Register in the SBS](#)
- [Projected Standards Posting Schedule](#)
- [Project Tracking Spreadsheet](#)
- [Standards Related Questions – Single Portal](#)
- [2017–2019 Reliability Standards Development Plan](#)
- [Quality Review Application](#)
- [One-Stop Shop \(Status, Purpose, Implementation Plans, FERC Orders, RSAWs\)](#)

GENERAL COMPLIANCE AND ENFORCEMENT NEWS

Newly Effective Standards

On July 1, 2018, the following standards became effective:

- [CIP-009-6 – Cyber Security — Recovery Plans for BES Cyber Systems \(Requirement 2.3\)](#);
- [CIP-010-2 – Cyber Security — Configuration Change Management and Vulnerability Assessments \(Requirements 3.2, 3.2.1, 3.2.2\)](#);

Quick Links

- [Risk-Based CMEP](#)
- [CIP V5 Transition Program](#)
- [ERO Enterprise Program Alignment Process](#)
- [Consistency Reporting Tool \(EthicsPoint\)](#)
- [Risk-Based Registration Initiative](#)
- [Reliability Standard Audit Worksheets](#)
- [Enforcement & Mitigation: Enforcement Actions](#)

- [MOD-026-1 – Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions \(Requirements 2, 2.1–2.1.6\);](#)
- [MOD-027-1 – Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions \(Requirements 2, 2.1–2.1.5\);](#)
- [PRC-025-2 – Generator Relay Loadability;](#)
- [TOP-001-4 – Transmission Operations;](#) and
- [TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events \(Requirement 2\).](#)

OTHER NEWS

NERC Posts Summary on ERO Enterprise CMEP Technology Project

As the ERO Enterprise matured to a risk-based approach in its regulatory posture, a more comprehensive system to manage and analyze compliance monitoring and enforcement information became necessary. The CMEP Technology Project began in 2014 to meet that need with the goal of improving and standardizing processes in the Compliance Monitoring and Enforcement Program (CMEP) across the ERO Enterprise. The new project will align the business processes of NERC and the Regional Entities on a single platform; improve documentation, sharing and analysis of compliance work activities; and make CMEP activities more effective and efficient across the ERO Enterprise; thus enhancing the reliability and security of the grid. For more information, please see the [full project summary](#) on the [CMEP Technology Project page](#).

STANDARDS SUBJECT TO FUTURE ENFORCEMENT

The following standards are subject to future enforcement. Please refer to the [U.S. Effective Dates page](#) for more detail:

U.S. Effective Date	Standard(s)
<p>July 1, 2018 NEWLY EFFECTIVE</p>	<p>CIP-009-6 – Cyber Security — Recovery Plans for BES Cyber Systems (Requirement 2.3); CIP-010-2 – Cyber Security — Configuration Change Management and Vulnerability Assessments (Requirements 3.2, 3.2.1, 3.2.2); MOD-026-1 – Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions (Requirements 2, 2.1–2.1.6);</p>

	MOD-027-1 – Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions (Requirements 2, 2.1–2.1.5);
	PRC-025-2 – Generator Relay Loadability
	TOP-001-4 – Transmission Operations
	TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events (Requirement 2)
September 1, 2018	--
January 1, 2019	BAL-005-1 – Balancing Authority Control
	FAC-001-3 – Facility Interconnection Requirements
	TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events (Requirement 5, 5.1–5.2)
April 1, 2019	EOP-004-4 – Event Reporting
	EOP-005-3 – System Restoration from Blackstart Resources
	EOP-006-3 – System Restoration Coordination
	EOP-008-2 – Loss of Control Center Functionality
January 1, 2020	CIP-003-7 – Cyber Security – Security Management Controls
	PRC-026-1 – Relay Performance During Stable Power Swings (Requirements 2–4)
July 1, 2020	PRC-002-2 – Disturbance Monitoring and Reporting Requirements (50% compliance for Requirements 2–4, 6–11)
January 1, 2021	PRC-012-2 – Remedial Action Schemes
	TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events (Requirements 6, 6.1–6.4)
January 1, 2022	TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events (Requirements 3,4,7)
July 1, 2022	PRC-002-2 – Disturbance Monitoring and Reporting Requirements (100% compliance for Requirements 2–4, 6–11)

BOARD OF TRUSTEES AND FERC ACTION

There is no additional Board or FERC action to report for this week.

