Agenda
Board of Trustees
May 10, 2018 | 8:30 a.m.–12:00 p.m. Eastern
(Please note the Schedule may be adjusted real-time should meetings conclude early and/or extend past their scheduled end time.)

The Ritz-Carlton, Pentagon City
1250 S. Hayes Street
Arlington, VA 22202

Conference Room: Ritz Carlton Grand Ballroom

Call to Order

NERC Antitrust Compliance Guidelines—Public Announcement

Introductions and Chair’s Remarks

Consent Agenda - Approve
1. Minutes*
   a. February 8, 2018 Meeting

2. Committee Membership and Charter Changes*
   a. Compliance and Certification Committee Membership
   b. Planning Committee Membership
   c. Planning Committee Charter Amendments
   d. Critical Infrastructure Protection Committee Membership

Regular Agenda

3. Remarks and Reports
   a. Welcome Remarks Tom Farrell, Chairman, President & CEO of Dominion Energy, Inc.
   b. Remarks by Richard Glick, Commissioner, FERC
   c. Remarks by Bruce Walker, Assistant Secretary, DOE
   d. Remarks by Murray Doehler, Past Chair, CAMPUT
   e. President’s Report

4. Report on Board of Trustees and Regional Board Officers Joint Meeting – Information

5. Report on Board of Trustees May 8, 2018 Closed Session – Information

6. Board Committee Reports
   a. Corporate Governance and Human Resources
b. Compliance

c. Finance and Audit
   i. 2017 Audit Results and Financial Statements – Accept
   ii. First Quarter 2018 Unaudited Statement of Activities – Accept

d. Enterprise-wide Risk

e. Technology and Security

f. Nominating Committee

g. Report by Vice Chair on Standards Quarterly Activities

7. Standards Quarterly Report and Actions*
   a. PER-003-2 – Operating Personnel Credentials – Approve
   b. PER-004-2 – Reliability Coordination-Staffing – Retire
   c. Supply Chain Activities – Update

8. Other Matters and Reports*
   a. Proposed Amendments to the Delegation Agreement with Midwest Reliability Organization Amended Exhibit B (MRO Bylaws) – Approve
   b. Plan for Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments – Update
   c. Reliability Coordinator Footprints in the Western Interconnection – Update
   d. E-ISAC Code of Conduct – Update

9. Committee Reports*
   a. Operating Committee
   b. Planning Committee
   c. Critical Infrastructure Protection Committee
   d. Member Representatives Committee
   e. Personnel Certification Governance Committee
   f. Standards Committee
      i. 2018-2020 Standards Committee Strategic Work Plan – Approve
   g. Reliability Issues Steering Committee
   h. Compliance and Certification Committee
   i. Electricity Subsector Coordinating Council

10. Forum and Group Reports*
c. North American Generator Forum

*Background materials included.
Antitrust Compliance Guidelines

I. General
It is NERC’s policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrain competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC’s compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC’s antitrust compliance policy is implicated in any situation should consult NERC’s General Counsel immediately.

II. Prohibited Activities
Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants’ expectations as to their future prices or internal costs.
- Discussions of a participant’s marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.
Any other matters that do not clearly fall within these guidelines should be reviewed with NERC’s General Counsel before being discussed.

III. Activities That Are Permitted
From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC’s Certificate of Incorporation, Bylaws, and Rules of Procedure are followed in conducting NERC business.

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.
- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.
Call to Order
Mr. Roy Thilly, Chair, called to order the duly noticed open meeting of the Board of Trustees (the “Board”) of the North American Electric Reliability Corporation (“NERC” or the “Corporation”) in Fort Lauderdale, Florida, on February 8, 2018, at 8:30 a.m. Eastern, and a quorum was declared present. The agenda is attached as Exhibit A.

Present at the meeting were:

**Board Members**
Roy Thilly, Chair
Kenneth W. DeFontes, Jr., Vice Chair
Charles Berardesco, Interim President and Chief Executive Officer
Janice B. Case
Robert G. Clarke
Frederick W. Gorbet
David Goulding
George S. Hawkins
Suzanne Keenan
Robin E. Manning
Jan Schori

**NERC Staff**
Tina Buzzard, Associate Director to the Office of the President and CEO
Howard Gugel, Senior Director of Standards
Stan Hoptroff, Vice President, Chief Technology Officer, and Director of Information Technology
Scott Jones, Vice President, Chief Financial and Administrative Officer, and Corporate Treasurer
Mark G. Lauby, Senior Vice President and Chief Reliability Officer
Ken McIntyre, Vice President and Director of Standards and Compliance
Sonia Mendonça, Vice President, Acting General Counsel and Corporate Secretary, and Director of Enforcement
James Merlo, Vice President and Director of Reliability Risk Management
Janet Sena, Senior Vice President and Director of Policy and External Affairs
Michael Walker, Senior Vice President and Chief Enterprise Risk and Strategic Development Officer
NERC Antitrust Compliance Guidelines
Mr. Thilly noted the public nature of the meeting and directed the participants’ attention to the NERC Antitrust Compliance Guidelines included with the advance meeting materials, and stated that any additional questions regarding these guidelines should be directed to Ms. Mendonça.

Welcoming Remarks
Mr. Thilly welcomed all of the attendees, including Eric Silagy of Florida Power & Light (“FPL”), Chairman Kevin McIntyre of the Federal Energy Regulatory Commission (“FERC”), Bruce Walker of the Department of Energy (“DOE”), and Michael Bardee of FERC. He also recognized the new members of the Board Suzanne Keenan and Rob Manning. Mr. Thilly referenced his report on the status of the CEO search presented at the Member Representatives Committee (“MRC”) meeting, and expressed his appreciation of the input received from stakeholders and others regarding candidates and nominating criteria. He reiterated that hiring a CEO is one of the Board’s most important responsibilities. He emphasized, regarding the CEO search, that the Board wants to be confident that it is choosing the right person. Mr. Thilly noted that NERC staff and Regional CEOs have performed excellently, and Mr. Berardesco’s leadership of the ERO Enterprise has allowed the Board to proceed effectively and without interruption.

Mr. Thilly noted that NERC has a vacancy for Chief Security Officer and a search will be instituted but not concluded until the selection of a CEO so as to allow for the new CEO to have input in the selection. He explained NERC has been coordinating with the Member Executive Committee (“MEC”) of the Electricity Subsector Coordinating Council (“ESCC”). Mr. Thilly thanked Messrs. Bill Lawrence and Tim Roxey for their excellent work, and Mr. Walker for his organizational leadership. He noted the MEC has been very supportive of the work being done by E-ISAC staff, and recognized Messrs. John McAvoy and William Fehrman for their support and mentoring of E-ISAC staff.

Mr. Thilly reported that before the open meeting, as is its custom, the Board met in closed session with NERC management, and subsequently in executive session without NERC management, to review NERC management activities.

Consent Agenda
Upon motion duly made and seconded, the Board approved the consent agenda as follows:

Minutes
The draft minutes for the November 9, 2017 and December 4, 2017 meetings were approved as presented to the Board at this meeting.

Committee Membership Appointments and Charter Revisions

Electiohn and Appointment of NERC Officers

RESOLVED, that the Board, upon recommendation of the Corporate Governance and Human Resources Committee (“CGHRC”), hereby elects the following officers of the Corporation for 2018:

- Roy Thilly, Chair
- Kenneth W. DeFontes, Jr., Vice Chair
• Charles A. Berardesco, Interim President and Chief Executive Officer

FURTHER RESOLVED, that the Board, upon recommendation of the President and the CGHRC, hereby appoints the following individuals as officers of the Corporation for 2018:

• Mark G. Lauby, Senior Vice President and Chief Reliability Officer
• Janet Sena, Senior Vice President and Director of Policy and External Affairs
• Michael Walker, Senior Vice President and Chief Enterprise Risk and Strategic Development Officer
• Stanley Hoptroff, Vice President, Chief Technology Officer, and Director of Information Technology
• Scott Jones, Senior Vice President, Chief Financial and Administrative Officer, and Corporate Treasurer
• Kenneth McIntyre, Vice President and Director of Standards and Compliance
• Sonia Mendonca, Vice President, Acting General Counsel and Corporate Secretary, and Director of Enforcement
• James Merlo, Vice President and Director of Reliability Risk Management
• Timothy E. Roxey, Vice President and Chief E-ISAC Operations Officer

Critical Infrastructure Protection Committee

RESOLVED, that the Board hereby approves the amended Critical Infrastructure Protection Committee (“CIPC”) charter, substantially in the form presented to the Board at this meeting, to replace the CIPC charter approved by the Board on May 5, 2016.

Compliance and Certification Committee

RESOLVED, that the Board hereby approves the amended Compliance and Certification Committee (“CCC”) charter, substantially in the form presented to the Board at this meeting, to replace the CCC charter approved by the Board on November 5, 2015.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

Reliability Issues Steering Committee

RESOLVED, that the Board hereby approves the appointment of the following individuals to the Reliability Issues Steering Committee (“RISC”), each for a term ending on January 31, 2019:

• Lisa Carrington, CIPC Member, Group Manager of IT Strategy & Enterprise Services of Arizona Public Service
• Brian Evans-Mongeon, Planning Committee Member, President and Chief Executive Officer of Utility Services
• Andrew Gallo, Standards Committee Chair, Director of Reliability Compliance of Austin Energy
• Patti Metro, CCC Member, Manager of Transmission & Reliability Standards of National Rural Electric Cooperative Association
• Herb Schrayshuen, MRC Member
• David Zwergel, Operating Committee Vice Chair, Senior Director of Regional Operations of Midcontinent ISO

**FURTHER RESOLVED**, that the Board hereby approves the appointment of the following individual to the RISC, for a term ending on January 31, 2020:

• Mark Ahlstrom, At-Large Member, Vice President of Renewable Energy Policy of NextEra Energy Resources
• Jeffery Cook, At-Large Member, Vice President of Transmission Planning and Asset Management of Bonneville Power Administration
• Donald Holdsworth, MRC Member, Director of NERC Compliance of Public Service Enterprise Group
• Charles King, At-Large Member, Vice President and Chief Information Officer of Kansas City Power & Light
• Dave Osburn, At-Large Member, Chief Executive Officer of Oklahoma Municipal Power Authority
• Mark Rothleder, At-Large Member, Vice President of Market Quality and Renewable Integration of California ISO
• Katherine Prewitt, MRC Member, Vice President of Transmission of Southern Company
• Chris Shepherd, At-Large Member, Senior Information Security Consultant of Gannet Fleming
• Brian Slocum, At-Large Member, Vice President of Operations and NERC Compliance Officer of ITC Holdings

**Personnel Certification Governance Committee**

**RESOLVED**, that the Board hereby approves the reappointment of the following individuals to the Personnel Certification Governance Committee (“PCGC”), each for a term ending on December 31, 2019:

• Michael Anderson, Supervisor I of Transmission Real Time Operations of American Electric Power
• Dave Carlson, T&S Manager Compliance of Commonwealth Edison Company
• Keith Carman, Senior Manager of Transmission System Operations of Tri-State Generation and Transmission Association, Inc.
• Brett Hallborg, System Control Manager of T&D System Operations of BC Hydro
• Michael Hoke, Senior Lead Trainer of PJM Interconnection, LLC

**FURTHER RESOLVED**, that the Board hereby approves the appointment of the following officers to the PCGC:
• Michael Anderson, Supervisor I of Transmission Real Time Operations of American Electric Power, to serve as Chair
• Margaret Adams, Lead Functional Coordinator of Southwest Power Pool, to serve as Vice Chair

**Operating Committee**

**RESOLVED**, that the Board hereby approves the appointment of JT Thompson of Northwest & Intermountain Power Producers Coalition to Sector 7 of the Operating Committee (“OC”), for a term ending on December 31, 2018.

**FURTHER RESOLVED**, that the Board hereby approves the appointment of Ryan Laruwe of Michigan Public Service Commission to Sector 12 of the OC, for a term ending on December 31, 2019.

**Regular Agenda**

**Remarks by Eric Silagy, President and CEO, Florida Power & Light**
Mr. Berardesco introduced Mr. Silagy, who highlighted the corporate structure of FPL as one of the two main subsidiary companies owned by NextEra Energy, along with NextEra Energy Resources. Mr. Silagy noted that FPL services approximately half the state of Florida, and has a diverse fuel mix and heavy reliance on natural gas – a shift from prior years when oil was a predominant fuel source. He described FPL’s focus on clean energy sources and FPL’s investments in large solar farms, battery storage projects, use of smart grid technology, and use of data from smart devices to improve services. Mr. Silagy explained how FPL focuses on protecting against damage from storms through the use of concrete poles, inspections, and other measures, and noted the impact from Hurricane Irma was less than the impact from prior storms indicating the effectiveness of FPL’s improvements. He also summarized activities in Puerto Rico, cyber activities, and cooperation with multiple agencies.

**Remarks by Kevin McIntyre, Chairman, FERC**
Mr. Berardesco introduced Chairman McIntyre of FERC. Mr. McIntyre commented on the strong bipartisan interest from Congress in reliability, and his affirmation of a personal commitment to reliability made during his confirmation hearings. He discussed the relationship among FERC, NERC, and other members of the reliability community, noting NERC’s role is central and essential, and stated he is seeking to expand and improve upon the FERC-NERC partnership. Mr. McIntyre noted that, in January, FERC staff hosted a FERC-NERC-Regional forum to discuss various technical topics, and that he, Mr. Berardesco, and Mr. Bruce Walker, testified before Congress on issues including grid resilience. He discussed the DOE’s proposal to strengthen the grid in light of planned retirements of certain assets, and the recognition and compensation of resilience attributes by energy markets.

Mr. McIntyre expressed appreciation for NERC and NERC community support of the FERC resilience activities and invited detailed input. He acknowledged the work of the RISC in developing a resilience framework. Mr. McIntyre also discussed the FERC activities related to cyber security, enhanced reporting under CIP Reliability Standards, and the new Reliability Standards regarding the management of the
supply chain. Mr. McIntyre noted the evolving nature of threats and need for acquiring information. He acknowledged the E-ISAC and its role and close coordination with FERC through the FERC Office of Energy Infrastructure Security (“OEIS”), and the collaboration of the OEIS, the FERC Office of Electric Reliability, and the E-ISAC on GridEx. Mr. McIntyre discussed the Standards Efficiency Review, and noted the evolving NERC organizational structure. He exhorted all to continue to work on these matters with a due sense of urgency and purpose. Mr. McIntyre acknowledged the retirement of Mike Bardee from FERC, discussing his work at FERC and his role in reliability.

Remarks by Bruce Walker, Assistant Secretary, DOE
Mr. Walker discussed the DOE’s partnerships with various organizations and how synchronized the industry as a whole is in reliability and resilience work. He highlighted the Power Marketing Administration, which gives DOE insights on reliability issues, and the DOE Office of Electricity Delivery and Energy Reliability, which is focused on critical assets across the energy sector. He stated the DOE is working on a model that considers the interdependent nature of the electric grid to identify those assets that can be enhanced, improved, or installed to improve resilience, reliability, and affordability. The model would perform a “next worst case analysis” and enable sharing of related information to industry for action.

