Call to Order and NERC Antitrust Compliance Guidelines

Introductions and Chair’s Remarks

Consent Agenda - Approve

1. Minutes*
   a. June 12, 2018 Meeting
   b. May 10, 2018 Meeting

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

Regular Agenda

3. Remarks and Reports
   a. Remarks by Dave Erickson, CEO, AESO
   b. Remarks by Catherine Jereza, Deputy Assistant Secretary, DOE
   c. Remarks by Murray Doehler, Past Chair, CAMPUT and Incoming CAMPUT Representative to NERC, David Morton
   d. Remarks by Sergio Marchi, President and CEO, CEA
   e. President’s Report

4. Report on Board of Trustees and Canadian Regulators Meeting – Information

5. Report on Board of Trustees August 14, 2018 Closed Session – Information
6. Board Committee Reports
   a. Corporate Governance and Human Resources
      i. Trustee Compensation – Approve
   b. Compliance
   c. Finance and Audit
      i. Second Quarter Unaudited Financial Statements – Accept
      ii. NERC and Regional Entity Proposed 2019 Business Plans and Budgets and Associated Assessments – Approve
   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. Supply Chain Activities – Update
   b. Standards Efficiency Review – Update
   c. BAL-002-3 – Disturbance Control Standard – Adopt
   d. CIP-012-1 – Cyber Security – Communications between Control Centers – Adopt
   e. VAR-001-5 Voltage and Reactive Control – Adopt

8. Other Matters and Reports
   a. Reliability Coordinator Function in the Western Interconnection* – Update
   b. NERC Rules of Procedure Section 1208 Registration Transfer Request of Wisconsin Public Service Corporation and Upper Michigan Energy Resources* – Approve
   c. Revisions to Appendix 4E of the NERC Rules of Procedure* – Approve
   d. Section 1600 Geomagnetic Disturbance Data Request * – Approve
   e. Proposed Amendments to the Western Electricity Coordinating Council Bylaws* – Approve
   f. FERC Technical Conference Report – Information

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
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 restrains 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”) on June 12, 2018, at 10:00 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
Robert G. Clarke
Frederick W. Gorbet
David Goulding
George S. Hawkins
Robin E. Manning
Jan Schori

Board Members Absent
Janice B. Case
Kenneth W. DeFontes, Jr., Vice Chair
Suzanne Keenan
Jim Robb, President and Chief Executive Officer

NERC Staff
Charles Berardesco, Senior Vice President, General Counsel, and Corporate Secretary
Tina Buzzard, Associate Director
Scott Jones, Senior Vice President, Chief Financial and Administrative Officer, and Corporate Treasurer
Mark G. Lauby, Senior Vice President and Chief Reliability Officer
Sonia Mendonça, Vice President, Deputy General Counsel, and Director of Enforcement
James Merlo, Vice President and Director of Reliability Risk Management
John Moura, Director of Reliability Assessment and System Analysis
Janet Sena, Senior Vice President and Director of Policy and External Affairs
David Till, Senior Manager of Performance Analysis

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 Mr. Berardesco.
Chair's Remarks
Mr. Thilly noted that the purpose of the meeting was to accept the 2018 State of Reliability Report, and that the Board had the opportunity to review a draft of the Report and to submit comments in advance. He commended NERC staff for all of the work on this important Report, and noted the high level of stakeholder involvement through the standing committees.

2018 State of Reliability Report
Mr. Merlo presented the Report, noting the focus on adequate level of reliability metrics, and that the data reflects the performance of the grid in 2017. He noted the history and evolution of the Report over the years. Mr. Merlo acknowledged that the Operating Committee and Planning Committee endorsed the Report, after review by the committees and their subcommittees. He stated the Report will be published near the end of June 2018.

Mr. Merlo welcomed Mr. Till to provide an overview of questions raised by Trustees in advance, and corresponding modifications made to the Report to reflect Trustee comments. Mr. Till referred to the presentation of findings from the May meeting of the Member Representatives Committee, and expressed appreciation to the Board for its comments. He noted the Board requested a modification to the structure of the Report, and to have all recommendations assigned to a specific entity for accountability purposes. He noted that the Report will implement these requests, and that upcoming reports will seek to consolidate recommendations into a single place.

The Board engaged in general discussion of the Report, including planned improvements in the tracking of recommendations, opportunities for collaborations with outside entities, and the use of analytical tools. Upon motion duly made and seconded, the Board accepted the 2018 State of Reliability Report, endorsed its recommendations, and approved its publication.

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

Submitted by,

Charles A. Berardesco
Corporate Secretary
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 Arlington, Virginia on May 10, 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
Janice B. Case
Robert G. Clarke
Frederick W. Gorbet
David Goulding
George S. Hawkins
Suzanne Keenan
Robin E. Manning
Jim Robb, President and Chief Executive Officer
Jan Schori

**NERC Staff**
Charles Berardesco, Senior Vice President, General Counsel, and Corporate Secretary
Tina Buzzard, Associate Director
Shamai Elstein, Senior Counsel
Howard Gugel, Senior Director of Standards
Stan Hoptroff, Vice President, Chief Technology Officer, and Director of Information Technology
Scott Jones, Senior 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, Deputy General Counsel, 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 Mr. Berardesco.

Welcoming Remarks
Mr. Thilly welcomed all of the attendees, including Tom Farrell of Dominion Energy, Inc. (“Dominion”), Commissioner Richard Glick of the Federal Energy Regulatory Commission (“FERC”), Bruce Walker of the Department of Energy (“DOE”), David Ortiz of FERC, and Murray Doehler of Canada’s Energy and Utility Regulators (“CAMPUT”). He welcomed Mr. Robb to his first meeting as President and CEO of NERC, and noted that the full Board was involved in the search for a CEO and unanimously supported him. Mr. Thilly stated that Mr. Robb has excellent experience for the position, including working within all three interconnections, serving as CEO of the Western Electricity Coordinating Council (“WECC”), and working at McKinsey & Company.

Mr. Thilly expressed appreciation to the industry, Regional Entities (“REs”), FERC, NERC management, and Mr. Berardesco for the seamless transition in NERC leadership. He also thanked everyone involved in the dissolution of Southwest Power Pool (“SPP”) Regional Entity (“RE”), and the transfer of entities from SPP RE to Midwest Reliability Organization (“MRO”) and SERC Reliability Corporation (“SERC”). Mr. Thilly noted FERC’s supportive order regarding the SPP RE dissolution.

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

Minutes
The draft minutes for the February 8, 2018 meeting were approved as presented to the Board at this meeting.