UPCOMING EVENTS

For information about other NERC events, such as meetings and conference calls for standard drafting teams, other standing committees, subcommittees, task forces, and working groups, please refer to the [NERC calendar](#).

Workshops and Conferences

- 2018 NERC Standards and Compliance Workshop – July 24–25, 2018, Columbus, Ohio | [In-person Registration](#) | [Webinar Workshop Registration](#) | [Hotel Registration](#) | [Agenda](#)
- Monitoring and Situational Awareness Technical Conference – October 2–3, 2018, Carmel, Indiana | **Registration Information Coming Soon**
- GridSecCon 2018 – October 15–19, 2018, Las Vegas, Nevada | **Registration Information Coming Soon**

Webinars

There are no webinars currently scheduled.

Standing Committee Meetings and Conference Calls

- Member Representatives Committee Pre-Meeting Conference Call and Informational Webinar – 11:00 a.m.–Noon Eastern, July 18, 2018 | [Register](#)
- Standards Committee Conference Call – 1:00–3:00 p.m. Eastern, July 18, 2018 | [Register](#)
- Board of Trustees Committees, Members Representatives Committee, and Board of Trustees Meetings – August 15–16, 2018, Calgary, Canada | [Meeting Registration and Hotel Information](#)

Standard Drafting Team Meetings and Conference Calls

The [Standards calendar](#) provides dial-in information for the in-person meetings below. The calendar also provides information about conference calls that drafting teams may hold in addition to in-person meetings.

- Project 2016-02 – Modifications to CIP Standards Drafting Team Meeting – July 10–12, 2018, Salt Lake City, UT | [Register](#)
- [2018 Periodic Review Standing Review Team Standards Grading](#) – 8:30 a.m.–4:30 p.m. Eastern, July 19, 2018, Atlanta, GA | [Register](#)
- Project 2018-01 – Canadian-specific Revisions to TPL-007-2 Drafting Team Meeting – July 31–August 1, 2018, Montreal, Québec Canada | [Register](#)

ABOUT THE STANDARDS, COMPLIANCE, AND ENFORCEMENT BULLETIN

This weekly bulletin compiles a list of standards, compliance, and enforcement projects with actionable deadlines, as well as upcoming events, recently posted resources, other NERC documents posted for comment, and other relevant news and information. Please email [Amy Desselle](#) with feedback on this bulletin. The current bulletin and old bulletins are available under “Program News” on both the [Standards home page](#) and the [Compliance & Enforcement home page](#).

If you would like to receive this bulletin or be added to the distribution list for a particular project, please contact [Sandy Shiflett](#). For more information about any of the compliance news listed in the bulletin, please contact [Tiffany Whaley](#).

NERC News

June 2018

Inside This Issue

Compliance

[Updates to Compliance Guidance Documents](#)

[Newly Effective Standards](#)

[ERO Enterprise Program Alignment Process Resources Updated](#)

[NERC Posts Revised Registered Entity Self-Report and Mitigation Plan User Guide](#)

Reliability Risk Management

[Lessons Learned Posted](#)

Standards

[Webinar Resources Posted](#)

Upcoming Events

Regional Entity Events

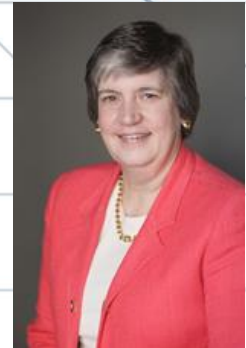
Filings | Careers

NERC Articles

Executive Management Spotlight – Janet Sena

FERC Conference to Examine Grid Reliability, Resilience, Security

NERC leaders are planning their participation in the Federal Energy Regulatory Commission's annual review of pressing issues for reliability and security of the bulk power system on July 31. Led by FERC commissioners, the [Reliability Technical Conference](#) assembles North America's top reliability experts from industry, state and federal government as well as research and technical communities to provide their expertise on a wide range of topics.