Mr. Walker also discussed a goal of the DOE to identify actionable short-term items to mitigate the impact of cyber and physical attacks, looking for ways to leverage the work utilities perform to protect facilities. He also summarized a DOE goal for making storage feasible, and a goal to increase use of low cost super high-fidelity sensitive devices. Finally, Mr. Walker discussed the DOE’s goal for developing hardening strategies and ensuring Puerto Rico and the Virgin Islands are able to add resilience in a viable way. He applauded the Edison Electric Institute, National Rural Electric Cooperative Association, and American Public Power Association for their help in those regions.

Interim President’s Report
Mr. Berardesco welcomed all attendees and thanked everyone for support of the NERC team during the period of transition. He thanked the Board and Mr. Thilly for counsel and advice, and NERC colleagues and the officer team. Mr. Berardesco noted substantial progress on goals even during the transition period, which required collaboration with the Regions and stakeholders. Examples of progress during this period include: the Long-Term Reliability Assessment; GridEx; the new member portal for E-ISAC; a new Memorandum of Understanding (“MOU”) with British Columbia and Western Electricity Coordinating Council (“WECC”); release of the Annual Report; continued engagement with Mexico; work on realignment of Southwest Power Pool, Inc. (“SPP”) Regional Entity (“SPP RE”); the resilience framework and path forward developed by RISC; the Compliance Monitoring and Enforcement Program (“CMEP”) Technology Project; work on CIP compliance; enhancement of the oversight of Multi-Region Registered Entities (“MRREs”); and work on enhancement of supply chain management, even before the Reliability Standard became effective.

Mr. Berardesco highlighted three key themes – importance, independence, and interdependence. He stated what the ERO Enterprise does, including Reliability Standards, assessments, and the work of the E-ISAC, is important. Mr. Berardesco discussed that independence is critical for the credibility of what the ERO Enterprise does, and is in the very DNA of the organization. Regarding interdependence, he noted
that the ERO Enterprise and all stakeholders either succeed or fall together. Mr. Berardesco highlighted collaboration with Regions and the work by Lane Lanford within the ERO Executive Management Group (“ERO EMG”). Mr. Lanford thanked the Board and noted continued improvement in the ERO model.

Jim Robb, as the new ERO EMG Vice Chair, expressed appreciation to Mr. Lanford regarding improvements in collegiality, and recognized Mr. Berardesco and his leadership during the transition, noting the need to demonstrate unity during transition. Mr. Robb highlighted work on the strategic plan, the foundation to take the ERO Enterprise to the next level. He agreed with Mr. Thilly that NERC can emerge stronger from the transition with respect to how its mission is executed. Mr. Robb discussed follow-up work on issues highlighted by western events and working with western CEOs, including situational awareness and visualization of neighboring systems – using the mid-Atlantic areas as a benchmark. He discussed upcoming changes regarding Reliability Coordinators (“RCs”) in the West, and highlighted collaboration between WECC and NERC on these issues.

Report on Board of Trustees January 24 and February 6, 2018 Closed Session
Mr. Gorbet reported that before the open meeting, as is its custom, the Board met in closed session with NERC management, and subsequently in executive session without NERC management, to review NERC management activities and to approve Mr. Berardesco’s compensation. In these sessions, the Board also discussed legal and contractual issues.

Board of Trustees Self-Assessment Results
Mr. Thilly reported the Board Self-Assessment results were detailed at the CGHRC meeting and discussed at the MRC.

Board Committee Reports

Corporate Governance and Human Resources Committee
Mr. Clarke, Committee Chair, summarized the January 24 and February 7, 2018 meetings. He presented the Committee’s recommendation on a contribution to the Employee Savings and Investment Plan. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, upon recommendation of the CGHRC, hereby approves a contribution into NERC’s Savings and Investment plan (the “Plan”) for the year ending on December 31, 2017, for the accounts of each eligible employee participating in the Plan, equal to 8% of such employee participant’s 2017 base salary, as presented to the Board at this meeting.

Mr. Clarke presented the Committee’s recommendation on increasing the compensation to the Board Vice Chair. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, upon recommendation of the CGHRC, hereby approves the increase in the compensation to the Board Vice Chair to $10,000.

Mr. Clarke presented the Committee’s recommendation on amending the NERC Bylaws. Upon motion duly made and seconded, the Board approved the following resolutions:
Resolved, that the Board, upon recommendation of the CGHRC, hereby approves the amended NERC Bylaws, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board recommends the amended NERC Bylaws, as presented to the Board at this meeting, to the MRC for approval.

Mr. Clarke presented the Committee’s recommendation on revisions to the 2018 ERO Enterprise Metrics. Specifically, NERC will continue to measure performance associated with cold weather in light of the 2017 results. Upon motion duly made and seconded, the Board approved the following resolution:

Resolved, that the Board, upon recommendation of the CGHRC, hereby approves the amended 2018 ERO Enterprise Metrics, as presented to the Board at this meeting.

Compliance Committee
Ms. Case, Committee Chair, reported the Committee met in annual closed session and discussed the state of compliance activities. She stated the Committee will present on trends in major CIP violations in open session in May.

Finance and Audit Committee
Ms. Schori, Committee Chair, reported the Committee met in closed session in November and adopted principles for oversight of financially-focused internal control audits. The Committee also approved the audit plan for Internal Audit to perform 80 percent of work focused on “strategy and policy audits”, and 20 percent on financially-focused audits. Upon motion duly made and seconded, the Board approved the following resolutions:

Resolved, that the Board, upon recommendation of the Finance and Audit Committee (“FAC”), hereby accepts the 2017 NERC, Combined ERO Enterprise, and Regional Entity Unaudited Results, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board, upon recommendation of the FAC, hereby approves the revised Investment Policy, as presented to the Board at this meeting.

Enterprise-wide Risk Committee
Mr. Goulding, Committee Chair, reported on the recent closed session of the Committee including reviewing the mandate which had already been reviewed to clarify allocation of responsibilities with the FAC, and that no further changes were made. He discussed the status of the 2017 Work Plan, review and approval of the 2018 Audit Plan, and preliminary review of 2019-20 audit plans. Mr. Goulding noted the Committee endorsed the 2018 Work Plan of the CCC. He also stated the Committee was reconstituted, and noted new members.
Technology and Security Committee
Mr. Hawkins, Committee Chair, reported on the Committee’s first meeting the prior day, and noted the Committee’s members. He commented on the CMEP tool procurement selection, and the increase in participation in GridEx.

Nominating Committee
Mr. Gorbet, Committee Chair, noted that Messrs. Clarke, DeFontes, and Goulding are eligible for reelection in 2019 and the Committee would not normally have a search in 2018. He reported the CGHRC recommended on January 24, 2018, and the Board agreed, that 2018 would be an appropriate time to search for a Canadian trustee. Mr. Gorbet requested the MRC identify up to six members of the MRC to serve on the Committee, and to notify the Board to appoint them expeditiously. He noted the Committee will meet before the end of March.

Mr. Thilly stated that future Board Committee Reports will include a report from Mr. DeFontes on standards issues.

Other Matters and Reports

Memorandum of Understanding between British Columbia Utilities Commission, NERC, and WECC
Steve Goodwill of WECC presented the MOU between British Columbia Utilities Commission, NERC, and WECC, and thanked NERC staff for their work on the MOU. He summarized the history of NERC’s and WECC’s relationship with British Columbia, and stated this MOU is consistent with the Board’s direction with respect to relationships with Canadian provinces as this MOU allows sharing of information and recognizes NERC’s oversight role. Mr. Goodwill stated the MOU will be submitted to the WECC board at its March meeting. He noted ongoing negotiations with Mexican regulatory authorities that will allow similar sharing of information.

Mr. Gorbet provided historical context regarding the relationship with Canadian provinces at the start of the ERO and the first generation of MOUs. He commented that NERC is focusing on updating and standardizing the MOUs regarding NERC’s ability to exercise oversight responsibilities and line of sight. Mr. Gorbet noted the New Brunswick MOU was the first of these updated MOUs, and that the Board met in August with Canadian regulators and explained the differences in MOUs, bringing to light this issue. Updating the British Columbia MOU was an initiative stemming from that meeting, and the MOU is the second of the second generation MOUs. He stated NERC will continue to pursue the transparency and line of sight important to do its job. Mr. Thilly expressed his appreciation to WECC for their work. Upon motion duly made and seconded, the following resolutions were approved:

RESOLVED, that the Board hereby approves the MOU between the British Columbia Utilities Commission, NERC, and WECC on substantially the terms and conditions presented to the Board, together with such changes as are approved by NERC’s Chief Executive Officer.

FURTHER RESOLVED, that each of NERC’s Chief Executive Officer and General Counsel, are hereby authorized to execute and deliver, on behalf of NERC, the MOU.
Approvals in Connection with the Termination of the Regional Delegation Agreement with SPP, Inc.

Ms. Mendonça and Mr. McIntyre presented the items for approval related to the transfer of registered entities from SPP to either MRO or SERC, including the termination of the Regional Delegation Agreement (“RDA”) between SPP and NERC, and the revisions to the RDAs for Midwest Reliability Organization (“MRO”) and SERC Reliability Corporation (“SERC”). Ms. Mendonça noted that the revisions to the RDAs are limited to expanding MRO’s and SERC’s boundaries to reflect the addition of entities transferring from SPP RE per the lists included in the advance meeting materials. She stated NERC will file with FERC as promptly as possible upon approval of the respective revised RDA by MRO’s board of directors.

Mr. McIntyre summarized the extensive process of communication NERC conducted with the SPP RE registered entities, and the rationale for the proposed assignments. He discussed NERC’s role as the Compliance Enforcement Authority (“CEA”) for SPP for two years, and NERC’s work with MRO and SERC for a successful transition of all registered entities involved. Mr. Thilly noted the Board reviewed all comments submitted in advance of the meeting. He asked for clarification regarding registration of SPP during the period in which NERC serves as CEA. Ms. Mendonça explained SPP was already registered in MRO, SERC, SPP RE, and WECC, and will remain registered in MRO and WECC during the time NERC serves as CEA.

Ms. Schori inquired about comments raised regarding varying levels of expertise by Regions with regional transmission organizations (“RTOs”). Ms. Mendonça and Mr. McIntyre noted that NERC CMEP activities are based on the functional model, and all Regions have experience in conducting CMEP activities to RCs, Balancing Authorities (“BAs”), and Transmission Operators (“TOPs”), which are the reliability functions an RTO generally performs. Ms. Mendonça and Mr. McIntyre noted that NERC will rely on the expertise of all Regions in its role as CEA.

Mr. McIntyre reported that NERC reviewed MRO and SERC transition and resource plans and believes they are able to assume the additional responsibilities from the SPP RE registered entities. Mr. Berardesco noted that NERC will perform enhanced oversight of MRO and SERC in light of the additional responsibilities they are undertaking. Mr. Thilly noted that the ERO Enterprise structure is geographical in nature, and the MRRE Coordinated Oversight Program – which was indicated by commenters as an issue – is very important to the Board and an area of focus. He stated that certain commenters indicated a preference for SPP RE registered entities to transfer to ReliabilityFirst, and that even the Board’s decision is not consistent with that preference such comments are a tribute to ReliabilityFirst’s expertise and work. Mr. Hawkins expressed his appreciation for all comments and noted that comments in opposition to staff’s recommendation were useful in the Board’s decision-making process.

Upon motion duly made and seconded, the Board approved the following resolutions:

Termination Agreement between SPP and NERC

RESOLVED, that the Board hereby approves the Termination Agreement between SPP and NERC, on substantially the terms and conditions presented to the Board, together with such changes as are approved by NERC’s Chief Executive Officer.
FURTHER RESOLVED, that each of NERC’s Chief Executive Officer and General Counsel, are hereby authorized to execute and deliver, on behalf of NERC, the Termination Agreement.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolution.

Amendments to Regional Delegation Agreements

WHEREAS, on July 27, 2017, NERC issued a letter to inform entities registered in the footprint of the SPP RE that NERC and SPP had mutually agreed to terminate the Amended and Restated Delegation Agreement between North American Electric Reliability Corporation and Southwest Power Pool, Inc. and to inform each registered entity that it may submit a written request to NERC stating its preference for transfer to another Regional Entity.

WHEREAS, on August 25, 2017, and October 27, 2017, NERC staff conducted webinars to provide information regarding the transition process to SPP RE registered entities. From September 21, 2017, to October 6, 2017, NERC staff distributed, by email, to SPP RE registered entities, a summary of additional questions asked by registered entities about the process during the preceding week, with responses. NERC staff also communicated directly with SPP RE registered entities that contacted NERC with individual questions.

WHEREAS, by October 31, 2017, NERC received 122 transfer requests, which NERC reviewed and considered, focusing, initially, on two particular factors outlined in section 1208 of the NERC Rules of Procedure:

- the location of the Registered Entity’s Bulk Power System facilities in relation to the geographic and electrical boundaries of the transferee Regional Entity;
- the impact of the proposed transfer on other Bulk Power System owners, operators, and users, including affected RCs, BAs, and TOPs, as appropriate.

WHEREAS, on December 1, 2017, NERC staff posted, for stakeholder comment, its draft recommendation for the reallocation of all registered entities in the SPP RE footprint to either the MRO or the SERC. Prior to such posting, NERC staff contacted each registered entity for which the recommended allocation did not match the entity’s stated preference to discuss its rationale.

WHEREAS, on December 15, 2017, NERC staff posted additional information regarding the analysis conducted by NERC staff that resulted in the referenced recommended reallocation.

WHEREAS, from December 15, 2017, to December 20, 2017, NERC staff obtained information from MRO and from December 15, 2017, to January 3, 2018, NERC staff obtained information from SERC with respect to various aspects of their transition plans, and with that information, considered the following factors:

- the impact of the proposed transfer on the current and future staffing, resources, budgets and assessments to other Load-Serving Entities of the transferee Regional Entity;
• the sufficiency of the proposed transferee Regional Entity’s staffing and resources to perform compliance monitoring and enforcement activities with respect to the Registered Entity;

• the Registered Entity’s compliance history with SPP RE; and the manner in which pending compliance monitoring and enforcement matters concerning the Registered Entity would be transitioned from SPP RE to the transferee Regional Entity.

WHEREAS, by January 6, 2018, NERC received 15 sets of comments, of SPP RE registered entities and other stakeholders, regarding NERC staff’s recommended reallocation.

WHEREAS, NERC staff reviewed each comment and, where necessary, contacted those commenters expressing concerns with the recommended reallocation.

WHEREAS, the Board was provided with copies of all individual comments received by NERC.

WHEREAS, on January 24, 2018, NERC staff posted a summary of the referenced comments, by themes raised, and responses. The advanced agenda package materials for the Board, posted on January 25, 2018 included the December 1, 2017 Notice of Proposed Transfer Regional Entities; December 15, 2017 posting of Additional Information Regarding NERC’s Proposed Transferee Regional Entities; January 24, 2018 posting of Consideration of Comments; and clean and redlined versions of the proposed amendments to the MRO and SERC RDAs.