Committee Membership Appointments and Charter Revisions

Compliance and Certification Committee

RESOLVED, that the Board hereby approves the appointment of the following individuals as Chair and Vice Chair of the Compliance and Certification Committee (“CCC”), each for a term of two years beginning on July 1, 2018:

- Jennifer Flandermeyer, of Kansas City Power & Light, as CCC Chair
- Scott Tomashefsky, of Northern California Power Agency, as CCC Vice Chair

FURTHER RESOLVED, that the Board hereby approves the reappointment of the following individuals to serve as CCC representatives, each for a term of three years:

- Terry Bilke, of Midcontinent Independent System Operator, representing Midwest Reliability Organization
- Keith Comeaux, of NRG Energy, Inc., representing the Electricity Marketer sector
• Patti Metro, of National Rural Electric Cooperative Association, representing the Transmission Dependent Utility sector
• Darrel Piatt, of Federal Energy Regulatory Commission, representing the U.S. Federal sector
• Patricia Robertson, of British Columbia Hydro, representing the Federal or Provincial Utility/Federal Power Marketing Administration sector
• Scott Tomashefsky, of Northern California Power Authority, representing the U.S. State sector

FURTHER RESOLVED, that the Board hereby approves the appointment of the following individuals to serve as CCC representatives, each for a term of three years:

• Jennifer Flandermeyer, of Kansas City Power & Light, representing the Investor-Owned Utility sector
• Michelle Freeark, of Arizona Electric Power Cooperative, Inc., representing the Cooperative sector
• Leigh Mulholland, of Capital Power Corporation, representing the Canada Federal sector
• Helen Nalley, of Southern Company, representing the Merchant Electricity Generator sector
• Keith Porterfield, of Georgia System Operations Corporation, representing the Cooperative sector

Planning Committee

RESOLVED, that the Board hereby approves the appointment of Todd Snitchler, of American Petroleum Institute, representing the Large End-Use Electricity Customer sector, to the Planning Committee ("PC") for a term ending on December 31, 2019.

FURTHER RESOLVED, that the Board hereby approves the amended PC charter, substantially in the form presented to the Board at this meeting, to replace the PC charter approved by the Board on August 11, 2016.

Critical Infrastructure Protection Committee

RESOLVED, that the Board hereby approves the appointment of the following individuals to the Critical Infrastructure Protection Committee, each to serve for an unexpired term:

• Charles Abell of Ameren, to replace Lisa Carrington as Reliability Issues Steering Committee representative
• Suzanne Black of ISO New England, Inc., to replace John Galloway as NPCC representative
Andrea Koch to replace Melanie Seader as Edison Electric Institute representative
James McNierney of New York ISO, to replace Greg Goodrich as NPCC representative
Tom O’Neill of Hydro Quebec TransEnergie to replace Yan Hugues Boily as NPCC representative
Dawn Thomas of NextEra to replace Patricia Boody as FRCC representative

**Regular Agenda**

**Remarks by Tom Farrell, President and CEO, Dominion Energy, Inc.**
Mr. Thilly introduced Mr. Farrell, who welcomed the Board to Virginia and discussed the state’s history. He noted Dominion is one of the largest utilities in North America, headquartered in Richmond, Virginia, and has the nation’s second-largest natural gas storage project. Mr. Farrell congratulated Mr. Robb, and congratulated NERC for 50 years of service and excellence. He emphasized that both NERC and Dominion are committed to maintaining reliable and secure electricity on a rapidly changing grid, stating that energy is not a luxury but a necessity. Mr. Farrell noted that Dominion serves energy for several federal security agencies, and summarized some of Dominion’s actions to support national security including: testing components within Dominion’s laboratories; developing mobile equipment and substations; and shielding equipment from geomagnetic disturbances. He explained that Dominion has a history of being innovative, noting Dominion pioneered combined cycle power plants.

**Remarks by Richard Glick, Commissioner, FERC**
Mr. Thilly introduced Commissioner Glick of FERC. Mr. Glick congratulated Mr. Robb, and expressed appreciation to Mr. Berardesco for his leadership. He discussed FERC’s Notice of Proposed Rulemaking regarding resilience, noting the need to have more information on the issue before making a decision. Mr. Glick noted that NERC has been focused on resilience for a long time through reliability efforts. He discussed the need to focus on resiliency, citing extreme weather events and natural disasters as examples. Mr. Glick noted the change in the industry’s fuel mix, stating that coal is no longer financially competitive given the lower price of natural gas and renewable energies. He also stated FERC is focused on fuel security.

Mr. Glick emphasized the importance of focusing on cyber security, particularly cyber-attacks from foreign nations on natural gas pipelines. He stated that the Transportation Security Administration (“TSA”) has authority for security of natural gas and oil pipelines, but expressed concern whether the TSA has sufficient resources to deal with these issues. Mr. Glick stated that, while it is not an issue for FERC to decide, it is worthwhile for Congress and others to consider. He noted that he was not suggesting FERC should have this authority, recognizing that the DOE or NERC may be more appropriate, but that it is a vitally important issue that needs to be addressed.

**Remarks by Bruce Walker, Assistant Secretary, DOE**
Mr. Walker expressed appreciation for the conversations regarding resiliency, among other topics. He discussed the importance of the partnership among the DOE, FERC, and NERC. Resilience is important to all three entities, but each takes a different approach: FERC is focused on markets, NERC is focused on Reliability Standards, and the DOE is focused on national security. Mr. Walker noted that the FAST ACT of
2015 highlighted cyber security issues and identified threats to the nation’s electrical infrastructure. Since the Act, the DOE has defined critical assets required for security. He stated that the nation’s natural gas and oil pipelines, and electric transmission, were not built for cyber security, nor were they built when physical security concerns existed. Therefore, the DOE is focused on developing controls for these systems to guard cyber security. Mr. Walker summarized the DOE’s issuance of funding opportunities for redesigning the systems.

Mr. Walker discussed cooperation between the DOE and the TSA to address cyber security, as well as supply chain issues. He noted the DOE is in discussion with the E-ISAC regarding expanding CRISP to better understand the industry.

Remarks by Murray Doehler, CAMPUT
Mr. Doehler discussed the importance of a strong relationship between NERC and Canada. He noted that Canada does not have an equivalent to FERC; instead, the provincial governments each have respective authority within their jurisdiction. Mr. Doehler noted that CAMPUT formed a NERC interest group that meets quarterly, and is focused on reliability issues. While CAMPUT is primarily an educational organization, it recognizes the need to be more active in the monitoring and enforcement areas. He noted CAMPUT is supportive of the Standards Efficiency Review efforts. Mr. Doehler expressed appreciation to Mike Walker of NERC regarding the ongoing effectiveness and efficiency efforts, noting that it is a significant undertaking and worthwhile to pursue. He also stated that resilience is not as significant of a conversation topic for Canada as it is in the U.S. Mr. Doehler closed his comments noting his last meeting as the CAMPUT representative would be in August, and his replacement would soon be named.

President’s Report
Mr. Robb introduced himself, and explained that his professional values were formed at McKinsey & Company, including taking satisfaction in the success of others. He discussed his experience in each of the major power markets across the U.S. during pivotal moments of change, such as the restructure of California ISO (“CAISO”), formation of Electric Reliability Council of Texas’s nodal market, and development of the Regional Greenhouse Gas Initiative in New England. Mr. Robb expressed appreciation to Mr. Berardesco for his leadership and for keeping NERC focused on the future. He noted that he does not envision major changes in NERC or its operations in the near-term, and affirmed his strong support the risk-based philosophy.