The conference agenda focuses on four main topics:

- Panel I: The Changing ERO Enterprise, Standards and Reliability
- Panel II: Advancing Reliability and Resilience of the Grid
- Panel III: Managing the New Grid
- Panel IV: Addressing the Evolving Cybersecurity Threat

Panel I will discuss the trends and risks identified in NERC's [State of Reliability 2018](#), as well as NERC priorities over the next several years. FERC also asked for input on the Standards Efficiency Review, Western Interconnection issues and a discussion of how the ERO model has evolved over the years, including an update on Mexico.

Panel II focuses on advancing reliability and resilience of the grid — a topical issue in policy circles. This panel will address several issues related to the order FERC issued in January (Docket No. AD18-7-000) seeking input on the resilience of the bulk power system. [Continued on page 2](#)

Headlines

[MRO Board Appoints Sara Patrick President, CEO](#)

[Grid Shows Improved Resilience, Decreased Protection Systems Misoperations and Advanced Risk Management](#)

[Robb Speaks on Security at EIS Summit](#)

Conference (cont'd)

There will be a specific emphasis on NERC Reliability Standards, adequate level of reliability and opportunities for NERC and the Regional Entities to work with states and other jurisdictions on resilience of the grid.

NERC, the Regional Entities, industry and FERC have focused a great deal on changes in the generation resource mix. Managing these changes — the new grid — is the focus of Panel III. Familiar topics of essential reliability services, distributed energy resources and inverter-connected and non-synchronous technologies will be discussed. NERC has done a significant amount of work on many of these topics, and this panel will provide an opportunity to highlight these efforts.

Panel IV highlights cyber security. Discussion will cover critical infrastructure protection standards, the Internet of Things and mitigating cyber threat risks, as well as questions related to cyber incident response plans, industrial control systems and improving information sharing.

NERC appreciates FERC's efforts on these key topics related to reliability and resilience. The conference is a great opportunity to discuss the key issues that are impacting the reliability and security of the bulk power system in North America. Panelists have not been announced; however, the conference will begin at 9 a.m. July 31 and be webcast. Tune in! *Janet Sena is senior vice president and director of Policy and External Affairs.* ■■■

Headlines

MRO Board Appoints Sara Patrick President, CEO

The Midwest Reliability Organization (MRO) Board of Directors is pleased to announce that it has appointed **Sara Patrick** as MRO's new president and chief executive officer, effective June 27. Patrick has been acting as interim president and CEO for the organization since February 26, 2018. She joined MRO in August 2008 as director of regulatory affairs and enforcement and was promoted shortly thereafter to vice president

enforcement and regulatory affairs and then to vice president compliance monitoring and regulatory affairs. [MRO Announcement](#)

Grid Shows Improved Resilience, Decreased Protection Systems Misoperations and Advanced Risk Management

Changes to the reliability ecosystem — driven by a shift in the resource mix, the retirement of gas, coal and nuclear plants in concert with the introduction of renewable energy resources and the advent of new technology — have required NERC to adapt, implementing a risk-based approach toward significant threats to the reliability of the North American grid.

In its role as the Electric Reliability Organization, NERC identifies and quantifies current and emerging reliability issues that enable the ERO to provide risk-informed recommendations for industry to pursue improved reliability performance. The [State of Reliability 2018](#) report looks back over the previous year, analyzing historical risks to the bulk power system with a view toward solving future problems.

“NERC's annual State of Reliability report is an analysis of the past performance of the grid that informs regulators, policymakers and executives at a high level while providing granular technical details for those interested in the underlying data and detailed analytics,” said James Merlo, vice president and director of Reliability Risk Management at NERC. “The grid has several areas that continue to show year-over-year improvement, and we continue to see the sustainment of high performance across all of the key reliability indicators.”