WHEREAS, NERC staff has recommended the reallocation of the following entities from SPP RE to MRO, after an extensive analysis of the geographic, electric, and functional relationships of all of the entities currently registered in SPP RE as well as other criteria discussed in the materials included in the advance agenda package.

• AE Power Services LLC (AEPS)
• AEP as Agent for AEP OK Transco., PSCO, and SWEPCO (AEPW)
• AES Shady Point, LLC (AESSP)
• Arbuckle Mountain Wind Farm LLC (AMWF)
• Arkansas Electric Cooperative Corporation (AECC)
• Avangrid Renewables (AVNR)
• Balko Wind, LLC (BALKO)
• Blue Canyon II Windpower LLC (BCWII)
• Blue Canyon Windpower LLC (BCWI)
• Blue Canyon Windpower V, LLC (BCWV)
• Blue Canyon Windpower VI, LLC (BC6)
• Board Of Public Utilities (Kansas City KS) (BPU)
• Board Of Public Utilities, City Of McPherson, Kansas (MCPHER)
• Borger Energy Associates, LP (BOEA)
• Boston Energy Trading and Marketing LLC (EMMT)
• Buckeye Wind Energy, LLC (BEWE)
• Buffalo Dunes Wind Project, LLC (BDWP)
• Canadian Hills Wind, LLC (CHW)
• Caney River Wind Project, LLC (CRWP)
• Caprock Wind LLC (CAPROCK)
• Carthage Water & Electric Plant (CAWEP)
• Central Valley Electric Cooperative, Inc. (CVEC)
• Chisholm View Wind Project, LLC (CHISHOLM)
• Cimarron Bend Wind Project, LLC (CBW)
• Cimarron Windpower II, LLC (CIMW)
• City Of Ottawa (OTTAWA)
• City Utilities Of Springfield, MO (SPRM)
• Cloud County Wind Farm, LLC, (CCWF)
• Coffeyville Municipal Light & Power (CMLP)
• CP Bloom Wind, LLC
• CPV Keenan II Renewable Energy Company, LLC (KREC)
• Dempsey Ridge Wind Farm, LLC (DRWF)
• Dogwood Power Management, LLC (DPM)
• Drift Sand Wind Project LLC (DRIFTSAND)
• Duke Energy Renewables Services, LLC (DEGS)
• East Texas Electric Cooperative Inc. (ETEC)
• Eastman Cogeneration Limited Partnership (EASTMAN)
• EDP Renewables North America LLC (EDPR NA)
• Exelon Wind 4, LLC (EXWD4)
• Farmers’ Electric Cooperative, Inc. Of New Mexico (FARMCOOPNM)
• Flat Ridge 2 Wind Energy LLC (FRWEII)
• Flat Ridge Wind Energy, LLC (FRWE)
• Frontier Windpower, LLC (FRONTIER)
• Golden Spread Electric Cooperative, Inc. (GSEC)
• Golden Spread Panhandle Wind Ranch, LLC (GSPWR)
• Goodwell Wind Project, LLC (GOODWELL)
• Grand River Dam Authority (GRDA)
• Great Western Wind Energy, LLC (GWWE)
• Green Country Energy, LLC (GREENCOGO)
• Green Country Operating Services, LLC (GREENCOGOP)
• Independence Power & Light (Independence, Missouri) (INDN)
• Invenergy Services LLC (INVENERGY)
• Ironwood Windpower, LLC (IRONWOOD)
• ITC Great Plains, LLC (ITCGP)
• Kansas City Power & Light Company (KCPL)
• Kansas Electric Power Cooperative, Inc. (KEPC)
• Kingfisher Wind, LLC c/o Apex Wind Asset Management (KING)
• Kiowa Power Partners, LLC (KIOWAPP)
• KODE Novus I, LLC (KODE)
• Lea County Electric Cooperative, Inc. (LCEC)
• Lea Power Partners, LLC (LEAPP)
• Llano Estacado Wind, LP (LLANOEWIND)
• Lubbock Power And Light (LPLTX)
• Midwest Energy, Inc. (MIDW)
• MISO-MBHydro Contingency Reserve Sharing Group (MRSG)
• NAES Corporation - Dogwood (NAESDOGW)
• NAES Corporation - Goodman Energy Center (NAESGEC)
• NAES Corporation - Oklahoma Cogeneration, LLC (NAESOKC)
• NextEra Energy Resources, LLC (NEER)
• Noble Great Plains Windpark, LLC (NOBLEGP)
• Northeast Texas Electric Cooperative - HCPP (NTEC-HCPP)
• Northeast Texas Electric Cooperative, Inc (NTEC)
• NRG Energy Services - Golden Spread (NRGGS)
• NRG Energy Services-Panhandle Wind Ranch (GOP) (NRGPWR)
• Oklahoma Gas And Electric Co. (OKGE)
• Oklahoma Municipal Power Authority (OMPA)
• Oneta Power, LLC (ONETA)
• Origin Wind Energy, LLC (ORGNWE)
• Paragould Light & Water Commission (PARAGOULD)
• Patterson Operators LP
• Rayburn Country Electric Cooperative, Inc. (RCEC)
• Red Dirt Wind Project, LLC
• Red Hills Wind Project, LLC. (RHWP)
• Redbed Plains Wind Farm LLC (REDBED)
• Rock Creek Wind Project, LLC (RCWP)
• Rock Falls Wind Farm, LLC
• Rocky Ridge Wind Project, LLC (ROCKY)
• Roosevelt Wind Project, LLC (RWP)
• Sikeston Board Of Municipal Utilities (SIKESTONMO)
• Slate Creek Wind, LLC (SLATE)
• Smoky Hills Wind Farm, LLC (SMOKY)
• Smoky Hills Wind Project II, LLC (SMOKY2)
• Southern Power Company (SPC)
• Southwest Power Pool (SPP)
• Southwestern Power Administration (SPA)
• Southwestern Public Service Co. (Xcel Energy) (SPS)
• Spearville 3, LLC (SPEAR3)
• Spinning Spur Wind, LLC (SPINSPUR)
• Sunflower Electric Power Corporation (SECI)
• Tenaska Gateway Partners Ltd (TENASGATEW)
• The Empire District Electric Company (EDE)
• Thunder Ranch Wind Project, LLC
• Transource Energy, LLC (TRANS)
• Tri-County Electric Cooperative, Inc of Oklahoma (TRICEC)
• USACE - Kansas City District (COEKS)
• USACE - Little Rock District (COELR)
• USACE - Tulsa District (COETULSA)
• Waverly Wind Farm LLC (Waverly)
• Westar Energy, Inc. (WR)
• Western Farmers Electric Cooperative (WFEC)

WHEREAS, NERC staff has recommended the reallocation of the entities below from SPP RE to SERC, after an extensive analysis of the geographic, electric, and functional relationships of all of the entities currently registered in SPP RE as well as other criteria discussed in the materials included in the advance agenda package.

• Arkansas Electric Cooperative Corporation (AECC)
• City Of Abbeville (ABBEVLA)
• City Of Alexandria (ALEXLA)
• City Of Clarksdale, Mississippi (CCM)
• City Water & Light - Jonesboro, Arkansas (CWL)
• Cleco Corporate Holdings LLC (CLECO)
• Lafayette Utilities System (LAFA)
• Louisiana Energy & Power Authority (LEPA)
• Midcontinent Independent System Operator, Inc. (MISO)
• Mississippi Delta Energy Agency (MISSDEA)
• Poplar Bluff (POPBLUFFMO)
• Public Service Commission Of Yazoo City (YAZO)
• Sikeston Board Of Municipal Utilities (SIKESTONMO)
• Terrebonne Parish Consolidated Government (TERREBONNE)

WHEREAS, the Board has considered the record and analysis as developed by the NERC staff and reflected in the advance agenda package.

WHEREAS, the Board has reviewed the individual comments submitted by the registered entities, as well as the analysis of such comments performed by NERC staff.

RESOLVED, that the Board hereby approves the amendments to the RDA between NERC and MRO to reflect the expansion of the regional boundaries to include the above registered entities, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the amendments to the RDA between NERC and SERC to reflect the expansion of the regional boundaries to include the above registered entities, as presented to the Board at this meeting.
FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolution.

Rules of Procedure Amendment – Consolidated Hearing Process
Ms. Mendonça presented the revisions to the Rules of Procedure, noting they reflect minor changes requested by FERC staff. She noted that if approved, NERC will amend the Rules of Procedure pending filing with FERC to address two changes requested by FERC staff. Upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby approves the proposed amendments to Section 400 and Appendices 2 and 4C to the NERC Rules of Procedure, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

RISC’s ERO Reliability Risk Priorities Report
Mr. Thilly referenced the presentation of the ERO Reliability Risk Priorities Report of the RISC the prior day. Mr. Gorbet requested the Board to provide feedback on resilience framework work, and commended the RISC for its work. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby accepts the 2017 ERO Reliability Risk Priorities Report of the RISC, as presented to the Board at this meeting, commended the RISC for the work, and requests that it continues to develop the resilience framework.

Standards
Mr. Gugel provided an update regarding the Standards Efficiency Review project and activities related to supply chain management. Mr. Gugel also presented on the following Reliability Standards-related projects. After discussion, and upon motions duly made and seconded, the Board approved the following resolutions:

PRC-025-2 – Generator Relay Loadability

RESOLVED, that the Board hereby adopts the proposed Reliability Standard PRC-025-2, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the associated implementation plan, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting.
FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standards PRC-025-1, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

**FAC-501-WECC-2 – Transmission Maintenance**

RESOLVED, that the Board hereby adopts the proposed regional Reliability Standard FAC-501-WECC-2, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the associated implementation plan, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the proposed retirement of regional Reliability Standard FAC-501-WECC-1, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

**BAL-004-WECC-3 – Automatic Time Error Correction**

RESOLVED, that the Board hereby adopts the proposed regional Reliability Standard BAL-004-WECC-3, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the associated implementation plan, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the proposed retirement of regional Reliability Standard BAL-004-WECC-2, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.
**PRC-004-WECC-2 – Protection System and Remedial Action Scheme Misoperation**

RESOLVED, that the Board hereby approves the proposed retirement of regional Reliability Standard PRC-004-WECC-2, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

**VAR-002-WECC-2 – Automatic Voltage Regulators**

RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard VAR-002-WECC-2, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

**SERC Regional Reliability Standards Development Procedure**

RESOLVED, that the Board hereby approves the proposed SERC Standards Development Process revisions, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

**Committee Reports**

Representatives of the Standing Committees provided reports to the Board highlighting items from their written reports, which had been included with the advance meeting materials. Mr. Thilly asked, in light of the timing of this meeting, that the representatives focus only on key or new items from their written report.

**Operating Committee**

Lloyd Linke, Committee Chair, referenced the written report and highlighted changes in leadership of subcommittee. He noted approval of implementation guidance and reliability guidelines and other activities.

**Planning Committee**

Brian Evans-Mongeon, Committee Chair, noted the Essential Reliability Services Working Group will present final documents to the Committee at the March meeting. He expressed his appreciation to the working group members and noted that follow on activities would continue within the full Committee. Mr. Evans-Mongeon reported on a new educational video on distributed energy resources. He noted
future activities for the Committee include a lessons learned discussion on winter impact on various systems.

**Critical Infrastructure Protection Committee**
Marc Child, Committee Chair, referenced the written report, and requested approval of the 2018 Work Plan. Upon motion duly made and seconded, the Board approved the following resolution:

**RESOLVED**, that the Board, hereby approves the revised Critical Infrastructure Protection Committee Strategic Plan, as presented to the Board at this meeting.

**Member Representatives Committee**
Jason Marshall, MRC Chair, summarized issues that had been discussed at the MRC meeting on the previous day. He reported on the Committee’s election of trustees, discussion of effectiveness and efficiency of stakeholder engagement, new standing agenda item highlighting one of the technical committees, and discussion of RISC priority report.

**Personnel Certification Governance Committee**
Brett Hallborg, Committee Chair summarized two major initiatives completed in 2017, and highlighted activities for 2018 including a multi-year strategic plan.

**Standards Committee**
Amy Casuscelli, Committee Vice Chair, highlighted the Committee’s schedule of future meetings and expressed appreciation for the presence of Board members at Committee meetings. She also discussed the monitoring the Standards Efficiency Review process.

**Reliability Issues Steering Committee**
Peter Brandien, Committee Chair, thanked the Board for approving the RISC report and for the feedback provided on the resilience framework. He stated he looked forward to the continuing work of the Committee, and appreciated the support of Mr. Walker and Mses. Chanzes and Iwanechko.

**Compliance and Certification Committee**
Patti Metro, Committee Chair, referenced the written report and presented items for approval. She expressed a goal of enhancing the efficiency and effectiveness of the Committee meetings, and noted at least two Committee meetings are held in either Atlanta, Georgia, or Washington, D.C., to minimize staff travel. Ms. Metro noted that the Committee has one meeting hosted by a Region, and one meeting hosted by a member, to reduce cost. She discussed succession planning for Committee leadership. Upon motion duly made and seconded, the Board approved the following resolutions:

**RESOLVED**, that the Board, hereby approves the 2018 CCC Work Plan, as presented to the Board at this meeting.

**FURTHER RESOLVED**, that the Board, hereby approves the CCC Monitoring Program, as presented to the Board at this meeting.
Electricity Subsector Coordinating Council
Mr. Thilly noted Mr. Hawkins will be the Board observer for ESCC. Mr. Berardesco reported the MEC is working with the E-ISAC and moving along on the strategic plan. He reported the ESCC also met with the MEC on the same matter and established regular reporting.

Forum and Group Reports

North American Energy Standards Board (NAESB)
Michael Desselle, NAESB Chair, referenced the written report, and highlighted collaboration with NERC in recent activities.

North American Transmission Forum
Tom Galloway, Forum CEO, referenced the written report and reported recent resilience related activities, supply chain activities, and collaboration with NERC staff and other industry partners. He noted increases in transparency and report sharing. Mr. Thilly thanked the Forum for work on supply chain.

North American Generator Forum
Allen Shriver, Forum COO, thanked NERC for attending the emerging technology roundtable. He highlighted work with Bob Cummings and Ryan Quint, and noted upcoming webinars.

Adjournment
There being no further business, and upon motion duly made and seconded, the meeting was adjourned.

Submitted by,

Sonia C. Mendonça
Acting Corporate Secretary
Agenda Item 2a
Board of Trustees Meeting
May 10, 2018

**Compliance and Certification Committee (CCC) Membership Changes**

**Action**
Approve

**Summary**
The CCC Nominating Subcommittee respectfully requests the NERC Board of Trustees (Board) to approve the following two-year Committee Officer Appointments and Membership Re-appointments for a three-year term effective on the date of Board approval. At the March 2018 CCC meeting, the CCC unanimously endorsed the following CCC representative to serve as CCC Chair and Vice Chair for July 2018 – June 2020.