Mr. Robb summarized three main priorities: (1) complete the Standards Efficiency Review; (2) consistently implement risk-based programs at the Regions; and (3) maintain vigor as the ERO Enterprise continues to enhance the risk-based model. He also summarized four major challenges: (1) determining the correct balance of partnership with industry and independence; (2) enhancing technical competence and political independence; (3) maintaining influence and credibility with industry, as well as improving communication; and (4) improving alignment and effectiveness of the delegation model with the REs, particularly in the Compliance Monitoring and Enforcement Program (“CMEP”) area. Mr. Robb highlighted four topical areas of focus: (1) security, including the E-ISAC and outbound communication capabilities; (2) Reliability Coordinator (“RC”) issues in the West; (3) integration of inverter-based technology; and (4) the pace of change in the industry.
Mr. Robb noted that NERC will celebrate its 50th anniversary on June 1, 2018. He acknowledged Tim Gallagher as the new leader of the ERO EMG. Mr. Gallagher welcomed Mr. Robb, and expressed his appreciation to Mr. Berardesco. He offered his full support in assisting with the SPP RE transition, and thanked the affected registered entities. Mr. Gallagher highlighted changes in the leadership of the ERO Enterprise and at FERC. He also noted the retirement of Ron Ciesiel.

**Report on Board of Trustees and Regional Board Officers Joint Meeting**

Mr. Thilly reported on the semiannual meeting with ERO Enterprise board leadership, noting the ERO Enterprise model is based heavily on industry participation. He thanked the MRC members and trade associations for policy input. Mr. Thilly stated the ERO Enterprise’s role in CIP security extends beyond the Reliability Standards, and it is important to make sure the ERO Enterprise has adequate resources to handle responsibilities.

**Report on Board of Trustees April 17 and May 8, 2018 Closed Session**

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. In these sessions, the Board discussed personnel and the budget, productivity, excellence in performance, and employee retention. The Board also discussed metrics and legal issues.

**Board Committee Reports**

**Corporate Governance and Human Resources Committee**

Mr. Clarke, Committee Chair, summarized the April 17 and May 4, 2018 meetings. He reported that during the closed meeting, the Committee approved the 2018 Work Plan, and reviewed employee benefit plans, the Form 990, and the 2019 budget. Mr. Clarke reported that during the open meeting the Committee reviewed the 2017 committee assessments, which had a 100 percent completion rate, 2018 corporate metric updates, and Board compensation. He noted the Committee hired a third party to do a study regarding Board compensation, and that the study will be reviewed during the Committee’s June meeting.

**Compliance Committee**

Ms. Case, Committee Chair, reported the Committee met in executive sessions, and approved four Notices of Penalty to be filed with FERC, three of which involved vegetation management violations. She stated the Committee received updates on CMEP activities with federal entities, and on the SPP RE transition. Ms. Case reported that the Committee met in open session and held a panel with ReliabilityFirst, SERC, and WECC on CIP violation themes.

**Finance and Audit Committee**

Ms. Schori, Committee Chair, reported on the recent closed session of the Committee including developing the 2019 budget, and receiving a clean audit for the 2017 financials. Upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board, upon recommendation of the Finance and Audit Committee, hereby accepts the 2017 Audited Financial Statements, as presented to the Board at this meeting.
**Enterprise-wide Risk Committee**
Mr. Goulding, Committee Chair, reported the Committee met in closed session, and noted the Committee’s goal is not to focus on risks to the Bulk Electric System but instead focus on risks to NERC and the ERO Enterprise, although some risks may affect both. He noted the Committee reviewed results of the 2017 audits and updates on the 2018 audit plan, and deferred review of the risk register and heat map to August. Mr. Goulding expressed appreciation to Patti Metro for her leadership and welcomed Jennifer Flandermeyer as the new committee member and CCC chair.

**Technology and Security Committee**
Mr. Hawkins, Committee Chair, reported on the Committee’s meeting the prior day, including the search for a CSO, IT updates and budget, E-ISAC report, and the Misoperations Information Data Analysis System demonstration.

**Nominating Committee**
Mr. Gorbet, Committee Chair, summarized the March 21 and May 8, 2018 meetings, and noted that Messrs. Clarke, DeFontes, and Goulding are eligible for reelection in 2019. He reported that the Committee agreed to renominate the eligible trustees, and engaged a search firm for a Canadian trustee. Mr. Gorbet stated the Committee will meet again on May 22, 2018, to consider the description of the position for a Canadian trustee for distribution to stakeholders.

**Report by Vice Chair on Standards Quarterly Activities**
Mr. DeFontes reported on the recent Standards Committee conference calls and meetings. He thanked the Committee’s leadership, and highlighted progress on the Standards Efficiency Review with a potential for retirement of approximately 20 percent of Requirements.

**Other Matters and Reports**

**Amendments to the Bylaws of the Midwest Reliability Organization**
Mr. Berardesco presented the proposed amendments to the Bylaws of MRO, noting the revisions are intended to reflect SPP RE’s dissolution. Upon motion duly made and seconded, the following resolutions were approved:

**RESOLVED**, that the Board hereby approves the amendments to the Bylaws of the Midwest Reliability Organization, substantially 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.
Plan for Addressing Reliability Standard and Guideline Recommendations from Recent Reliability Assessments
Brian Evans-Mongeon provided an update on addressing Reliability Standard and guideline recommendations from recent reliability assessments. He noted that there will be a workshop on July 10, 2018, which will include four panels to discuss issues related to these activities.

Reliability Coordinator Footprints in the Western Interconnection
Melanie Frye and Mr. McIntyre provided an update on RC issues in the Western Interconnection. They noted that CAISO has announced plans to function as RC in its own footprint, and noted other potential RCs. Ms. Frye and Mr. McIntyre stated that WECC will lead certification teams for all RCs, starting with CAISO, and that WECC established a RC forum to allow stakeholders to engage in discussion.

E-ISAC Code of Conduct
Mr. Elstein provided an update on the E-ISAC code of conduct, noting that there have been no violations of the code of conduct since adoption.

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

PER-003-2 – Operating Personnel Credentials

**RESOLVED,** that the Board hereby adopts the proposed Reliability Standard PER-003-2, 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 PER-003-1, 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.

PER-004-2 – Reliability Coordination-Staffing

**RESOLVED,** that the Board hereby approves the proposed retirement of Reliability Standard PER-004-2, 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.

Supply Chain Activities
Mr. Gugel provided an update on activities related to supply chain management. He expressed appreciation to the Standards Committee for their work, and to the Electric Power Research Institute for conducting a study. Mr. Gugel stated he will bring a report to the August meeting. He also expressed appreciation to National Rural Electric Cooperative Association and American Public Power Association for policy input through a joint paper.

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.