As dependence on the electric infrastructure increases daily, resilience becomes a more critical element of bulk power system reliability. In 2017, the bulk power system was able to maintain reliable operations during two Category 5 events — hurricanes Harvey and Irma — and the areas affected from storm-related damage recovered in record time, demonstrating improved resilience of the North American bulk power system.

NERC also identified a previously unknown risk to reliability that brought inverter-based resource controls, protection and performance to the forefront of NERC's reliability efforts. NERC is working with a team of industry inverter experts to mitigate some of the discovered issues and to identify and mitigate any other inverter reliability issues.

Other key findings include:

- **The bulk power system experienced no loss-of-load due to cyber or physical security events despite continually evolving threats.** Nonetheless, grid security, particularly cyber security, is an area where NERC and the industry must continually improve defenses as threats continue to rapidly evolve.
- **Transmission outages caused by failed protection system equipment, ac substation equipment or human error all show a decreasing trend for the last five years.** These three areas have historically been major causes of transmission outages. Each has trended downward for the last five years; however, these areas remain major contributors to transmission outage severity and will remain areas of focus.
- **Frequency response performance trends, while remaining acceptable, are showing varied results by interconnection.** Individual Interconnection performance is separated into performance during the arresting period and during the stabilizing period. Three of the four Interconnections trended "improving" during the arresting period, and two of the four trended "improving" during the stabilizing period. No Interconnection experienced frequency response performance below its interconnection frequency response obligation.
- **Protection systems misoperation rates, while remaining high priority, have declined for the fifth consecutive year.** The overall NERC misoperation rate is lower in 2017 than 2016 (7.1 percent down from 8.3 percent), continuing a five-year trend of declining rates across North America. The three largest causes of misoperations in 2017 remained the same as in

2016: Incorrect Settings/Logic/Design Errors, Relay Failure/Malfunctions and Communication Failures.

In addition to identifying reliability risks, NERC noted key areas for improvement, including resilience, inverter-based resource performance, security and transmission outages from failures and misoperations. The risks presented in the State of Reliability 2018 report must be monitored and mitigated to preserve grid reliability. The report provides a basis for understanding and prioritizing these risks and, more importantly, how these interdependent challenges require ERO-wide coordination for effective mitigation.

Robb Speaks on Security at EIS Summit

Jim Robb, NERC's president and chief executive officer, spoke at the EIS Summit, sponsored by the EIS Council, in London on June 25. The summit focused on best approaches to build coordinated resilience across our worldwide, interconnected infrastructures and networks. The panel — *Cyber Update – The United Kingdom, Israel and the U.S. Electric Subsector* — also featured: Ciaran Martin, chief executive, National Cyber Security Centre; and Rafi Franco, head of the Resilience Complex, Israel Cyber Directorate. [EIS Summit](#) ■■■

Compliance

Updates to Compliance Guidance Documents

A key factor in the success of compliance monitoring and enforcement of mandatory standards rests on a common understanding among industry and ERO Enterprise CMEP staff of how compliance can be achieved and demonstrated. For many standards, this is straightforward. For others, a variety of approaches may achieve the same objective. Implementation Guidance provides examples for implementing a standard. New and updated implementation guidance are posted on the [Compliance Guidance web page](#).

There are three new ERO Enterprise-Endorsed Implementation Guidance documents:

- [TOP-001-3, R13 and IRO-008-2, R4 Real Time Assessments \(OC\)](#)
- [PRC-005-6 Standard Application Guide \(MROSC\)](#)

- [PRC-023-4, R1, Determination of Practical Transmission Relaying Laudability Settings \(PC\)](#)

The [ERO Enterprise Non-Endorsed Implementation Guidance tracking spreadsheet](#) update includes the following:

- **CIP-002-5.1a, R1, Voice Communications in a CIP Environment (CIPC)** — The ERO Enterprise declined to endorse this document because it conflicts with the CIP-002 Requirements. Additionally, the document does not provide clear guidance on how voice communications are evaluated as BES Cyber Assets (BCA). As written, this document suggests that voice technology would never be considered a BCA or part of a BES Cyber System.

Lastly, the NERC Compliance and Certification Committee approved EnergySec as a [pre-qualified organization](#).