<table>
<thead>
<tr>
<th>Committee Officer Appointments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two Year Term</strong></td>
</tr>
<tr>
<td>CCC Chair</td>
</tr>
<tr>
<td>July 1, 2018 – June 30, 2020</td>
</tr>
<tr>
<td>CCC Vice-Chair</td>
</tr>
<tr>
<td>July 1, 2018 – June 30, 2020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Member Appointments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sector</strong></td>
</tr>
<tr>
<td>IOU</td>
</tr>
<tr>
<td>Merchant Generator</td>
</tr>
<tr>
<td>Co-op</td>
</tr>
<tr>
<td>Co-op</td>
</tr>
<tr>
<td>Canada Federal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Member Re-appointments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sector</strong></td>
</tr>
<tr>
<td>MRO</td>
</tr>
<tr>
<td>Transmission Dependent Utility</td>
</tr>
<tr>
<td>Electricity Marketer</td>
</tr>
<tr>
<td>Federal/Provincial Utility/Power Authority</td>
</tr>
<tr>
<td>Sector</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>State/Municipal</td>
</tr>
<tr>
<td>U.S. Federal</td>
</tr>
</tbody>
</table>
Planning Committee Membership

Action
Approve

Special Election Results — 2017-2019 Term
The Planning Committee (PC) opened nominations for vacant positions from February 20 through March 5, 2018, per the PC Charter. The following candidate was the sole nominee to fill the open position in Sector 8 through the 2019 term.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Nominated Member</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Large End-Use Electricity Customer</td>
<td>Todd Snitchler</td>
<td>American Petroleum Institute (API)</td>
</tr>
</tbody>
</table>

No other nominations were received. Two positions (Sector 8 – 2018 term; and Sector 9 – 2018 term) will remain vacant until a future nomination period is held.
Agenda Item 2c
Board of Trustees Meeting
May 10, 2018

Planning Committee Charter Amendments

Action
Approve

Summary
The Planning Committee Executive Committee (PCEC) reviewed the Board-approved PC Charter in the first quarter of 2018. The following updates and revisions were identified and approved by the PC:

- Specified Action Without a Meeting policy, including authority and processes for the PCEC to act on behalf of the committee (Section 3);
- Removed the list of Regional Entities from Appendix 1: Committee Membership. Regional Entity voting weight within the committee is unchanged.
- Clarified the meaning of committee actions on deliverables (Approval, Endorsement, Acceptance, and Authorization to Post) (Appendix 2); and
- Improved clarity where necessary throughout the Charter.
Critical Infrastructure Protection Committee Membership

**Action**
Approve

**Summary**
The CIPC revised its membership for NPCC, FRCC, and EEI. The list below summarizes those changes:

**FRCC:**
- Dawn Thomas (NextEra) has replaced Patricia Boody (Tampa Electric)

**NPCC:**
- James McNierney (New York ISO) has replaced Greg Goodrich (New York ISO)
- Tom O’Neill (Hydro Quebec TransEnergie) has replaced Yan Hugues Boily (Hydro Quebec TransEnergie)
- Suzanne Black (ISO-New England) has replaced John Galloway (ISO-New England)

**Edison Electric Institute (EEI):**
- Andrea Koch (EEI) has replaced Melanie Seader (EEI)

**Reliability Issues Steering Committee (RISC):**
- Charles Abell (Ameren) will replace Lisa Carrington (Arizona Public Service) as the CIPC’s RISC representative
PER-003-2 — Operating Personnel Credentials

Action
Adopt the following standards documents and direct staff to file with applicable regulatory authorities:

- Reliability Standard – PER-003-2 Operating Personnel Credentials
  [Clean] [Redline to last approved]
- Implementation Plan for PER-003-2 Operating Personnel Credentials
  [Implementation Plan]
- Retirements
  PER-003-1 – Operating Personnel Credentials

Background
As an outcome of the periodic review of PER-003-1, the review team recommended that a clarifying footnote be added to PER-003-1 to ensure that stakeholders understand: (i) the connection between the Reliability Standard and the System Operator Certification Program Manual; and (ii) that the certifications referenced under PER-003-1 are those under the NERC System Operator Certification Program.

The Standards Committee approved a Standard Authorization Request (SAR) with those proposed changes. The SAR posted for a 30-day comment period from June 21, 2017 through July 24, 2017. The standard drafting team (SDT) reviewed the comments received from the SAR posting and developed revisions to the PER-003-1 standard. The standard was posted for a 45-day comment period and initial ballot from January 22, 2018 through March 7, 2018. The standard received a 97.5 percent industry approval with a quorum of 80.93 percent. The final ballot for PER-003-2 Operating Personnel Credentials standard closed after these materials were distributed and will be presented at the May 2018 Board of Trustees meeting.

Unresolved Minority Issues
There were no unresolved minority issues.

Additional Information
A link to the project history and files is included here for reference:

[Project 2017-02 Modifications to PER Standards]
PER-004-2 — Reliability Coordinator Staffing

**Action**
Adopt the retirement of PER-004-2 – Reliability Coordinator Staffing and the following standards documents and direct staff to file with applicable regulatory authorities:

- Implementation Plan for PER-004-2 Reliability Coordinator Staffing
  [Implementation Plan]

**Background**
As an outcome of the periodic review of PER-004-2, the review team recommended that PER-004-2 be retired, as all of its requirements are duplicative of requirements in other FERC-approved Reliability Standards that are in effect or soon to be effective. Specifically, the requirements in PER-004-2 are duplicated in the following Reliability Standards:

- PER-003-1, R1
- PER-005-2, R2 and R3
- IRO-002-4, R3 and R4
- EOP-004-2, R2
- IRO-008-2, R1, R2, and R4
- IRO-009-2, R1 through R4
- IRO-010-2, R1, R2, and R3
- IRO-014-3
- IRO-018-1, R1 R2, and R3

The Standards Committee approved a Standard Authorization Request (SAR) for the proposed retirement. The SAR was posted for a 30-day comment period from June 21, 2017 through July 24, 2017. The standard drafting team (SDT) reviewed the comments received from the SAR posting and agreed with retirement of PER-004-2 standard. The Implementation Plan for retirement of PER-004-2 was posted for a 45-day comment period and initial ballot from January 22, 2018 through March 7, 2018. The Implementation Plan received a 98.91 percent industry approval with a quorum of 81.27 percent. The final ballot for retirement of PER-004-2 Reliability Coordinator Staffing standard closed after these materials were distributed and will be presented at the May 2018 Board of Trustees meeting.

**Unresolved Minority Issues**
There were no unresolved minority issues.

**Additional Information**
A link to the project history and files is included here for reference:

[Project 2017-02 Modifications to PER Standards]
Supply Chain Activities

Action
Update

Background
On July 21, 2016, the Federal Energy Regulatory Commission (Commission) issued Order No. 829, directing NERC to develop a new or modified Reliability Standard that addresses supply chain risk management for industrial control system hardware, software, and computing and networking services associated with Bulk Electric System (BES) operations, as follows:

[The Commission directs] NERC to develop a forward-looking, objective-based Reliability Standard to require each affected entity to develop and implement a plan that includes security controls for supply chain management for industrial control system hardware, software, and services associated with bulk electric system operations. The new or modified Reliability Standard should address the following security objectives, [discussed in detail in the Order]: (1) software integrity and authenticity; (2) vendor remote access; (3) information system planning; and (4) vendor risk management and procurement controls. (P. 45)

Following the issuance of Order No. 829, NERC staff initiated Reliability Standards Project 2016-03 to develop a set of Critical Infrastructure Protection (CIP) supply chain risk management standards (Supply Chain Standards). The Supply Chain Standards, CIP-005-6, CIP-010-3, and CIP-013-1, support reliability by requiring entities to implement plans and processes to mitigate supply chain cyber security risks to high and medium impact assets. Consistent with Order No. 829, the requirements target risks in four objective areas: (1) software integrity and authenticity; (2) vendor remote access; (3) information system planning; and (4) vendor risk management and procurement controls. Following industry approval of the Supply Chain Standards on July 20, 2017, the Board of Trustees (Board) adopted the Supply Chain Standards at its August 10, 2017 meeting. NERC staff filed the Supply Chain Standards with the Commission on September 26, 2017, where they are currently pending action by the Commission. FERC issued a notice of proposed rulemaking on January 18, 2018 with comments due on March 26, 2018.¹

In adopting the Supply Chain Standards, the Board concurrently adopted additional resolutions related to implementation and risk evaluation.² The resolutions outlined in detail six actions by NERC management and stakeholders to assist in the implementation and evaluation of the Supply Chain Standards, as well as other actions to address potential supply chain risks for assets not currently subject to the standards. Collectively, the activities to address the Board’s supply chain resolutions will establish a common understanding of the supply chain risk to the

Bulk Electric System and initiate activities to mitigate those risks. The resolutions, in summary form, include:

**Support Effective and Efficient Implementation:** NERC to commence preparations for implementation of the Supply Chain Standards using similar methods during the CIP V5 transition, and regularly report to the Board on those activities.

**Cyber Security Supply Chain Risk Study:** Study the nature and complexity of cyber security supply chain risks, including those associated with low impact assets not currently subject to the Supply Chain Standards, and develop recommendations for follow-up actions that will best address identified risks. (Interim report 12 months after adoption of the resolutions and a follow-up final report 18 months after adoption).

**Communicate Supply Chain Risks to Industry:** NERC should communicate supply chain risk developments and risks to industry and in connection with the Cyber Security Supply Chain Risk Study.

**Forum White Papers:** The Board requested that the North American Transmission Forum and the North American Generation Forum (the “Forums”) to develop (and distribute, as permissible) white papers to address best and leading practices in supply chain management, as described in the resolution.

**Association White Papers:** The Board requested that the National Rural Electric Cooperative Association and the American Public Power Association (the “Associations”) to develop (and distribute, as permissible) white papers to address best and leading practices in supply chain management, as described in the resolution, focusing on smaller entities that are not members of the Forums, for the membership of the Associations.

**Evaluate Supply Chain Standard Effectiveness:** Collaborating with NERC technical committees and other experts, NERC should develop a plan to evaluate the effectiveness of the Supply Chain Standards, as described in the resolution, and report to the Board.

As part of NERC’s petition to FERC requesting approval of the Supply Chain Standard, NERC referenced the Board resolution and provided a detailed outline of activities to support each of the resolution requests. These specific activities maintain focus and engagement of the ERO Enterprise and its stakeholders, to understand and share the complexities of the supply chain with industry, while mitigating the associated risks.

The following actions have occurred in support of the Supply Chain Standard:

2017 Q3:

- E-ISAC issued a level 2 alert in September 2017, the, pursuant to Section 810 of the NERC Rules of Procedure, regarding supply chain risks identified in DHS’s Binding Operational Directive (“BOD”) 17-01 regarding the use of a vendor’s products.
- Technical committees were informed in September 2017 of need to develop Implementation Guidance assistance.
- NERC and IEEE have a formal coordination group that has discussed the topic of supply chain risk management.
• NERC engaged APPA and NRECA in September to coordinate expectations and deliverables.

2017 Q4:
• Supply Chain Standard website established on NERC website in October 2017.
• Topic of supply chain standard was introduced to vendors at GridSecCon in October 2017.
• NERC initiated outreach to DOE and DHS.
• NERC engaged NATF and NAGF in October 2017 to coordinate expectations and deliverables.

2018 Q1
• Advisory Task Force was assembled.
• Schedule for webinars, workshops, and technical conferences in development in consultation with Advisory Task Force.
• NERC began investigating accreditation model.
• NERC initiated discussions with Advisory Task Force to either directly obtain representative equipment, or facilitate direct industry contact with national labs to test equipment.
• NERC initiated discussions with Advisory Task Force to identify common implementation concerns and lessons and to evaluate the impact of the Supply Chain Standards on all BES Cyber Systems, to include low impact.

The following actions are planned in support of the Supply Chain Standard:

2018 Q2
• NERC to initiate engagement with drafting team members to identify common concerns and lessons, to validate the Implementation Guidance developed by the Supply Chain Standards Drafting Team, and to evaluate the impact of the Supply Chain Standards on all BES Cyber Systems, to include low impact.
• Vendor advisory group to be assembled with input from Advisory Task Force.
• Small Group Advisory Sessions (SGAS) and NERC Readiness Evaluations to commence.
• Training to Regional Entity Compliance Monitoring and Enforcement Program staff to support alignment of approach in compliance monitoring and enforcement expectations for the Supply Chain Standards developed.
• NERC to engage other standard writing organizations with the assistance of the Advisory Task Force.
• Initial draft of Cyber Security Supply Chain Risk Study to be developed.
2018 Q3
- NAGF, NATF, NRECA, and APPA to deliver white papers to address best and leading practices in supply chain management, as described in the resolution.
- Initial draft of Cyber Security Supply Chain Risk Study presented to NERC Board.
- NERC to engage Advisory Task Force on compliance feedback.

2018 Q4
- NERC will develop a plan to evaluate the effectiveness of the Supply Chain Standards, as described in the resolution, and report to the Board.
- Final draft of Cyber Security Supply Chain Risk Study developed.

2019 Q1
- Cyber Security Supply Chain Risk Study presented to NERC Board.
# Table of Contents

Preface ....................................................................................................................................................................... iii

Standards Development Forecast (Continent-wide) .................................................................................................. 1

- Board of Trustees (Board) Forecast for Standard Projects in Active Development ........................................... 1
  - May 2018 ............................................................................................................................................................. 1
  - August 2018 ........................................................................................................................................................ 1
  - November 2018 ................................................................................................................................................... 1
  - 2019 ..................................................................................................................................................................... 1

- 2018 ANSI Reaccreditation ..................................................................................................................................... 1

Projects with Regulatory Directives........................................................................................................................ 1

Trend in Number of Reliability Requirements ........................................................................................................ 2

Regulatory Update ...................................................................................................................................................... 4

- NERC Regulatory Update- Standards .................................................................................................................. 4
  - January 1, 2018 – March 31, 2018 ..................................................................................................................... 4

Standards Committee Report ..................................................................................................................................... 7

- Special Election Results ....................................................................................................................................... 7
Preface

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to ensure the reliability of the bulk power system (BPS) in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the BPS through system awareness; and educates, trains, and certifies industry personnel. NERC’s area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico. NERC is the electric reliability organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. NERC’s jurisdiction includes users, owners, and operators of the BPS, which serves more than 334 million people.

The North American BPS is divided into the eight Regional Entity (RE) boundaries, as shown in the map and corresponding table below.