Operating Committee
Lloyd Linke, Committee Chair, referenced the written report and highlighted recent election results. He noted the Committee is updating three reliability guidelines, and creating a new reliability guideline regarding System Operating Limits.

Planning Committee
Brian Evans-Mongeon, Committee Chair, expressed appreciation to the Board for approval of the Committee’s charter. He reported on recent developments by the Committee, and noted that both the State of Reliability Report and Summer Reliability Assessment were available for comment. Mr. Evans-Mongeon reported that the Distributed Energy Resources (“DER”) Task Force identified 41 discussion items regarding DER, and the Committee will respond to the DER Task Force’s recommendations.

Critical Infrastructure Protection Committee
Marc Child, Committee Chair, referenced the written report, and expressed appreciation for the volunteers to the advisory taskforce.

Member Representatives Committee
Jason Marshall, MRC Chair, summarized issues that had been discussed at the MRC meeting. He highlighted the Committee’s discussion on the resilience framework, and certification of vendors in connection with supply chain management efforts.

Personnel Certification Governance Committee
Michael Anderson, Committee Chair, noted preliminary survey results regarding the System Operator Certification program and potential changes. He reported that the Committee is seeking further stakeholder input for candidates to the Committee.

Standards Committee
Andrew Gallo, Committee Chair, referenced the written report and presented the Committee’s 2018-2020 Strategic Work Plan. He noted that the Committee is forming transition teams to create technical
rationale guidelines, and that an enhanced Period Review is underway. Upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board, hereby approves the 2018-2020 Standards Committee Strategic Work Plan, as presented to the Board at this meeting.

Reliability Issues Steering Committee
Peter Brandien, Committee Chair, discussed the resilience framework, and work with the standing committees.

Compliance and Certification Committee
Patti Metro, Committee Chair, referenced the written report and noted that it was her last meeting as Committee Chair. Mr. Gorbet thanked Ms. Metro for her work on the Committee, and her collaboration with the Board and stakeholders.

Electricity Subsector Coordinating Council
Mr. Robb discussed the recent meeting of the Council.

Forum and Group Reports

North American Energy Standards Board (NAESB)
Michael Desselle, NAESB Chair, referenced the written report, and noted that NAESB is working on reliability efficiency reviews.

North American Transmission Forum
Tom Galloway, Forum CEO, referenced the written report and noted a priority of the Forum is resiliency, including security issues. He noted the Forum’s next summit will be on May 22, 2018.

North American Generator Forum
Allen Shriver, Forum COO, noted that the Forum will assist NERC and FERC on a Frequency Responses and Battery Storage Applications Workshop, and thanked Mr. Merlo and his staff for their work.

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

Submitted by,

Charles A. Berardesco
Corporate Secretary
**Critical Infrastructure Protection Committee Membership**

**Action**
Approve

**Summary**
The Critical Infrastructure Protection Committee is requesting approval of the following membership changes for the SERC Region:

- Brian Harrell (Duke Energy) to replace Bruce Martin (Duke Energy) for a term of two years.
- Tony Hall (LGE-KU) to replace Cynthia Hill-Watson (TVA) for a term of two years.
Agenda Item 2b
Board of Trustees Meeting
August 16, 2018

Planning Committee Membership

Action
Approve the following Planning Committee membership appointments and changes for a term of two years.

Planning Committee Annual Election Results: 2018–2020 Term

<table>
<thead>
<tr>
<th>Sector</th>
<th>Elected Members</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Investor-Owned Utility</td>
<td>Jason Spitzkoff</td>
<td>Arizona Public Service Company</td>
</tr>
<tr>
<td>3. Cooperative Utility</td>
<td>Joseph Sowell</td>
<td>Georgia Transmission Corporation</td>
</tr>
<tr>
<td>4. Federal or Provincial Utility/Federal Power Marketing Administration</td>
<td>Wayne Guttormson</td>
<td>SaskPower</td>
</tr>
<tr>
<td></td>
<td>Steve Blackburn</td>
<td>Hydro-Quebec</td>
</tr>
<tr>
<td>5. Transmission Dependent Utility</td>
<td>Brian Zavesky</td>
<td>Missouri River Energy Services</td>
</tr>
<tr>
<td>6. Merchant Electricity Generator</td>
<td>Michael Goggin</td>
<td>Grid Strategies LLC</td>
</tr>
<tr>
<td>7. Electricity Marketer</td>
<td>Kyle Vander Helm</td>
<td>Tenaska</td>
</tr>
<tr>
<td>8. Large End-Use Electricity Customer</td>
<td>No nominations received</td>
<td>N/A</td>
</tr>
<tr>
<td>9. Small End-Use Electricity Customer</td>
<td>No nominations received</td>
<td>N/A</td>
</tr>
<tr>
<td>10. Independent System Operator/Regional Transmission Organization</td>
<td>Dana Walters</td>
<td>NYISO</td>
</tr>
<tr>
<td>12. State Government</td>
<td>Cezar Panait</td>
<td>Minnesota Public Utilities Commission</td>
</tr>
</tbody>
</table>
**Operating Committee Membership**

**Action**
Approve the following committee membership appointments and changes for a two-year term.

**Operating Committee Annual Election Results - 2018-2020 Term**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Elected Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Investor-owned utility</td>
<td>Doug Hils (Duke Energy)</td>
</tr>
<tr>
<td>2. State/municipal utility</td>
<td>Sidney Jackson (Rochester Public Utilities (Minnesota))</td>
</tr>
<tr>
<td>3. Cooperative utility</td>
<td>Jeff Harrison (AECI)</td>
</tr>
<tr>
<td>4. Federal or provincial utility/Federal Power Marketing Administration</td>
<td>Michelle Rheault (Manitoba Hydro)</td>
</tr>
<tr>
<td>5. Transmission dependent utility</td>
<td>Brian Robinson (Utility Services, Inc.)</td>
</tr>
<tr>
<td>7. Electricity Marketer</td>
<td>JT Thompson (NIPPC)</td>
</tr>
<tr>
<td>8. Large end-use electricity customer</td>
<td>Tom Siegrist (Stone, Mattheis, Xenopoulos and Brew, PC)</td>
</tr>
<tr>
<td>9. Small end-use electricity customer</td>
<td>No nominations received</td>
</tr>
<tr>
<td>10. Independent system operator/ regional transmission organization</td>
<td>Peter Brandien (ISO New England)</td>
</tr>
<tr>
<td>11. State Government</td>
<td>William Chambliss (Virginia State Corporation Commission)</td>
</tr>
</tbody>
</table>
Compliance and Certification Committee Membership

Action
Approve

Background
The Compliance and Certification Committee (CCC) is recommending that the Board of Trustees approve the following appointment of a new CCC representative for the State/Municipal Utility sector. The appointment is for a three-year term effective upon the date of Board approval.