Newly Effective Standards

On July 1, 2018, the following standards became effective:

[CIP-009-6 – Cyber Security — Recovery Plans for BES Cyber Systems \(Requirement 2.3\)](#) recovers reliability functions performed by Bulk Electric System (BES) Cyber Systems by specifying recovery plan requirements in support of the continued stability, operability and reliability of the BES.

[MOD-026-1 – Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions \(Requirements 2, 2.1–2.1.6\)](#) verifies that the generator excitation control system or plant volt/var control function model (including the power system stabilizer model and the impedance compensator model) and the model parameters used in dynamic simulations accurately represent the generator excitation control system or plant volt/var control function behavior when assessing BES reliability.

[MOD-027-1 – Verification of Models and Data for Turbine/Governor and Load Control or Active](#)

[Power/Frequency Control Functions \(Requirements 2, 2.1–2.1.5\)](#) verifies that the turbine/governor and load control or active power/frequency control model and the model parameters, used in dynamic simulations that assess BES reliability, accurately represent generator unit real power response to system frequency variations.

[PRC-025-2 – Generator Relay Loadability](#) sets load-responsive protective relays associated with generation facilities at a level to prevent unnecessary tripping of generators during a system disturbance for conditions that do not pose a risk of damage to the associated equipment.

[TOP-001-4 – Transmission Operations](#) prevents instability, uncontrolled separation or cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.

ERO Enterprise Program Alignment Process Resources Updated

The [ERO Enterprise Program Alignment Process](#) is intended to enhance efforts to identify, prioritize and resolve alignment issues across the ERO Enterprise. This is a repeatable, transparent process that registered entities (or other relevant industry stakeholders) may use to report any perceived inconsistency in the approach, methods or practices implemented and executed by the Regional Entities.

Using this process, NERC captures identified issues from the various resources in a centralized repository. NERC classifies the issues through an initial screening process to ensure the appropriateness for this process, and then works with Regional Entities and stakeholders to analyze the issues and determine the scope and material impact. The ERO Enterprise develops recommendations and determines the priority of the activities taking into consideration all ERO Enterprise efforts.

Finally, NERC posts the issue along with the recommendations/results in the issues and recommendations tracking document and provides status updates on its activities. On June 22, 2018, the [Issues and Recommendations tracking spreadsheet](#) was updated.

NERC Posts Revised Registered Entity Self-Report and Mitigation Plan User Guide

The ERO Enterprise developed the [Registered Entity Self-Report and Mitigation Plan User Guide](#) for registered entities' use in reporting and mitigating noncompliance. The purpose of this document is to describe the type and quality of information that the registered entity must submit to allow for an effective evaluation by the compliance enforcement authority regarding the circumstances and risk of a noncompliance and the activities an entity takes to address them. The ability of the compliance enforcement authority to arrive at a final disposition determination in an efficient and effective manner depends on the quality of the information it has about the facts of the noncompliance, risk, and related mitigation. Accordingly, this guide provides guidance to assist registered entities with the submission of self-reports and mitigating activities.

The revised guide incorporates principles for how registered entities provide information to Regional Entities and clarifies expectations around registered entity self-reporting and design of mitigation activities to prevent recurrence. ■■■

Reliability Risk Management

Lessons Learned Posted

NERC published three new Lessons Learned under the [Event Analysis – Lessons Learned](#) tab on NERC.com.

The [Loss of Communication to Multiple SCADA RTUs at a Switching Center](#) addresses an incident in which grid operations lost communication with multiple substation remote terminal units when conditions allowed a pre-existing configuration error to express itself. The event that transpired had wide-reaching impacts to both control center operations and field personnel. This Lessons Learned is of primary interest to transmission operators and reliability coordinators.

The [External Model Data Causing State Estimator to Not Converge](#) addresses several entities in the ReliabilityFirst Region who experienced state estimator outages due to Inter-Control Center Communications Protocol (ICCP) data received from neighboring entities.