The North American BPS is divided into eight RE boundaries. The highlighted areas denote overlap as some load-serving entities participate in one Region while associated transmission owners/operators participate in another.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCC</td>
<td>Florida Reliability Coordinating Council</td>
</tr>
<tr>
<td>MRO</td>
<td>Midwest Reliability Organization</td>
</tr>
<tr>
<td>NPCC</td>
<td>Northeast Power Coordinating Council</td>
</tr>
<tr>
<td>RF</td>
<td>ReliabilityFirst</td>
</tr>
<tr>
<td>SERC</td>
<td>SERC Reliability Corporation</td>
</tr>
<tr>
<td>SPP RE</td>
<td>Southwest Power Pool Regional Entity</td>
</tr>
<tr>
<td>Texas RE</td>
<td>Texas Reliability Entity</td>
</tr>
<tr>
<td>WECC</td>
<td>Western Electricity Coordinating Council</td>
</tr>
</tbody>
</table>
Standards Development Forecast (Continent-wide)

Board Forecast for Standard Projects in Active Development

May 2018

- Project 2017-02: Modifications to Personnel Performance, Training, and Qualifications Standards (PER-003, and PER-004)

August 2018

- Project 2017-06 Modifications to BAL-002-2
- Project 2016-02: Modifications to CIP Standards (CIP-002, CIP-012, and Control Center definition)

November 2018

- Project 2015-10: Single Points of Failure (TPL-001)

2019

- Project 2015-09: Establish and Communicate System Operating Limits
- Project 2016-02: Modifications to CIP Standards (Revisions related to Transition Advisory Group Identified Issues)
- Project 2017-07: Standards Alignment with Registration
- Project 2017-01: Modifications to BAL-003-1.1
- Project 2018-01: Canadian-specific Revisions to TPL-007-2

2018 ANSI Reaccreditation

In accordance with the accreditation processes of the American National Standards Institute (ANSI), NERC will begin the process of seeking reaccreditation of its standard development processes later in 2018. These efforts will be timed to coincide with the completion of an ongoing project to revise certain sections of the NERC Standard Processes Manual relating to field tests, interpretations, and supporting technical documents. NERC staff will continue to keep the Board updated on the status of reaccreditation.

Projects with Regulatory Directives

Table 1 below, lists the current projects with regulatory directives. As of April 30, 2018, there are seven standards-related directives to be resolved through standards development activities (not including non-standards related directives).

<table>
<thead>
<tr>
<th>Project</th>
<th>Regulatory Directives</th>
<th>Regulatory Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 2015-09 Establish and Communicate System Operating Limits</td>
<td>2</td>
<td>N/A</td>
</tr>
<tr>
<td>Project 2015-10 Single Points of Failure</td>
<td>2</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Table 1: Projects with Regulatory Directives

<table>
<thead>
<tr>
<th>Project</th>
<th>Regulatory Directives</th>
<th>Regulatory Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 2016-02 Modifications to CIP Standards (Revisions unrelated to Definition of “Low Impact External Routable Connectivity”)</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td>Project 2017-06 Modifications to BAL-002</td>
<td>2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Trend in Number of Reliability Requirements

As NERC Reliability Standards continue to mature, NERC assesses the trend in the total number of requirements in the United States since 2007 when Reliability Standards became enforceable. The US Effective Date Status/Functional Applicability\(^1\) spreadsheet was used to analyze the number of requirements based on the U.S. Effective Date shown in the charts below. Figure 1 displays the **Trend in Number of Requirement for Continent-wide Standards**, while Figure 2 displays similar data for regional standards.\(^2\) Standards with variances were not included in the count. Projections from projects that include standards currently under development are also included in the total number of requirements based on their projected effective date.\(^3\)

The total number of requirements indicates a constant trend line for the last four years, with a slight decline from 2017 to 2018 for Continent-wide Standards. These was a significant decline in total number of requirements from 2016 to 2017 for Regional Reliability Standards, with 504 continent-wide requirements and 73 Regional Reliability standards forecast for 2027.

---

\(^1\) Available from the Standards section of the NERC website: [http://www.nerc.com/pa/Stand/Pages/default.aspx](http://www.nerc.com/pa/Stand/Pages/default.aspx)

\(^2\) Charts were developed using Q3 2017 data.

\(^3\) These projects include the following: Project 2013-03 (TPL-007-2), Project 2016-04 (PRC-025-2), Project 2015-09 (FAC-010-4, FAC-011-4, FAC-014-3), Project 2017-01 (BAL-003-2), Project 2015-10 (TPL-001-5), Project 2017-02 (PER-003-2, PER-004-2), Project 2016-02 (CIP-003-7(i)), Project 2017-06 (BAL-002-3), and Project 2016-03 (CIP-005-6, CIP-010-3, CIP-013-1).
Figure 2: Trend for Number of Requirements for Regional Reliability Standards
### NERC Regulatory Update- Standards
**January 1, 2018 – March 31, 2018**

**NERC FILINGS TO FERC**

<table>
<thead>
<tr>
<th>FERC Docket No.</th>
<th>Filing Description</th>
<th>FERC Submittal Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM18-8-000</td>
<td>Petition of NERC for Approval of Proposed Reliability Standard TPL-007-2</td>
<td>1/22/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted a petition for approval of proposed Reliability Standard TPL-007-2 (Transmission System Planned Performance for Geomagnetic Disturbance Events).</td>
<td></td>
</tr>
<tr>
<td>RM16-22-000</td>
<td>Comments of NERC in Response to Notice of Proposed Rulemaking</td>
<td>1/29/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted comments to FERC’s Notice of Proposed Rulemaking (“NOPR”) proposing to approve: (1) Reliability Standards PRC-027-1 (Coordination of Protection Systems for Performance During Faults) and PER-006-1 (Specific Training for Personnel); and (2) the retirement of Reliability Standard PRC-001-1.1(ii).</td>
<td></td>
</tr>
<tr>
<td>RR18-2-000</td>
<td>Petition of NERC for Approval of Revised SERC Regional Reliability Standards Development Procedure</td>
<td>2/12/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted a petition for approval of the revised SERC Regional Reliability Standards Development Procedure (“RSDP”). Several revisions were made to update the RSDP and add an Errata provision.</td>
<td></td>
</tr>
<tr>
<td>RM18-2-000</td>
<td>Comments of NERC in Response to Notice of Proposed Rulemaking regarding Critical Infrastructure Protection Reliability Standards</td>
<td>2/26/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted comments in response to FERC’s NOPR proposing to direct NERC to revise the Critical Infrastructure Protection Reliability Standards to broaden the reporting requirements for Cyber Security Incidents.</td>
<td></td>
</tr>
<tr>
<td>RD18-1-000</td>
<td>Joint Petition of NERC and WECC for Approval of Retirement of Regional Reliability Standard VAR-002-WECC-2</td>
<td>3/7/2018</td>
</tr>
<tr>
<td>RD18-2-000</td>
<td>Joint Petition of NERC and WECC for Approval of Proposed Regional Reliability Standard BAL-004-WECC-3</td>
<td>3/8/2018</td>
</tr>
<tr>
<td></td>
<td>NERC and WECC submitted a joint petition for approval of proposed Regional Reliability Standard BAL-004-WECC-3 (Automatic Time Error Correction).</td>
<td></td>
</tr>
<tr>
<td>FERC Docket No.</td>
<td>Filing Description</td>
<td>FERC Submittal Date</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>RD18-3-000</td>
<td>Joint Petition of NERC and WECC for Approval of Retirement of Regional Reliability Standard PRC-004-WECC-2</td>
<td>3/9/2018</td>
</tr>
<tr>
<td></td>
<td>NERC and WECC submitted a joint petition for the approval of the retirement of Regional Reliability Standard PRC-004-WECC-2.</td>
<td></td>
</tr>
<tr>
<td>RD18-4-000</td>
<td>Petition of NERC for Approval of Proposed Reliability Standard PRC-025-2</td>
<td>3/16/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted a petition for approval of proposed Reliability Standard PRC-025-2 (Generator Relay Loadability).</td>
<td></td>
</tr>
<tr>
<td>RD18-5-000</td>
<td>Petition of NERC and WECC for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2</td>
<td>3/16/2018</td>
</tr>
<tr>
<td></td>
<td>NERC and WECC submitted a joint petition for approval of proposed Regional Reliability Standard FAC-501-WECC-2 (Transmission Maintenance).</td>
<td></td>
</tr>
<tr>
<td>RM17-13-000</td>
<td>Comments of NERC in Response to Proposed Rulemaking</td>
<td>3/26/2018</td>
</tr>
<tr>
<td>RM12-1-000</td>
<td>Informational Filing of NERC Regarding Implementation of Reliability Standard TPL-001-4 Table 1, Footnote 12</td>
<td>3/30/2018</td>
</tr>
<tr>
<td>RM13-9-000</td>
<td>NERC submitted an informational filing reporting on the use of Reliability Standard TPL-001-4 Table 1, footnote 12.</td>
<td></td>
</tr>
<tr>
<td>RR09-6-003</td>
<td>2018 NERC Standards Report, Status and Timetable for Addressing Regulatory Directives</td>
<td>3/30/2018</td>
</tr>
<tr>
<td></td>
<td>NERC submitted its 2018 NERC Standards Report, Status and Timetable for Addressing Regulatory Directives. The annual report is made in accordance with Section 321.6 of the NERC Rules of Procedure.</td>
<td></td>
</tr>
</tbody>
</table>
## FERC ISSUANCES

<table>
<thead>
<tr>
<th>FERC Docket No.</th>
<th>Issuance Description</th>
<th>FERC Issuance Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM17-13-000</td>
<td><strong>Notice of Proposed Rulemaking Proposing to Approve Reliability Standards CIP-013-1, CIP-005-6, and CIP-010-3</strong></td>
<td>1/18/2018</td>
</tr>
<tr>
<td>RM17-12-000</td>
<td><strong>Order No. 840 Approving Reliability Standards EOP-004-4, EOP-005-3, EOP-006-3 and EOP-008-2</strong></td>
<td>1/18/2018</td>
</tr>
<tr>
<td>RR18-1-000</td>
<td><strong>Letter Order Accepting Appendix 3D ROP revisions</strong></td>
<td>3/9/2018</td>
</tr>
</tbody>
</table>

FERC issued a NOPR proposing to approve Reliability Standards CIP-013-1, CIP-005-6, and CIP-010-3. FERC also proposes to direct NERC to (i) modify the CIP Reliability Standards to include Electronic Access Control and Monitoring Systems associated with medium and high impact Bulk Electric Cyber Systems within the scope of the supply chain risk management Reliability Standards and (ii) evaluate the risks presented by Physical Access Control Systems and Protected Cyber Assets as part of the study already proposed by the NERC Board of Trustees to evaluate the scope and effectiveness of the proposed standards.

FERC issued a final rule approving: (i) revised Reliability Standards EOP-004-4, EOP-005-3, EOP-006-3 and EOP-008-2; (ii) the associated violation risk factors and violation severity levels; (iii) implementation plans; and (iv) retirement of currently-effective Reliability Standards EOP-004-3, EOP-005-2, EOP-006-2, and EOP-008-1.

FERC issues a letter order accepting NERC's November 21, 2017 filing of proposed revisions to NERC Rules of Procedure Appendix 3D, Registered Ballot Body Criteria, to incorporate limitations of membership in Segment 2 to only Independent System Operators and Regional Transmission Organizations.
Standards Committee Report

At its January 17 meeting, the Standards Committee (SC) approved a revised Functional Model Advisory Group Scope of Work, approved the Technical Rationale Transition Plan, which moves Guidelines and Technical Basis to Technical Rationale, and elected the remaining members of the Standards Committee Executive Committee (SCEC).

At its March 14 meeting, the SC endorsed the recommendations of the SCEC for the nomination of individuals to Standard Authorization Request and Standard Drafting Teams. In collaboration with NERC staff, the SC agreed that a clarifying statement will be added to the Standards Development Process – Participant Conduct Policy and Standards Drafting Team Scope stating that the participants shall not use the process for commercial or private purposes. Also at the March meeting, the proposed resilience framework from the Reliability Issues Steering Committee (RISC) was discussed. The SC provided input to the RISC on ways the activities of the SC support the resilience framework.

The SC finalized its 2018-2020 Strategic Work Plan with a focus on Periodic Reviews, Standards Grading, Guidelines and Technical Basis, and the Standards Efficiency Review. The SC will present the 2018-2020 Strategic Work Plan for acceptance in its formal report to the Board.

Special Election Results
During the 2017 Independent Evaluation of NERC’s Standard Processes Manual Requirements, NERC staff was unable to provide evidence that the SC notified the Board of the special election that occurred in March of 2015 for Segments 8 and 9. An announcement was sent at the time to the NERC Roster email distribution list, but changes in the distribution program in 2017 made it impossible to determine specific recipients for prior years. As a result, the following election results are provided:

Segment 8
Six votes were cast representing approximately 27.27 percent of the total membership of Segment 8. Robert Blohm received the majority vote and is elected to fill the remainder of two-year term ending December 31, 2015.

Segment 9 (One-year term)
Two votes were cast representing approximately 6.25 percent of the total membership of Segment 9. Jerry Maio received the majority vote and is elected to fill the remainder of two-year term ending December 31, 2015.

Segment 9 (Two-year term)
Two votes were cast representing approximately 6.25 percent of the total membership of Segment 9. Mark Harris received the majority vote and is elected to fill the remainder of two-year term ending December 31, 2016.
**Proposed Amendments to the Delegation Agreement with Midwest Reliability Organization Amended Exhibit B (MRO Bylaws)**

**Action**
Approve

**Background**
The geographic footprint for the Midwest Reliability Organization (MRO) Regional Entity (as Exhibit A to the Regional Delegation Agreement) is expected to expand on July 1, 2018, to include 109 registered entities currently registered in Southwest Power Pool Regional Entity if the Federal Energy Regulatory Commission approves the termination of the Regional Delegation Agreement between Southwest Power Pool, Inc. and NERC effective August 31, 2018. To reflect the geographic representation of this expanded footprint on the MRO Board of Directors and to increase the independence of the MRO Board of Directors, NERC supports the proposed changes approved by the MRO Board of Directors and February 27, 2018 and proposes amendments to the MRO bylaws. NERC is also proposing additional ministerial changes to other sections of the MRO bylaws.

**Discussion**
The proposed amendments to the MRO bylaws specifically include the addition of four directors - two Independent Directors and two Regional Directors – increasing the total number of directors from 19 to 23. The two additional Independent Directors as well as the two new Regional Directors shall be nominated by the MRO Board of Directors and elected by MRO Members.

**New Section 1.22 – Defining a “Regional Director”**
NERC proposes a new term “Regional Director” to the MRO bylaws. This new type of director is an employee of an MRO Member who meets the minimum representation requirements for the seven industry sectors in Section 1.14 (Industry Sectors). The creation of a Regional directorship will allow the MRO Board of Directors to nominate individuals from different parts of the Region to ensure geographical balance and seek particular expertise. Initially, the Regional Directors will be nominated from the SPP RE Region.

**Section 7.3 – Composition of the Board of Directors**
NERC proposes to increase the total number of directors on the board from 19 to 23 – representing the addition of two new Regional Directors and two additional Independent Directors.
The two new Regional Directors shall be nominated by the MRO Board from one or two industry sectors in Section 1.14 (Industry Sectors) and elected by the Members.

NERC proposes to increase the number of Independent Directors that are nominated by the Board of Directors and elected by the Members from two to four.