- John Allen, City Utilities of Springfield, MO, State/Municipal Utility sector
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    November 2018 ....................................................................................................................................................... 1
    2019 ......................................................................................................................................................................... 1
  2018 ANSI Reaccreditation.......................................................................................................................................... 1
  Projects with Regulatory Directives ............................................................................................................................ 1
  Trend in Number of Reliability Requirements............................................................................................................. 1

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

The vision for the Electric Reliability Organization (ERO) Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the seven Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

The North American BPS is divided into seven RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Region while associated Transmission Owners/Operators participate in another.

<table>
<thead>
<tr>
<th>FRCC</th>
<th>Florida Reliability Coordinating Council</th>
</tr>
</thead>
<tbody>
<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>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

August 2018
- Project 2017-06 Modifications to BAL-002-2
- Project 2016-02: Modifications to CIP Standards (CIP-012)

November 2018
None

2019
- Project 2015-10: Single Points of Failure (TPL-001)
- Project 2015-09: Establish and Communicate System Operating Limits
- Project 2016-02: Modifications to CIP Standards (CIP-002)
- Project 2016-02: Modifications to CIP Standards (Revisions related to Transition Advisory Group Identified Issues, virtualization, and CIP Exceptional Circumstances)
- 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 July 31, 2018, there are five directives to be resolved through standards development activities.

| Project 2015-09 Establish and Communicate System Operating Limits | Regulatory Directives | Regulatory Deadline |
| Project 2015-10 Single Points of Failure | 2 | N/A |
| Project 2016-02 Modifications to CIP Standards (Revisions unrelated to Definition of “Low Impact External Routable Connectivity”) | 1 | N/A |

Trend in Number of Reliability Requirements
As NERC Reliability Standards continue to mature, NERC assesses the trend in the total number of Reliability Standard 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.\(^2\) Variances in Reliability Standards 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.

![Trend for Number of Requirements](image)

**Figure 1: Trend for Number of Requirements for Continent-wide standards**

\(^1\) 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
### Regulatory Update

**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><strong>Petition of NERC for Approval of Proposed Reliability Standard TPL-007-2</strong></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><strong>Comments of NERC in Response to Notice of Proposed Rulemaking</strong></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><strong>Petition of NERC for Approval of Revised SERC Regional Reliability Standards Development Procedure</strong></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><strong>Comments of NERC in Response to Notice of Proposed Rulemaking regarding Critical Infrastructure Protection Reliability Standards</strong></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><strong>Joint Petition of NERC and WECC for Approval of Retirement of Regional Reliability Standard VAR-002-WECC-2</strong></td>
<td>3/7/2018</td>
</tr>
<tr>
<td>RD18-2-000</td>
<td><strong>Joint Petition of NERC and WECC for Approval of Proposed Regional Reliability Standard BAL-004-WECC-3</strong></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><strong>Joint Petition of NERC and WECC for Approval of Retirement of Regional Reliability Standard PRC-004-WECC-2</strong>&lt;br&gt;NERC and WECC submitted a joint petition for the approval of the retirement of Regional Reliability Standard PRC-004-WECC-2.</td>
<td>3/9/2018</td>
</tr>
<tr>
<td>RD18-4-000</td>
<td><strong>Petition of NERC for Approval of Proposed Reliability Standard PRC-025-2</strong>&lt;br&gt;NERC submitted a petition for approval of proposed Reliability Standard PRC-025-2 (Generator Relay Loadability).</td>
<td>3/16/2018</td>
</tr>
<tr>
<td>RD18-5-000</td>
<td><strong>Petition of NERC and WECC for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2</strong>&lt;br&gt;NERC and WECC submitted a joint petition for approval of proposed Regional Reliability Standard FAC-501-WECC-2 (Transmission Maintenance).</td>
<td>3/16/2018</td>
</tr>
<tr>
<td>RM12-1-000</td>
<td><strong>Informational Filing of NERC Regarding Implementation of Reliability Standard TPL-001-4 Table 1, Footnote 12</strong>&lt;br&gt;NERC submitted an informational filing reporting on the use of Reliability Standard TPL-001-4 Table 1, footnote 12.</td>
<td>3/30/2018</td>
</tr>
<tr>
<td>RM13-9-000</td>
<td><strong>2018 NERC Standards Report, Status and Timetable for Addressing Regulatory Directives</strong>&lt;br&gt;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>3/30/2018</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></td>
<td>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.</td>
<td></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></td>
<td>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.</td>
<td></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>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>
Standards Committee Report

At its April 18 meeting, the SC authorized initial posting by the CIP drafting team of the proposed revised definition of Control Center for the NERC Glossary and associated Implementation Plan. They also approved a drafting team nominee selection criteria and requested NERC staff to update the Standards Development Process – Participant Conduct Policy. Additionally, they authorized posting a Standard Authorization Request (SAR) developing a Canadian variance to TPL-007-2 – Transmission System Planned Performance for Geomagnetic Disturbance Events for a 30-day formal comment period and approved soliciting members for a SAR drafting team. Finally, they discussed input on the Resilience Framework requested by the Reliability Issues Steering Committee (RISC) and approved an approach to respond to the RISC’s request.

The SC did not have a May 16 meeting but took an Action Without a Meeting to appoint members, chair and vice chair to the SAR drafting team for Project 2018-01 (Canadian-specific Revisions to TPL-007-2 SAR) as recommended by NERC staff.

At the June 13 meeting, the SC accepted the Project 2018-01 (Canadian-specific Revisions to TPL-007-2) SAR for final posting and appointed the SAR Drafting Team as the standard drafting team (SDT). They also appointed additional SDT members and a new co-chair for Project 2016-02 (Modifications to CIP Standards). They also accepted a SAR to address the directive from FERC Order No. 843 regarding third-party transient electronic devices and authorized posting the SAR for a 30-day informal comment period. They assigned this SAR to the Project 2016-02 (Modifications to CIP Standards) SDT. They appointed the Project 2017-07 (Standards Alignment with Registration) SDT. They also authorized posting a third draft of proposed revisions to the NERC Standard Processes Manual for a 45-day formal comment period with additional ballot during the last 10 days of the comment period.
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 address supply chain risk management in the Critical Infrastructure Protection (CIP) standards. The project resulted in the development of new standard CIP-013-1, and modifications in CIP-005-6 and CIP-010-3 (collectively, the Supply Chain Standards). The Supply Chain Standards support reliability by requiring entities to implement plans and processes to mitigate supply chain cyber security risks to high and medium impact assets. 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, to which NERC submitted comments 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 are designed to establish a common understanding of the supply chain risk to the BES 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 Version 5 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.