Upon investigation, the topology of the neighboring system had changed but the receiving entities had not updated their representation so the ICCP data no longer matched with the older model. The state estimator was unable to converge (or solve). This Lessons Learned is of primary interest to transmission operators, reliability coordinators and transmission owners who operate an energy management system with study/simulation capabilities.

The [Back Office EMS Support Tools Impact Real-Time Situational Awareness](#) addresses an incident in which a registered entity, upon receiving a call from its reliability coordinator about a particular contingency, identified that half of the contingency lists in the energy management system list were disabled. This was due to a back-office study where the contingency list control display was opened and modified, inadvertently impacting the contingencies being displayed in the real-time environment. This Lessons Learned is of primary interest to transmission operators, reliability coordinators and transmission owners who operate an energy management system with study/simulation capabilities.

A successful Lessons Learned document clearly identifies the lesson, contains sufficient information to understand the issues, visibly identifies the difference between the actual outcome and the desired outcome and includes an accurate sequence of events, when it provides clarity. ■■■

Standards

Webinar Resources Posted

NERC posted the [streaming webinar](#) and [slide presentation](#) for the 2018 Periodic Review Standing Review Team Standards Grading Industry webinar. ■■■

Regional Entity Events

Midwest Reliability Organization (MRO)

- **Operating Committee Meeting**
August 7, St. Paul, Minn. | [Register](#)
- **Planning Committee Meeting**

August 7, St. Paul, Minn. | [Register](#)

- **Joint Compliance Committee and Standards Committee Meeting**

August 30, St. Paul, Minn. | [Register](#)

ReliabilityFirst (RF)

- **Protection System Workshop – Protection System Drawings – “The Big Picture”**
August 14–15, Cleveland, Ohio | [Register](#)
- **Human Performance Workshop**
August 15–16, Cleveland, Ohio | [Register](#)

Texas RE

- **2018 Compliance 101 Workshop**, July 18 | [Register](#) ■■■

Upcoming Events

- **2018 NERC Standards and Compliance Workshop** – July 24–25, Columbus, Ohio | [In-person Registration](#) | [Webinar Workshop Registration](#) | [Hotel Registration](#) | [Agenda](#)
- **Monitoring and Situational Awareness Technical Conference** – October 2–3, Carmel, Indiana | [Registration Information Coming Soon](#)
- **GridSecCon 2018** – October 15–19, Las Vegas, Nevada | [Registration Information Coming Soon](#) ■■■

Filings

NERC Filings to FERC

June 4, 2018

[Petition for Approval of Amendments to the NERC Bylaws](#) | NERC submits a petition for approval of proposed amendments to the North American Electric Reliability Corporation (NERC) Bylaws.

[Petition of NERC for Approval of Amendments to MRO Bylaws](#) | NERC submits a petition for approval of proposed amendments to the Midwest Reliability Organization (MRO) Bylaws.

June 29, 2018

[Informational Filing re BAL-003-1.1 Frequency Response and Frequency Bias Setting](#) | NERC submits an informational filing as directed in FERC Order No. 794, addressing: (1) an evaluation of the use of the linear regression methodology to calculate frequency

response; and (2) the availability of resources for applicable entities to meet the Frequency Response Obligation.

NERC Filings in Canada

June 5, 2018

[NERC Errata to Implementation Plan for the Revised Definition of Remedial Action Scheme \(Alberta\)](#) ■■■

Careers at NERC

E-ISAC Policy and Coordination Manager

Location: Washington, DC

[Details](#)

Cyber Analyst-Network Analyst

Location: Washington, DC

[Details](#)

E-ISAC Junior Analyst Physical Security

Location: Washington, DC

[Details](#)

E-ISAC Watch Officer – Open Source Intelligence

Location: Washington, DC

[Details](#)

Associate Counsel (Enforcement)

Location: Washington, DC

[Details](#)

Standards Developer

Location: Atlanta

[Details](#)

Engineer Performance Analysis

Location: Atlanta

[Details](#) ■■■

NERC Articles

[How the E-ISAC Continues to Watch Over Grid Security](#)

NWPPA – June 2018

Bill Lawrence, director of the Electricity Information Sharing and Analysis Center (E-ISAC) ■■■