Seventeen out of the 23 Directors will continue to represent industry sectors and will be both “nominated and elected” by their respective industry sectors.
Section 7.4 – Term of Directors
NERC proposes to define the term for both Regional and Independent Director positions as three years. All terms are proposed to end on December 31 of a given year.

NERC also clarifies that the initial term for these four new directors may be shorter than three years if it begins after January 1 of a given year.

With the creation of a “Regional Director” position, NERC proposes to define the removal requirements for this position as “any time by the affirmative vote of two-thirds (2/3) of the Members.” This contrasts with the removal requirements for an Independent Director which are “by the affirmative vote of two-thirds (2/3) of the remaining directors.”

Section 7.5 – Compensation and Reimbursement
NERC clarifies that there is no compensation for directors employed by an MRO Member.

Section 7.6 – Vacancies
NERC clarifies that when a successor director takes over a term, she or he will hold office only for the period of a given term during which the vacancy exists.

If approved, MRO’s Board of Directors will include four Independent Directors, two Regional Directors and seventeen directors representing seven Industry Sectors.

The amended MRO Bylaws continue to meet the five governance criteria specified in Exhibit B to the Regional Delegation Agreement. These proposed amendments were approved by the MRO Board of Directors on various dates beginning in June 2017, with the final proposed amendments approved on February 27, 2018 and by the MRO Members on March 21, 2018.
Plan for Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments

Action
Update

Background
Two reliability assessments published in 2017 recommended that industry and NERC consider potential Reliability Standard improvements and/or Reliability Guideline development. The recommendations made in each assessment are provided below:

- **Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System (Natural Gas Disruption Assessment):**¹ NERC, with industry support, should enhance its Reliability Guidelines and/or Standards as necessary to include additional planning and operating requirements for analyzing disruptions to the natural gas infrastructure and their impacts on the reliable operation of the bulk power system (BPS). The standards should include developing and deploying mitigation plans to address reliability risks caused by outages of significant natural gas infrastructure.

- **2017 Long-Term Reliability Assessment (LTRA):**² NERC should conduct a comprehensive evaluation of its Reliability Standards to ensure compatibility with nonsynchronous and distributed energy resources, as well as for completeness related to essential reliability services, generator performance, system protection and control, and balancing functions.

Activities

- **Recommendation from Natural Gas Disruption Assessment:**
The Operating Committee (OC) and Planning Committee (PC) are addressing the recommendations through the following actions:
  - NERC requested the PC establish an advisory group³ to identify potential enhancements to the existing transmission planning documents. This includes potentially altering Reliability Standard TPL-001-4 and developing reliability guidelines. This activity will emphasize planning for natural gas pipeline, storage, compressor station, liquefied natural gas (LNG) or supply disruptions. A report assessing the potential enhancements will be developed and distributed to the NERC MRC and Board of Trustees.

³ The NERC Planning Committee is looking for additional industry members to join this ad hoc Advisory Group. If interested, please submit your nomination to the PC Secretary, Mark Olson. The Advisory Group meets periodically monthly and the schedule provides for meetings through 2018.
As part of its review of potential enhancements to the existing transmission planning Reliability Standards, the PC Advisory Group has decided to conduct a Natural Gas and Electric Reliability Workshop in the June/July 2018 time period. The objective of the workshop would be to convene subject matter experts in both the power and gas industries with the intent to determine how to adequately address NERC standards and/or guidelines to ensure that disruptions to natural gas supply are adequately included in planning studies. Subject matter experts from industry will include members of the NERC PC, electric utilities, and natural gas industry trade organizations such as the American Gas Association, Natural Gas Supply Association, and American Petroleum Institute.

In December 2017, the OC approved the Gas and Electrical Operational Coordination Considerations Guideline. This guideline provides a set of principles and strategies that may be adopted should close coordination be required as a result of increased interdependencies.

The above activities, with the exception of the Gas and Electrical Operational Coordination Considerations Guideline which is already complete, are expected to be completed by the fourth quarter of 2018.

Recommendations from 2017 LTRA:
The following actions are being taken to address the recommendations:

- **Distributed Energy Resources:** The LTRA identified the need to revise the MOD-032 Reliability Standard to ensure its applicability to Distribution Providers requiring the provision of any pertinent data related to distributed resources with Transmission Planners and Planning Coordinators. This is presently being addressed with Project 2017-07 Standards Alignment with Registration, which reassigns Load Serving Entity responsibilities to the Distribution Provider.

- **Inverter-Based Resources:** The Inverter-Based Resources Task Force is exploring the performance characteristics of utility-scale inverter based resources directly connected to the BPS. This task force continues to develop recommended performance characteristics along with recommendations related to inverter-based resource performance, analysis, and modeling.

- **Frequency Control and Balancing:** Under the direction of the OC, the Resources Subcommittee is actively addressing potential changes to the BAL-003 Reliability Standard to ensure sufficient generator and system performance during frequency excursions. A Standard Authorization Request (SAR) is in place and a project is identified in the Reliability Standards Development Plan for 2018-2020.

- **Reactive Power Requirements:** The 2017 LTRA identified a potential trend with increasing amounts of reactive power being supplied by nonsynchronous resources such as inverter-based generating resources and transmission-connected dynamic reactive power electronic devices such as static VAR compensators or static synchronous compensators. This trend is resulting from replacement of reactive power support from conventional synchronous resources and classical reactive

---


power sources (e.g., fixed and switched shunts) with inverter based controllers. NERC Reliability Standards should be reviewed to ensure they actively account for the performance of emerging technologies that supply reactive power support on the BPS. Performance specifications and coordination of the controls of these devices are needed. Inventory, device projections, and performance data are needed to evaluate the risk. In 2018 within the Planning Committee:

- The Reliability Assessment Subcommittee is collecting projections of reactive resources to understand the magnitude of risk exposure.
- The System Analysis and Modeling Subcommittee is tasked with assessing Reliability Standards for applicability to transmission-connected reactive controllers, address any potential reliability gaps and identify potential areas for enhancement.

- On March 7, 2018, the NERC PC conducted a distributed energy resource brainstorming session to consider next steps beyond those previously identified by the Essential Reliability Services Working Group and Distributed Energy Resources Task Force. The PC is evaluating the information gathered and will assess how to complete any additional work tasks.
Reliability Coordinator Function in the Western Interconnection

Action
Update

Summary
The Western Interconnection (WI) has been served by a single Reliability Coordinator (RC) since January 2009. Following the September 8, 2011 Southwest Outage, the WECC Board of Directors began a process to establish Peak Reliability (Peak) as an independent company to provide RC services for the Western Interconnection. In January 2014, Peak officially assumed the RC assets and began performing the RC function for the WI (less Alberta who provides its own RC-like service).

During 2017, a group of entities known as the Mountain West Transmission Group (MWTG) began exploring joining the Southwest Power Pool (SPP) RTO as well as the provision of RC services. In December 2017, Peak announced a formal agreement with PJM Connext to explore reliability services and markets in the West. In January 2018, the California Independent System Operator (CAISO) announced that it would become its own RC and offer these services to other BAs and Transmission Operators (TOP) in the west.

While the ultimate configuration of RCs and the affiliations of TOPs and BAs to those RCs is not yet settled, it is clear that over the next 18-24 months, there will be more than one RC in the WI.

As the Regional Entity for the WI, WECC has well-defined responsibilities and authorities related to this transition:

- Ensure that the RC(s) that are formed are certified to perform the registered function;
- Ensure that all TOPs and BAs are aligned with a certified RC (mapping); and
- Perform ongoing compliance monitoring of the RCs to ensure they are compliant with the applicable Standards.

WECC is working closely with NERC to assure the reliability and security of the bulk power system in the WI during this transition. The presentation will discuss activities WECC and NERC have underway to understand the evolving situation and activities planned in preparation for the necessary certifications.
**E-ISAC Code of Conduct**

**Action**
Update

**Background**
In May 2014, the North American Electric Reliability Corporation (NERC) adopted an Electricity Information Sharing and Analysis Center (E-ISAC) Code of Conduct to implement the principles outlined in the NERC Board of Trustees’ “Policy on the Role of the [E-ISAC] vis-à-vis NERC’s Compliance Monitoring and Enforcement Program” (Policy). The Policy, which was adopted by the Board in March 2013, outlines two general principles:

1. E-ISAC personnel shall not, directly or indirectly, report or convey information about possible violations they may encounter or learn about in the course of their E-ISAC activities to the compliance monitoring and enforcement program [CMEP] or to personnel assigned to that program.

2. Compliance monitoring and enforcement personnel shall not, directly or indirectly, obtain or seek to obtain information about possible violations of Reliability Standards from E-ISAC personnel.

To further the principles of the Policy, the E-ISAC Code of Conduct outlines, among other things, the parameters within which the E-ISAC may share member-provided information outside of the E-ISAC. Subject to limited exceptions, attributable information that E-ISAC members voluntarily provide to the E-ISAC cannot be shared with other NERC or Regional Entity personnel or outside of the ERO Enterprise. In no event may such information be shared with CMEP personnel.

This general prohibition extends to all member-provided attributable information, including, among others, information E-ISAC members post on the portal or share with the E-ISAC during other E-ISAC activities. Additionally, if the E-ISAC participates in any industry programs or initiatives, such as the Cyber Mutual Assistance Program, any information obtained through such programs or initiatives would be subject to the E-ISAC Code of Conduct and the confidentiality provisions in Section 1500 of the NERC Rules of Procedure.
Operating Committee Report

Action
Information

Operating Committee’s (OC) Major Accomplishments for 2018 (year-to-date)

1. OC and Subcommittee Work Plans – The OC Executive Committee and the leadership of its subcommittees met on January 10, 2018 to review and update the OC Work Plan. At the March, 2018 OC meeting, the OC reviewed and approved the OC Work Plans.

2. Resiliency Framework – The Reliability Issues Steering Committee (RISC) has requested that each standing committee provide the RISC, on or before March 28, 2018, with their views on how BPS resilience is currently being addressed within the scope of their committee’s responsibilities and recommend any additional activities they believe should be undertaken. The OC provided its input to the Chair of the RISC, Peter Brandien on March 27, 2018.

OC’s Major Initiatives for 2018

1. OC Strategic Plan – The OC is reviewing and revising its Strategic Plan to ensure alignment with the NERC Strategic Plan. At its March 2018 meeting, the OC formed a task team to review and revise its Strategic Plan to ensure alignment with the updated NERC Strategic Plan. The OC leadership and NERC staff continue to monitor progress.

2. Reliability Guidelines and Reference Documents – Each subcommittee will develop a summary for each of the Reliability Guidelines and Reference Documents under their purview. The OC has also established a team to develop a formal roll-out process for new or revised documents to include industry webinars to inform industry. The OC is developing, or has developed, Reliability Guidelines and Reference Documents addressing:
   a. A revision to the Reliability Guideline: Primary Frequency Control to include asynchronous generation.
   b. Develop a Reliability Coordinator Reliability Plan Reference Document to review and approve reliability plans.
   c. Develop a Reliability Guideline for Operator Recognition Cyber Intrusion into Operating System to provide System Operators with information on the recognition of cyber intrusion into their operating systems
   d. Reliability Guideline: Generating Unit Operations During Complete Loss of Communications per OC Charter requirement to review all Reliability Guideline and Reference Documents at least once every three years.
   e. Reliability Guideline: Loss of Real-Time Reliability Tools Capability/Loss of Equipment Significantly Affecting ICCP Data per OC Charter requirement to review all Reliability Guideline and Reference Documents at least once every three years.
   f. NERC Balancing and Frequency Control Reference Document will be reviewed and determine whether to update this document or retire if the topics are addressed in other reference documents.
3. **Operating Reliability Subcommittee (ORS)** – The ORS will continue to focus on regular review, update, and communication of Reference Documents and Reliability Guidelines within its area of responsibility and is working on several new guideline development initiatives. The ORS will also continue to prepare for implementation of the Interchange Distribution Calculator Parallel Flow Visualization field trial.

4. **Resources Subcommittee (RS)** – The RS will review and revise several reliability guidelines, reference documents and training guides under its purview. The RS will also provide ongoing support of the NERC Planning Committee’s Performance Analysis Subcommittee metric M4, Interconnection Frequency Response for the annual State of Reliability Report.


7. **Coordination with other groups** – The OC continues efforts to better coordinate its activities with other industry groups such as the North American Transmission Forum (NATF), North American Generator Forum (NAGF) and ISO/RTO Council (IRC).

**March 2018 Meeting Summary:**
The following is a summary of the OC’s March 2018 meeting, which highlights the latest activities of the OC and its associated subcommittees in support of the NERC or OC mission and corporate goals. The March 2018 OC Meeting Minutes are posted on the NERC website.

1. **Joint Planning and Operating Committee Meeting** – A joint meeting of the Planning Committee and the Operating Committee was held from 10:00 a.m. to 12:00 p.m. on March 6, 2018. The agenda for the joint session allowed the committees to discuss agenda items of mutual interest to both committees which included:
   a. Reliability and Security Guideline Development Update
   b. 2017/2018 Winter Reliability Observations
   d. Addressing 2017 Reliability Assessment Report Recommendations
   e. 2018 State of Reliability Report Update
   f. Standards Efficiency Review
   g. Emerging Issues Roundtable

2. **OC Nominating Committee** – Doug Peterchuck and Rich Hydzik were elected to the Nominating Committee. Current Nominating Committee member Keith Carman was appointed as the chair.

3. **Operating Reliability Subcommittee (ORS)** – ORS Chair David Devereaux provide an overview of subcommittee’s status report. Highlights of the report include:
   a. A joint ORS/CIPC task team has prepared a draft guideline: Reliability Guideline for Operator Recognition Cyber Intrusion into Operating System.
b. The ORS continues to work with NERC staff to ensure that the Reliability Coordinator Reliability Plan Reference Document aligns with the NERC Registration "Assessment Master."

c. The ORS discussed pending changes to the MISO and PJM Reliability Plans. These expected minor changes are required due to the OVEC Balancing Area moving from MISO to the PJM RC area.

d. As part of the 2018 work plan, the ORS will review and revise the ORS Scope document. Changes are required due to the transition of reliability tools away from NERC.

4. **Resources Subcommittee** - RS Chair Tom Pruitt provided an overview of subcommittee’s status report. Highlights of the report include:

   a. Report on Frequency Control Requirements for Reliable Interconnection Frequency Response – released on 2/14/18. FERC commissioned Lawrence Berkeley National Laboratory (LBNL) to produce the report. Plans are underway for the LBNL team to present jointly to the BAL-003 SDT and RS (meetings coordinated back-to-back at same location).

   b. Final Rule on Requirements for the Provision of Primary Frequency Response – released on 2/15/18. The rule adopts requirements to ensure that interconnecting generating facilities are capable of providing primary frequency response. The minimum parameters referenced in the order are tied directly to the Reliability Guideline: Primary Frequency Control.

   c. Develop Summaries for Reliability Guidelines and Reference Documents – This task was added to the RS Action Log to develop the summaries, present webinars, and include FAQ documents as needed. New documents and those up for review/revision will be handled first.

   d. NERC Balancing and Frequency Control Reference Document – A subteam (led by Danielle Croop, PJM) was formed to update this document and convert it into a reference document (not a technical document). Target completion date end of 2018.