To facilitate the Cyber Security Supply Chain Risk Study, NERC engaged the Electric Power Research Institute (EPRI) to provide an independent assessment of the supply chain risk. EPRI began by performing an assessment of product/manufacturer types used on the BES for system control and data acquisition (SCADA), network and telecommunications, and commercial off the shelf operating systems. This analysis revealed good insight into the vendors NERC must engage in the advisory group. They then provided an analysis of emerging best practices and standards used in other industries to mitigate supply chain risks, concentrating on practices currently not considered in the scope of the existing CIP Standards. Several noteworthy approaches were identified. EPRI then provided a study of the applicability of the CIP standards to supply chain risks. Finally, a list of recommendations was provided to reduce residual supply chain risks and facilitate the collection of additional information for future evaluation, so that prior to any changes in policy, data can be obtained, assessed and discussed in a transparent manner.
The following actions have occurred in support of the Supply Chain Standard:

2017 Q3

- E-ISAC issued a Level 2 Alert in September 2017, pursuant to Section 810 of the NERC Rules of Procedure, regarding supply chain risks identified in Department of Homeland Security’s (DHS's) Binding Operational Directive (“BOD”) 17-01 regarding the use of a vendor’s products.
- Technical committees were informed in September 2017 of the need to develop Implementation Guidance assistance.
- NERC and Institute of Electrical and Electronics Engineers (IEEE) have a formal coordination group that has discussed the topic of supply chain risk management.
- NERC engaged the “Associations” 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 the Department of Energy (DOE) and DHS.
- NERC engaged the “Forums” 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.

2018 Q2

- 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.
- Initial draft of Cyber Security Supply Chain Risk Study developed.
The “Associations” delivered a joint white paper to address best and leading practices in supply chain management, as described in the resolution.

2018 Q3
- The “Forums” delivered 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 the Board.

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

2018 Q3
- Vendor advisory group to be assembled with input from Advisory Task Force.
- 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 the Board.

Additional Information
A link to the public EPRI report is provided for reference:

EPRI Supply Chain Risk Assessment Report
Standards Efficiency Review

Action
Update

Background
As part of its continuing focus on supporting the success and evolution of NERC Reliability Standards to ensure they appropriately address risks to the bulk power system, NERC, in consultation with stakeholders, developed a process to review the existing body of Reliability Standards to determine whether any requirements have little or no reliability benefit and could be retired or modified. This effort is referred to as the Standards Efficiency Review (SER).

In Phase 1 of the SER project, teams of industry participants compiled a list of approximately 113 requirements that are candidates for retirement, along with a justification for retirement of each candidate. A draft Standard Authorization Request (SAR) was posted for informal comment from June 7 to July 10, 2018. After reviewing and incorporating industry comments into the SAR, the SER team will present the SAR to the Standards Committee (SC). At this point, the SC may accept the SAR and authorize for solicitation of SAR drafting team members.

In Phase 2 of the SER project, SER teams will transition their efforts to address requirements that were not initially flagged for retirement, but were identified for alternatives to retirement, such as consolidation with other requirements or a modification. Some concepts under consideration include consolidating and simplifying training and data requirements, transferring competency-based requirements to the certification program and/or CMEP controls review process, and transferring market-related requirements to NAESB.

Key Deliverables and Timeline
- Biweekly meetings conducted for SER working teams (2018 Q1)
- Review teams compiled candidate list of requirements recommended for retirement (2018 Q2)
- Review teams posted draft SAR to industry for comment (2018 Q2)
- Review teams submit revised SAR to SC (2018 Q3)
- SC solicits for standard drafting team(s) for SARs (2018 Q3)
- Industry ballots on proposed retirements/modifications to standards (2018 Q4 – 2019 Q1)
- Propose balloted standards to NERC Board of Trustees (2019 Q1 – Q2)
**BAL-002-3 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event**

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

- **Reliability Standard - BAL-002-3 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event**
  [Clean | Redline to Last Approved]

- **Implementation Plan for BAL-002-3 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event**
  [Implementation Plan]

**Background**
On January 19, 2017, FERC issued an order approving Reliability Standard BAL-002-2.¹ FERC also directed NERC to develop modifications to the standard to require that responsible entities coordinate with the Reliability Coordinator upon circumstances preventing compliance with the 15 minute Area Control Error (ACE) recovery period.

In particular, FERC highlighted the “need to address the underlying concern...that a balancing authority that is operating out-of-balance for an extended period of time is ‘leaning on the system’....”² The Commission stated:

> Accordingly, we direct NERC to develop modifications to Reliability Standard BAL-002-2, Requirement R1 to require balancing authorities or reserve sharing groups: (1) to notify the reliability coordinator of the conditions set forth in Requirement R1, Part 1.3.1 preventing it from complying with the 15-minute ACE recovery period; and (2) to provide the reliability coordinator with its ACE recovery plan, including a target recovery time. NERC may also propose an equally efficient and effective alternative.³

In response to this directive, NERC established Project 2017-06. The Standards Committee approved a Standard Authorization Request (SAR) which was posted for a 30-day comment period beginning on March 13, 2018. The standard drafting team (SDT) reviewed comments received from the SAR posting and developed revisions to the standard to address FERC’s directive. The SDT’s proposed modifications included in BAL-002-3 also intend to clarify that communication with the Reliability Coordinator should proceed in accordance with Energy Emergency Alert procedures within the Emergency Preparedness and Operations Standards.

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² Order No. 835, at P 35. FERC also directed NERC to change Violation Risk Factors for Requirements R1 and R2 from “medium” to high”, which NERC did in 2017, and directed NERC to collect and report on certain data pertaining to implementation of the standard by 2020. NERC is collecting data in anticipation of that 2020 report.
³Order No. 835 at P 37.
Proposed Reliability Standard BAL-002-3 was posted for a 45-day comment period and initial ballot from April 27, 2018. The standard received a 69.46 percent industry approval with a quorum of 81.82 percent. The final ballot for BAL-002-3 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event closed on July 16, 2018 with 71.85 percent industry approval and a quorum of 84.42 percent.

**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 2017-06 Modifications to BAL-002-2]
CIP-012-1 — Cyber Security - Communications between Control Centers

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

- Reliability standard - CIP-012-1 — Cyber Security – Communications between Control Centers
  [CIP-012-1 Standard]
- Implementation Plan for CIP-012-1 — Cyber Security – Communications between Control Centers
  [Implementation Plan]
- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)
  [VRF/VSL Justification]

Background
On January 21, 2016, the Commission issued Order No. 822. In that order the Commission directed NERC to “develop modifications to the CIP Reliability Standards to require responsible entities to implement controls to protect, at a minimum, communication links and sensitive Bulk Electric System (BES) data communicated between BES Control Centers in a manner that is appropriately tailored to address the risks posed to the BES by the assets being protected (i.e., high, medium, or low impact).”

The Standards Committee approved a Standard Authorization Request (SAR) to address the FERC directive, among other things. The SAR posted for a 30-day comment period from March 23, 2016 through April 21, 2016. The SDT reviewed the comments received from the SAR posting and posted the SAR again June 1, 2016 through June 30, 2016.

The Project 2016-02 standard drafting team (SDT) developed new Reliability Standard CIP-012-1 in response to the directive to require responsible entities to implement controls to protect sensitive BES data while being transmitted over communications links between BES Control Centers. Due to the sensitivity of the data being communicated between the Control Centers, the standard applies to all impact levels (i.e., high, medium, or low impact).

The standard was posted for a 45-day comment period and initial ballot from July 27, 2017 through September 11, 2017, which received a 42.74 percent industry approval with a quorum of 80.26. The standard received a 68.45 percent industry approval with a quorum of 75.16 percent during its May 18, 2018 through July 3, 2018 additional ballot. The final ballot for CIP-012-1 closed after these materials were distributed and will be presented at the August 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 2016-02 Modifications to the CIP Standards]
VAR-001-5 - Voltage and Reactive Control

**Action**
Adopt the following standard documents and authorize NERC staff to file with applicable regulatory authorities:

- Reliability Standard VAR-001-5, Effective Date, and Associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)

[VAR-001-5 - Clean] [VAR-001-5 – Redline]

**Retirement**
- VAR-001-4.2 – Voltage and Reactive Control

**Background**
On June 8, 2017, WECC submitted a Standard Authorization Request through WECC’s Reliability Standards Development Procedures requesting a required five-year review of the WECC Regional Variance of NERC Reliability Standard VAR-001-4.2. The review included actions to address the recommendations made by the continent-wide Periodic Review of VAR-001-4.1.

**Summary**
The VAR-001-5 Regional standard drafting team reviewed the regional variance contained in VAR-001-4.2, including recommendations resulting from the Periodic Review Recommendations for VAR-001-4.1 - Voltage and Reactive Control, May 19, 2017.

After considering NERC’s recommendations and comments received during two postings for comment, the drafting team made the following changes:

- In E.A.14 “Area” was corrected to “area”.
- E.A.15 and associated elements were eliminated because the reliability-related task required in E.A.15 is contained as a task of VAR-002-4.1 Generator Operation for Maintaining Network Voltage Schedules, Requirement R2, Part 2.3.
- Measures were updated and relocated matching current NERC conventions, and “shall” was replaced with “will”.
- Typographical errors in VSL Table for E.A.17 were corrected.

On June 18, 2018, after passing the WECC final ballot which achieved a 96.97 percent quorum and a 100 percent weighted approval, the WECC Board of Directors approved sending the proposed modifications to the Western Interconnection Variance to VAR-001-4.2 to NERC for adoption and subsequent filing with applicable regulatory authorities. NERC staff supports the modifications to the Western Interconnection Variance to VAR-001-4.2, which was posted for a 45-day public comment period from June 22, 2018 through August 6, 2018. Any adverse comments or minority opinions received during the comment period will be reviewed at the NERC Board of Trustees meeting on August 16, 2018.
Pertinent FERC Directives
None

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

[VAR-001-5 WECC Regional Variance, Five Year Review]
Reliability Coordinator Function in the Western Interconnection

Action
Information

Introduction
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 Balancing Authorities (BAs) and Transmission Operators (TOP) in the West.

Background
On June 20, 2018, WECC received an official request from SPP to provide RC services in the WI for the Western Area Power Administration - Rocky Mountain Region BA (WACM) and Western Area Power Administration - Upper Great Plains Region BA (WAUW). On July 18, 2018, Peak announced that it will cease operation at the end of 2019 and will be ending its partnership with PJM Connext to explore reliability services and markets 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 12-18 months, there will be more than one RC in the WI.

- As the Regional Entity for the Western Interconnection, 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. In response to requests from stakeholders, WECC has been hosting a series of RC Forums, most recently on July 19 and will continue to host them based on feedback from stakeholders. These forums have provided stakeholders with an opportunity to understand and discuss the reliability implications of multiple RCs in the WI. The RC-RC Coordination Group will be meeting in August to review action items from the July 19 Forum.
The presentation will discuss in more detail the activities WECC and NERC have underway to understand the evolving situation and activities planned in preparation for the necessary Certifications.
NERC Rules of Procedure Section 1208 Registration Transfer Request of Wisconsin Public Service Corporation and Upper Michigan Energy Resources

Action
Approve the proposed reassignment of Wisconsin Public Service Corporation and Upper Michigan Energy Resources Corporation from Midwest Reliability Organization to ReliabilityFirst Corporation.

Approve the revised maps in Exhibit A to the Regional Delegation Agreements with MRO and ReliabilityFirst to reflect the new geographic boundaries of each of these Regional Entities.

Background
Consistent with Section 1208.3 of the NERC Rules of Procedure (ROP), ReliabilityFirst Corporation (RF) submitted a written request to NERC on May 1, 2018 to transfer the registration of Wisconsin Public Service Corporation (WPSC) and Upper Michigan Energy Resources Corporation (UMERC) from MRO to RF. MRO has informed NERC and RF that it does not oppose the request and will support NERC’s decision determining the appropriate registration for WPSC and UMERC.

WEC Energy Group, the parent company of both WPSC and UMERC, submitted the original registration transfer request to MRO and RF on December 14, 2017. Requests to transfer registrations are governed by Section 1208 of the ROP. Consistent with Section 1208.2, MRO and RF posted the transfer request on their respective websites for a 21-day comment period. MRO received one comment from Glencoe Light and Power Commission available here which stated that it had no objection to the transfer request. RF received one comment in support from Cuyahoga Falls Electric Department available here. Per Section 1208.2, MRO informed WEC Energy Group on April 24, 2018 that it would not oppose its request and would support NERC’s decision.

On May 2, 2018, NERC posted information concerning the proposed transfer on its website for 21 days, available here, and received one comment in support of the registration transfer request from Dominion Energy. NERC staff analyzed the request and supporting materials submitted by RF and adopts the analysis, as summarized herein, as consistent with Section 1208 of the ROP. NERC management recommends that the NERC Board of Trustees approve the transfer based on the following findings.

As discussed herein, NERC examined the following ROP Section 1208 criteria:

1. The impacts of the proposed transfer on other Bulk Power System owners, operators; and users,
2. The location of the registered entity’s Bulk Power System facilities in relation to the geographic and electrical boundaries of the respective Regions;
3. The impacts of the proposed transfer on the current and future staffing, resources, budgets and assessments to other Load-Serving Entities of each Regional Entity, including 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;

4. The registered entity’s compliance history with its current Regional Entity and the
manner in which pending compliance monitoring and enforcement matters concerning
the registered entity would be transitioned from the current Regional Entity to the
transferee Regional Entity; and,

5. Any other reasons the registered entity and either Regional Entity considers relevant.

Description of Organizations and their Recent Organizational Changes
In June 2015, Wisconsin Electric Power Company’s (Wisconsin Electric) parent company, WEC
Energy Group, acquired WPSC. WPSC serves approximately 444,000 electric customers.
Following this acquisition, WPSC consolidated its control center with the control center of
Wisconsin Electric in the RF Region.

In 2017, WEC Energy Group established UMERC, a new company consisting of Wisconsin
Electric’s distribution assets, with a total peak load of 110.9 MW, in the Upper Peninsula of
Michigan (located in RF) and WPSC’s distribution assets in the Upper Peninsula of Michigan
(located in MRO).