5. **Events Analysis Subcommittee (EAS)** – EAS Chair Rich Hydzik provided an overview of the subcommittee’s status report. Highlights of the report include:

   a. Texas RE Hurricane Harvey Lesson Learned presentation.

   b. EMS Working Group conducted a webinar on February 27th to review the OC approved Reference Document on Risks and Mitigations for Losing EMS Functions and answer questions from industry. The presentations from this event are now available on the NERC website.

   c. 6th Annual Monitoring and Situational Awareness Technical Conference is planned for October 2-3, 2018 at MISO Energy located in Carmel, IN. An announcement with more conference details and travel information will be sent in early summer.

   EAS Chair Rich Hydzik presented an update on Lessons Learned that have been published since the December OC meeting and on two Lessons Learned that will be published in the coming weeks. Lessons Learned may be accessed from the NERC website [here](#).

6. **Personnel Subcommittee** – PS Chair Rocky Williamson provided an overview of subcommittee’s status report. Highlights of the report include:
a. The PS is working on a comprehensive evaluation of adult learning principles and instructional design concepts in order to develop program criteria that results in quality learning events.

b. The PS is recruiting new members for the Continuing Education Review Panel (CERP).

7. **Essential Reliability Services Working Group (ERSWG)** – ERSWG Co-chair Todd Lucas presented an overview of the following documents which were approved by the OC:
   a. ERS Forward Looking Measure 6 Technical Brief
   b. ERS Forward Looking Measures 1, 2, & 4 Technical Brief
   c. ERS Forward Looking Measures 1, 2, & 4 Policy Brief
   d. ERS Measure 3 Summary & Recommendation Brief
   e. ERS Measure 4 provides holistic evaluation
   f. ERS Framework Measure 6 - Historical Balancing/Ramping Analysis

8. **Reliability Guideline Outreach Effort** - Formal Reliability Guideline Roll Out Process – A section was added to the OC Strategic Plan during the last revision pertaining to reliability guidelines and reference document development and outreach. The OC needs to develop a formal process for rolling out revised documents. Sidney Jackson, Doug Peterchuck, James Fletcher, Dick Pursley and Alan Bern volunteered to develop the process.

9. **Standards Efficiency Review** – The OC has the opportunity to provide requirement grades to NERC for the standards efficiency review. The Executive Committee and subcommittee leadership is work with Chair Linke to develop the grading for this review. Chair Linke will send out the documents to begin the process. Grades are due April 16, 2018.

10. **Industry Outreach efforts** – In order to better coordinate activities within industry, the OC invited representatives from the NAGF and the NATF to participate in the March, 2018 meeting. Alan Schriver (NAGF) and Ken Keels (NATF) provided an overview of their respective roles and responsibilities in an effort to better coordinate activities with the NERC OC.

11. **Lessons Learned** – Bob Collins, Texas Regional Entity, presented a Lessons Learned relating to the impacts of Hurricane Harvey. Some of the highlights include:
   a. ERCOT is pursuing a wide area overview display of the ERCOT Transmission Grid with weather information integrated.
   b. ERCOT is planning to implement an N-1-1 Automated Contingency Analysis application to allow for quick assessments of potential anticipated operating conditions before facilities are lost due to severe weather.
   c. ERCOT is going to evaluate feasibility of incorporating outages in undocumented Forced Outage Detection (FOD) application into future hour studies.
   d. Suggest "hardening" of transmission facilities in hurricane impact zone, primarily wood pole damage.
   e. Generation sites and industrial facilities "locked down" for extended periods due to flooding caused issues with food and medical supplies for employees.
f. Establishment of contacts with State and Local Emergency Management coordinators and key stakeholders was key in maintaining continuity and prioritization of the recovery effort.

g. Use of Facebook, Twitter, Power Alert Service, and text messages was effective in keeping customers informed.

h. Use of aerial drones were effective to assess damage, evaluate work conditions, and enable real-time situational awareness. Infrared capabilities helped identify equipment that needed further inspection.

12. **Reliability Standard TOP-001-4** – EAS Chair Hydzik noted concerns raised by the EAS with language in the requirements of TOP-001-4 which goes into effect in July, 2018. In particular, the requirement language is vague and open to interpretation. The concerns relate to:

   a. R10.3 TOP needs non-BES facility information and status for its TOP Area
   b. R10.6 TOP needs non-BES facility information outside its TOP Area as identified by TOP
   c. R20 and R21 - Redundancy and testing questions - TOP
   d. R23 and R24 - Redundancy and testing questions - BA

Suggestions were made to coordinate any such development with members of the Standards Drafting Team, the NATF and the CIP Standards Drafting Team, which is developing CIP-012 standard and a revised definition of "Control Center". The ORS will research the intent of requirements (R10.3 and R10.6) from documentation from the standards development process. The ORS will also use the information they gather to determine whether to develop a guideline or compliance guideline or pursue another avenue. The EAS will review R20 and R21 as requested to clarify "redundant and diversely routed" language as well as testing requirements. Doug Peterchuck, chair of the Real-time Assessments (RTA) Task Force, will lead a new task force to address RTA quality as identified in TOP-010, R3 and the associated IRO-018 requirement. Anyone interested in assisting with this discussion should contact Lloyd or Doug.
Planning Committee Report

Action
Information

Summary
The Planning Committee (PC) is pleased to provide this update to the Board for their review.

Forward Perspectives

- **PC Activities Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments**
  
  *No Board Approval Required*

  As discussed in the NERC presentation at the MRC meeting, a Planning Committee based Advisory Group was established to discuss and develop strategies for NERC’s consideration on Natural Gas Disruptions and the LTRA recommendations pertaining to potential enhancements to the existing transmission planning documents (e.g., considerations for revising TPL-001-4, and/or development of reliability guidelines), as well as the potential for creation of new planning documents. The Advisory Group is meeting at least once monthly and the PC has acknowledged that the membership can be opened to the industry to create the necessary knowledge base. In our game plan, in addition to Advisory Group meetings, the Advisory Group is preparing for a workshop in July 2018. Following the workshop, the Advisory Group will consider the data gathered and create a report assessing the potential enhancements. The report outlining findings and recommendations is currently expected to be available to the NERC Board, MRC, and industry in December 2018.

- **PC Activities Addressing System Reliability with Increasing Distributed Energy Resources (DER)**
  
  *No Board Approval Required*

  On March 7, 2018, the NERC Planning Committee conducted a DER brainstorming session to consider next steps beyond those previously identified by the Essential Reliability Services Working Group and Distributed Energy Resources Task Force. There were four teams looking at a variety of topics ranging from needs for additional guidance and or standards on modeling and collection, jurisdictional considerations, performance, monitoring, and education. The PC is evaluating the information gathered and will be assessing whether its current subcommittee structure can handle the additional work tasks and on what timelines.

- **PC Strategic Plan**
  
  *Anticipate Requesting Board Approval in August 2018*

  The PC Executive Committee (PCEC) initiated a review of the 2017-2020 PC Strategic Plan to incorporate objectives from the 2018 ERO Reliability Risk Priorities Report (RISC
Report) and other inputs. PC action is anticipated no later than the June 2018 PC meeting.

- **NERC Essential Reliability Services Working Group (ERSWG) Briefs**
  *No Board Approval Required*

  Based upon the work scope for the ERSWG, the group has completed all expected activities outlined. The PC and ERSWG are assessing whether there are further recommendations that need to be addressed.

**Recently Completed Committee Activities and Initiatives**

- **Endorsed Implementation Guidance**
  *No Board Approval Required*

  **Protective Relaying:** The PC endorsed *Implementation Guidance for PRC-024-2 – Generator Frequency and Voltage Protective Relay Settings* to be submitted to the ERO-Enterprise. The Implementation Guidance provides technical information, examples, and methods for Generator Owners to comply with requirements that ensure generators remain connected during defined voltage excursions.

- **Approved NERC Essential Reliability Services Working Group Briefs**
  *No Board Approval Required*

  The PC approved the following items from the ERSWG:
  
  - Technical Brief on ERS Measures 1, 2, and 4 Frequency Response using a Forward-Looking Frequency Analysis
  - Brief for Regulators and Policymakers on ERS Measures 1, 2, and 4 Frequency Response using a Forward-Looking Frequency Analysis
  - Disposition of ERS Measure 3; Synchronous Inertial Response at the BA Level
  - Technical Brief on ERS Measure 6 using Forward-Looking Net Demand Ramping Variability
  - Technical Brief on Data Collection Recommendations for Distribution Energy Resources

**Future Meetings**

- June 5-6, 2018 – New Orleans, LA
- September 11-12 – Minneapolis, MN
- December 11-12 – Atlanta, GA
Critical Infrastructure Protection (CIPC) Committee Report

**Action**
Information

**Status Update**
In March, the CIPC initiated a Supply Chain Working Group made up of CIPC members, vendors, and supply chain experts to assist in the development of supply chain related guides and approaches. The charter will be approved at the June 2018 CIPC along with its chairs. The primary objectives of the Supply Chain working group will be to address the CIPC Strategic Plan task items, to develop a “Vendor Essential Practices Model,” coordinate with NERC and other interested parties to evaluate supply chain risks and evaluate opportunities to test legacy systems in collaboration with the national labs. The CIPC Strategic Plan items in summary are listed below.

**Key Activities and Initiatives for 2018 and 2019**

<table>
<thead>
<tr>
<th>Strategic Input</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERO Enterprise Long-term Strategy Focus Area #5</td>
<td>Identification and reduction of cyber and physical security Risks while improving resilience.</td>
</tr>
<tr>
<td>ERO Reliability Risk Priority - Risk Profile #8 &amp; #9</td>
<td></td>
</tr>
<tr>
<td>Remote Access Study Report</td>
<td>Address Remote Access Security Findings #1-#18</td>
</tr>
<tr>
<td>GridEx Planning &amp; Preparation</td>
<td>Collaborate with E-ISAC and industry stakeholders to plan for next GridEx and share lessons learned.</td>
</tr>
<tr>
<td>Supply Chain Risk Management</td>
<td>Legacy system testing coordination with National Labs.</td>
</tr>
<tr>
<td>CIP-014 High Impact Control Center Report</td>
<td>Security practices for High Impact Control Centers.</td>
</tr>
<tr>
<td>CIPC Priority Topic in coordination with PC</td>
<td>Reduction in asset criticality by developing design standards.</td>
</tr>
<tr>
<td>CIPC Priority Topic</td>
<td>Security implications of UAVs and clarifying the rights of stakeholders.</td>
</tr>
<tr>
<td>CIPC Priority Topic</td>
<td>Key management security guideline.</td>
</tr>
</tbody>
</table>
Personnel Certification Governance Committee Report

**Action**
Information

**Background**
This report summarizes the key activities of the Personnel Certification Governance Committee (PCGC) during 2018. The PCGC meets four times per year. Standing Task Force meetings via conference call and/or WebEx are held as needed between meetings. The February 2018 meeting minutes are under review and pending approval. Draft minutes were posted to the NERC website.

**Exam Development Activities Scheduled for 2018**
- Items Review/Analyze Statistical Performance: Jan-Dec 2018
- Write New Items: Mar-Dec 2018
- Job Task Analysis: 2018

**Strategic Planning**
The System Operator Certification Program has been in existence since 1998. The program has evolved into a solid certification program through continuous improvement. The Committee will focus on strengthening the current program through a set of directions and priorities aligned with the goals of the System Operator Certification Program.

In November 2017, the PCGC created a survey to gather input on the current System Operator Certification program and potential changes. The survey was emailed and posted to the NERC website on December 12, 2017. A total of 673 responses have been received from industry. The PCGC has set a goal of at least 10 percent of the credential holder population. The survey period has been extended to June 15, 2018. There are approximately 7,600 credential holders. The survey also targeted Continuing Education providers and registered entities.

The PCGC will analyze the survey data and use it to publish a white paper which will cover a broad range of topics; including returning to one credential, credential maintenance, recertification requirements, and length of certification period.

**2018 Tasks**
- Develop Detailed Strategic Plan
- Enhancements to new SOCCED platform
Standards Committee Report

Action
Approve the 2018-2020 Standards Committee Strategic Work Plan.

Background
The 2018-2020 Standards Committee Strategic Work Plan is presented with the understanding that the focus of standards development continues with Periodic Reviews, Standards Grading, Guidelines and Technical Basis, and the Standards Efficiency Review. The Standards Committee (SC) offers the Strategic Plan for Board of Trustees acceptance.

In addition, this report highlights some of the key activities of the SC during the first quarter of 2018.

Summary
At its January 17 meeting, the SC approved a revised Functional Model Advisory Group Scope of Work, approved the Technical Rationale Transition Plan, which moves Guidelines and Technical Basis to Technical Rationale, and elected the remaining members of the Standards Committee Executive Committee (SCEC).

At its March 14 meeting, the SC endorsed the recommendations of the SCEC for the nomination of individuals to Standard Authorization Request and Standard Drafting Teams. In collaboration with NERC staff, the SC agreed that a clarifying statement will be added to the Standards Development Process – Participant Conduct Policy and Standards Drafting Team Scope stating that the participants shall not use the process for commercial or private purposes. Also at the March meeting, the proposed resilience framework from the Reliability Issues Steering Committee (RISC) was discussed. The SC provided input to the RISC on ways the activities of the SC support the resilience framework.
2018-2020 Standards Committee Strategic Work Plan

Introduction
The 2018-2020 Standards Committee (SC) Strategic Work Plan (Plan) focuses Reliability Standards development activities on: (1) addressing Federal Energy Regulatory Commission (FERC) directives; (2) continuing Periodic Reviews (PRs); and (3) addressing emerging risks using input from the Reliability Issues Steering Committee (RISC). The SC will continue: (i) providing oversight for Reliability Standards grading activities evaluating Reliability Standards for quality and content; and (ii) prioritizing Reliability Standards development activities.

Emerging Risks
Through input by a NERC technical committee, industry, the RISC, or a governmental authority (such as FERC), the SC develops new or revised Reliability Standards, as appropriate.

Vision, Mission and Guiding Principles

Vision
A comprehensive body of Reliability Standards that collectively help to achieve an adequate level of reliability and promote reliable operation of the North American bulk power system.

Mission
For the SC to effectively manage and oversee development of a comprehensive set of Reliability Standards aligned with NERC’s strategic goals through open and inclusive processes and procedures.

Guiding Principles

- Consistent with the 2018-2020, Reliability Standards Development Plan (RSDP), this Plan recognizes the transition of a Reliability Standard development process addressing FERC directives, PRs, and emerging risks. The goals and objectives for 2018-2020 appear in the RSDP.
- SC continues to promote and implement a collaborative working environment with other NERC Standing Committees, NERC Standards staff, stakeholders, and standard drafting teams.
- SC continues to execute the Reliability Standards development process for effective and efficient use of NERC and industry resources.
- SC continues to promote and take a leadership role on consensus-building activities.
Work Plan

Task No. 1 - Periodic Reviews

- Project Management and Oversight Subcommittee and NERC staff work together to prioritize and schedule 2018 PRs for SC endorsement. Project Management and Oversight Subcommittee will use the 2017 PR Standing Team’s grading of Reliability Standards in that prioritization/scheduling by the end of February 2018.

Task No. 2 - Standards Grading

- NERC staff and the SC chair or delegate (acting in the capacity of Standing Team facilitator) will start the 2018 Reliability Standards grading as soon as practicable to provide time to conduct and comment on the grading. NERC staff will present Reliability Standard grades to the SC as an attachment to the RSDP and ask the SC to endorse the process adopted for the grading of Standards.¹ This is scheduled to be completed by June 2018 if possible, but no later than the end of August 2018 to coordinate with the development of the 2019-2021 RSDP.

Task No. 3 - Guidelines and Technical Basis

- The Technical Rationale Advisory Group (TRAG) will draft a project plan and, if necessary, draft revisions to the NERC Standard Processes Manual (SPM). Technical Rationale documents are developed as a technically sound basis to promote an understanding of a Reliability Standard’s requirements, and will not serve as Compliance Monitoring and Enforcement Program (CMEP) Implementation Guidance. The TRAG will provide a draft project plan and, if necessary, revisions to the SPM for SC endorsement by March 2018.

Task No. 4 - Standards Committee Process Subcommittee

- NERC staff and the Standards Committee Process Subcommittee will endeavor to complete all ongoing projects and seek SC endorsement, with a priority on changes to Sections 6, 7, and 11 of the SPM by December 2018. This target for completion does not apply to new tasks added in 2018.

Task No. 5 - Fourth Quarter Review of SC 2018-2020 Strategic Work Plan

- The SC will conduct a review of this Plan and provide changes for 2019-2021 to the SC for endorsement.

- The SC Executive Committee (SCEC) will evaluate the need for revisions to the SC Charter and provide proposed changes (if any) to the SC for endorsement by the end of December 2018.

¹ The SC endorsed the process for the grading of Standards at its 2016 March meeting.
Task No. 6 - Standards Efficiency Review

- The SC will support the evaluation of NERC Reliability Standards to identify potential efficiencies through retirement or modification of particular requirements. This project seeks to identify potential candidate requirements that are not necessary to maintain an adequate level of reliability and could reduce regulatory obligation.
Reliability Issues Steering Committee Report

Action
Information

Summary
The Reliability Issues Steering Committee (RISC) met via conference call on March 16, 2018, and April 9, 2018, to continue discussing the resilience framework presented at the February MRC meeting. The RISC discussed the comments submitted by the RTO/ISOs to FERC, as well as input received from the NERC standing committees on the mapping of current ERO Enterprise activities to the four constructs of the framework and any additional activities the committees believe NERC should take to further support resilience. Mr. Peter Brandien, RISC chair, is providing an update on the current status of the resilience framework and next steps at the May 9, 2018, MRC meeting.

The next Reliability Leadership Summit will be held in March 2019 in Washington, DC (exact date to be determined).

Mr. Brandien will provide an update on the committee’s activities.
Compliance and Certification Committee (CCC) Report

Action

Information

Highlights

The CCC conducted its first quarter meeting on March 21, 2018 at the NERC offices in Atlanta, GA.

During the meeting, the CCC voted to endorse for NERC Board approval a new CCC Chair and Vice Chair for a 2 –year term beginning July 1, 2018.

Additionally, the CCC and/or its subcommittees completed the following key activities associated with its 2018 work plan:

- Approved EnergySec as a Pre-Qualified Organization that can submit Compliance Implementation Guidance for ERO endorsement. Gathered input on the Resiliency Framework presented to the Members Representative Committee by the Reliability Issue Steering Committee (RISC) during the February 2018 meeting. On March 28, 2018, the CCC provided feedback to the RISC on the framework for future consideration.
- Gathered and provided feedback to NERC for enhancements to the existing Post-Audit Feedback Survey.
- Conducted a CCC Alignment Working Group (AWG) meeting, where the AWG reviewed ongoing activities, provided input into the consistency tool, and reviewed existing issues within the tool.
- Identified CCC member volunteers to support NERC and complete work plan tasks associated with industry outreach around internal controls, including support for the 2018 NERC Standards and Compliance Workshop.
- Reviewed CCC survey questions for the 2018 ERO Enterprise Survey.
- Reviewed existing criteria contained within CCCPP-010, which is used by NERC to annually evaluate the effectiveness of Regional Entity Compliance Monitoring and Enforcement Program. Ongoing activities between NERC and the CCC will continue to identify enhancements to the criteria.
- Continues working with the ERO to determine if modifications to the Compliance Registry to address the specific language the NERC Rules of Procedure Appendix 5A.D.1, related to requests for sub-set list of applicable Reliability Standards (which may specify the Requirements/sub-Requirements).
The North American Transmission Forum (NATF) mission is to promote excellence in the reliable and resilient operation of the electric transmission system, with the vision of continuous improvement. To augment our strategic goals, the NATF has five 2018 operational/technical focus areas as follows:

1. Resiliency/security (tangible actions to mitigate, respond to, and recover from severe events)
2. Human performance / skilled workforce (reduced error frequency/consequences)
3. Equipment performance and asset management
4. Operating experience exchange (cause analyses, corrective actions, and lessons learned)
5. Continuous performance improvement, mechanisms, processes, training

1. Resiliency/Security

Resiliency Summits
The NATF and EPRI conduct joint resiliency summits (roughly twice per year). The October 2017 summit focused on member sharing regarding tangible actions taken to harden systems. The May 2018 summit will focus on recovery and restoration, including supplemental operating strategies.

Supplemental Operating Strategies
The NATF established a project team to specifically evaluate how to operate the grid “manually” in the face of a significant event impacting energy management systems (EMS) and/or supervisory control and data acquisition (SCADA) systems. This project defined a rank-ordered set of functional capabilities that would have to be emulated and associated actions to do so. This project is moving on to consider impacts on physical assets. Additionally, the team is assessing the optimal industry posture needed to respond to DOE Orders issued in the face of a grid security emergency.

Supply Chain Cyber Controls
NERC’s BOT asked the NATF and North American Generator Forum (NAGF) to “develop white papers to address best and leading practices in supply chain management, including procurement, specifications, vendor requirements and existing equipment management, that are shared across the membership of each Forum, and to the extent permissible under any applicable confidentiality requirements, distribute such white papers to industry.”

The NATF has issued documents related to CIP-005 and CIP-010 to support the NERC request and to serve as guidance for NATF members and the industry (a status update for those is available in the attached external newsletter).
The NATF is also composing a supply chain risk management framework for more efficient implementation of CIP-013 compliance by industry and its vendors. The NATF is collaborating with the ISO/RTO Council, NAGF, NRECA, and EEI with a goal of producing value-added, industry-supported supply chain risk management guidance.

One aspect of this business-based approach, as used successfully in other industries where cyber security risk must be managed, utilizes common cyber security controls:

- Specify supply chain cyber security requirements for vendors supplying relevant products and services to the industry;
- Request vendors to certify they are compliant with those requirements;
- Specify third-party audits to confirm vendor status.

Open versions of those documents are targeted for completion by the August 2018 NERC BOT meeting.

2. Human Performance / Skilled Workforce

In March 2018, the NATF and NERC completed our second joint human performance workshop. This joint offering is seen as way to leverage complementary strengths—NERC’s deep expertise on the science behind human performance and the NATF’s focus on practical field application of error reduction and consequence-mitigation techniques. In addition, the NATF is continuing work to identify ideal training curricula for all reliability-relevant positions.

3. Equipment Performance and Asset Management

The NATF has systematically worked with members to reduce the number of “unknown” causes for transmission outages, and NATF metrics are used to highlight areas of lagging performance that need added focus through one of our practices working groups (e.g., lines or substations). In addition, the NATF continues close collaboration with EPRI to understand equipment failure outliers and affect improvements.

4. Operating Experience Exchange

A key focus for the NATF is the timely sharing of detailed information among our members. A primary tool for that sharing is our operating experience program. Over that last several years, the NATF has steadily increased the number of operating experience reports (OERs) generated as well as the fraction of the members providing reports. In concert, the scope and depth of the reports has steadily improved. Recently, the NATF Board of Directors approved sharing a subset of these reports publicly as a benefit to the industry. These “Open Distribution” OERs are posted on our public website.

5. Continuous Performance Improvement

The NATF has several mechanisms to support continuous performance improvement, most notably our Peer Review Program. Two years ago, the NATF added a reduced-scope peer review option for smaller members to achieve a comparable performance benefit. This has increased the pool of NATF members engaged in the Peer Review Program. More recently, the NATF has created a range of self-assessment tools for member use during
the interceding period between reviews. In addition, the NATF has augmented our risk/control practices area and added other elements to place further focus on members’ capabilities to “find and fix” their own issues.
Redacted Operating Experience Reports

The NATF works with its members to identify and communicate timely and actionable operating experience and other reliability information regarding risks, vulnerabilities, events, adverse trends, lessons learned, and superior practices. NATF “operating experience” can be either positive or negative and span any transmission (reliability, resiliency, or safety) learning opportunity worth sharing or for potential trending—regardless of actual impact or cause. One of the key benefits for sharing operating experience information is the opportunity for members to learn without experiencing those lessons first-hand.

As an added value for NATF members and benefit to the industry, the NATF has begun to develop redacted operating experience reports, which are posted on the NATF public site at: http://www.natf.net/documents.

Members and other utilities may use the redacted reports internally and share with their contractors to help improve safety, reliability, and resiliency.

NERC Compliance Implementation Guidance Submittals and Endorsement

On a case-basis, the NATF develops practice or guidance documents related to topics that are associated with NERC Reliability Standards. Below is an update of documents submitted to NERC for consideration as compliance “Implementation Guidance.”

NERC recently posted three NATF documents as “ERO Enterprise-endorsed Implementation Guidance” on its Compliance Guidance website:

- “CIP-014-2 R5_Developing_and_Implementing_Physical_Security_Plans_(NATF)”
  - On NATF site as “NATF Practices Document for CIP-014-2 R5”
- “CIP-010-3 R1.6 Software Integrity and Authenticity”
  - On NATF site as “NATF Guidance for CIP-010-3 Software Integrity”
- “CIP-014-2 R4 Evaluating Potential Physical Security Attack”
  - On NATF site as “NATF Practices Document for CIP-014-2 R4”

As noted, the documents are also posted on our public site.

Cybersecurity Supply Chain Risk Management

A cross-functional NATF project team is working to develop a supply chain risk management framework and practices and guidance for cyber security supply chain risk management and the associated Reliability Standards (CIP-013, CIP-005, CIP-010).

As noted above, NERC accepted one of our CIP-010 documents as “ERO Enterprise-endorsed Implementation Guidance.” The NATF also submitted two other documents (that address supply chain standards...
requirements in CIP-010-2 and CIP-005-6) for consideration as Implementation Guidance that NERC chose not to endorse. The NATF drafting teams and staff are reviewing next steps.

Regarding CIP-013, the NATF supply chain group drafted a white paper describing practices for establishing and implementing a supply chain cyber security risk management plan. The draft is being reviewed by NATF members and by leadership, staff, and designated representatives of select industry organizations/groups with whom the NATF team has been collaborating and coordinating (ISO/RTO Council, NRECA/APPA, EEI, NAGF, NERC CIPC). After review, the NATF plans to develop a version of the white paper for industry use and submit an associated document to NERC for consideration as Implementation Guidance as an approach to comply with CIP-013.

Protection System Misoperations Report

The NATF Protection System Misoperations Analysis Initiative began in 2015. As part of this initiative, the NATF requests Misoperation data from member companies, calculates metrics, and provides an analysis of Misoperation causes. The goals are to support peer-to-peer benchmarking, recommend System Protection Practices Group activities to address significant causes of misoperations, provide information members can use to reduce misoperations, and position NATF as a source of information and insight on protection system performance.

Annual Report

Each year, the Misoperations Analysis Working Group prepares a Protection System Misoperation Analysis Initiative Annual Report to analyze misoperation categories and causes.

Metrics

The NATF calculates three metrics:

- **Dependability**: Measures the ability of the protection to meet expected clearing times
- **Security**: Measures the ability of the protection to trip only the faulted element
- **Correct Operations**: A combination of dependability and security

A small number of misoperations are failures to trip or slow trips, which are reflected in the dependability metric. The majority of misoperations are unnecessary trips, which drives the security metric lower. The separate metrics provided by the NATF initiative help us understand the nature of misoperations and, in some cases, see how different protection system design philosophies affect the balance between dependability and security.

It is important to calculate separate dependability and security metrics. A focus on improving security without monitoring how those improvements affect dependability could allow negative impacts on dependability to go undetected.
Analysis and Recommendations
The most recent annual report provided 31 recommendations to members, the Misoperation Analysis Working Group, and the System Protection Practice Group, ranging from benchmarking approaches to misoperations reporting and cause analysis.

External Coordination
The NATF interfaces with industry partners and regulatory agencies in a variety of ways, including joint workshops and webinars. Recent and upcoming activities include:

- Inverter-Based Resource Webinar Series
- Joint NERC/NATF Human Performance Conference and Workshops (March 27-29)
- NERC-NATF-EPRI 2018 Power System Modeling Conference (June 20-21)

***

For more information about the NATF, please visit www.natf.net.
North American Generator Forum

TO: NERC Board of Trustees
James B. Robb, President and CEO

FROM: Allen D. Schriver
Chief Operating Officer, North American Generator Forum (NAGF)

DATE: April 25, 2018

SUBJECT: NAGF 2018 Spring Report

The NAGF Supply Chain White Paper Development team is finalizing a pre-screen process for BES cyber systems/assets and vendor supply chain analysis framework as part of an overall Cyber Security Supply Chain Risk Management Plan for generator BES cyber systems/assets. The pre-screen process result will determine if a vendor supply chain analysis is required. The outcome of the vendor supply chain analysis will determine possible cyber security controls for remaining stages of the BES cyber system lifecycle. The goal is to complete the white paper by the end of May 2018.

The NAGF has been collaborating with the NATF, ISO/RTO Council, APPA, EEI, and others regarding the development of Supply Chain Cyber Security Risk Management Guidance.

After discussions with staff from FERC and NERC, the NAGF and ESIG, the Energy Systems Integration Group (formerly UVIG) in collaboration with NERC have begun planning a Frequency Response and Battery Storage Applications Workshop which is planned for Tuesday July 17th and Wednesday July 18th at the NERC Atlanta Office. The workshop will include NERC, FERC, ISO/RTO’s, NAGF, ESIG, OEM’s and will discuss the Lawrence Berkley National Laboratory Primary Frequency Response Study, impacts to the system and opportunities and impacts for non-synchronous generation. The Workshop will also discuss the system attributes that can be provided with battery storage and the opportunities for combining battery storage with wind and/or solar.