The Registration Transfer of WPSC/UMERC’s Facilities Will Have a Negligible Impact
on other Bulk Power System Owners, Operators, and Users
There will be a negligible impact on other bulk power system owners, operators and users as a
result of the proposed registration transfer. NERC has considered the Reliability Coordinator,
Balancing Authority, Transmission Operator, and Planning Authority / Planning Coordinator
alignment, as well as the physical location of the underlying facilities of the Transmission
Owners, Generator Owners, Generator Operators, Transmission Planners and Distribution
Providers. Moving WPSC / UMERC’s registration from MRO to RF will not affect Midcontinent
Independent System Operator (MISO) serving as their Balancing Authority and Reliability
Coordinator as MISO is registered in both MRO and RF. American Transmission Company and
Dairyland Power Cooperative will remain as the Transmission Operators for those WPSC
generation assets for which they currently service that function.

WPSC/UMERC’s Facilities Have More Geographic and Electrical Boundaries with RF
than with MRO
WPSC / UMERC’s facilities have more geographical and electrical boundaries with RF than with
MRO. WPSC is located in eastern Wisconsin along Lake Michigan. WPSC shares its northern
and southern boundaries and a portion of its western boundary with RF and MRO. WPSC’s
eastern boundary is with Lake Michigan, along with the remainder of RF’s footprint to the
north, south, and east of Lake Michigan. WPSC’s neighbor to the north, south and west is
Wisconsin Electric, which is located in RF. Transferring the registration of WPSC and UMERC-
MRO territory to RF would make one contiguous region with RF out of several geographic
islands.

UMERC has 75 percent of its customers and 80 percent of its distribution lines in RF. Similarly,
WPSC has more Bulk Electric System (BES) tie lines with RF than MRO, as well as a greater
number of high-voltage BES tie lines to RF than MRO. Finally, more than 60 percent of the high
voltage electrical interconnections with the WPSC Balancing Authority are within the RF region.
Therefore, NERC recommends maintaining the UMERC-MRO ties with the larger percentages of other high voltage electrical interconnections of the WPS Balancing Authority in RF.

RF’s Staffing, Resources, Budgets and Assessments Resources to Perform CMEP Activities for WPSC/UMERC Are Not Affected as RF Currently Serves as the Compliance Enforcement Authority for WPSC/UMERC’s CMEP Activities
Following the acquisition of WPSC and the creation of UMERC, WEC Energy Group established a single, uniform compliance program for Wisconsin Electric and WPSC/UMERC. RF and MRO agreed that RF should serve as its Compliance Enforcement Authority for all Compliance Monitoring and Enforcement Program activity. As a result, RF is aware of WPSC / UMERC’s compliance history and already manages their compliance monitoring and enforcement matters. RF will not need additional resources to perform CMEP activities for WPSC/UMERC if the Commission approves the transfer of their registration from MRO to RF.

Amendments to the MRO and RF Regional Delegation Agreements with NERC
NERC, MRO and RF propose to amend the Regional Delegation Agreements between NERC and MRO, and NERC and RF, respectively, to reflect the new regional boundaries resulting from the reassignment of entities discussed above. The term of the revised Regional Delegation Agreements will not change. Revised maps in Exhibit A to each Regional Delegation Agreement are attached as Exhibit A-MRO and Exhibit A-RF.

Upon approval by the NERC Board of Trustees, the revised maps would be submitted to the boards of MRO and RF, respectively. Upon approval by those boards, the agreements would be included in the referenced filing with the Federal Energy Regulatory Commission (Commission) and posted on the NERC website. The revised maps will not take effect until approved by the Commission.
MRO is one of seven Regional Entities that operates under a Delegation Agreement with the North American Electric (NERC). MRO is a not for profit entity committed to safeguarding and improving reliability of the Bulk Power System in all or part of the states of Arkansas, Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wisconsin as indicated in the map below and provided in the NERC Compliance Registry and the Canadian provinces of Manitoba and Saskatchewan. The Midwest Reliability Organization region supplies approximately 270,000,000 megawatt-hours to more than twenty million people and covers roughly one million square miles.
Exhibit A — Regional Boundaries

The Boundaries of ReliabilityFirst Corporation (ReliabilityFirst) are defined by the service territories of Load Serving Entities (LSEs) and include all of New Jersey, Delaware, Pennsylvania, Maryland, District of Columbia, West Virginia, Ohio, Indiana, Lower Michigan and portions of Upper Michigan, Wisconsin, Illinois, Kentucky, Tennessee and Virginia as shown on the map below. In addition, transmission systems and generation within the metered boundaries of the LSEs are within ReliabilityFirst even if outside the respective service territories shown. The area is electrically contiguous.
Revisions to Appendix 4E of the NERC Rules of Procedure

Action
Approve proposed revisions to Appendix 4E of the NERC Rules of Procedure (NERC ROP) and direct staff to file the revised ROP with the applicable governmental authorities for approval.

Attachment 1 Redline Changes to Appendix 4E CCCPP-004
Attachment 2 Redline Changes to Appendix 4E CCCPP-006
Attachment 3 Consideration of Comments

Background
Pursuant to the Compliance and Certification Committee’s (CCC) Charter, the CCC’s Hearing Procedure found in NERC ROP Section CCCPP-004 Appendix 4E is required to follow the Hearing Procedure mandated and approved by jurisdictional authorities for use by NERC and the Regional Entities in the Compliance Monitoring and Enforcement Program contained in Section 403 of the ROP. NERC is proposing revisions that will align the rules and procedural steps of the Hearing Procedures, which govern any contest between NERC acting in its capacity as a Compliance Enforcement Authority and a Regional Entity or registered entity regarding NERC findings, penalties, or sanctions for violation(s) of Reliability Standard(s) as described in Section 408 of the NERC ROP, with the rules and procedural steps of NERC ROP Section 403, which describes the Regional Entity Consolidated Hearing Process. NERC’s proposed revisions also update references to the CCC Charter and cross-references to the NERC ROP and other federal regulations.

NERC is not proposing any substantive revisions for the NERC ROP Mediation Procedures for the CCC, found in section CCCPP-006 of Appendix 4E, but is instead updating it to match the most current NERC template and formatting changes.

Summary

CCCPP-004 Revisions—Hearing Procedures
The majority of the CCCPP-004 revisions are focused on synchronizing the terminology and structure of the CCC Hearing Procedures and the Regional Entity Hearing Process. These changes include template and formatting changes as well as changes that ensure consistent terminology. Hearing panel composition and termination requirements were also revised for better alignment with Section 403. Other sections were added, updated, and realigned to better reflect the corresponding language in Section 403 of the NERC ROP.

Other proposed revisions focus on clarification, including edits to submission, filing, intervention, and question certification procedures. Clarifications for ex parte communication exceptions, required ethical standards, and settlement procedures were also added. Representations and definitions were also updated for the purposes of synchronization and
clarity. A preface was added to emphasize the Electric Reliability Organization (ERO) vision and to describe the North American bulk power system (BPS).

**CCCPP-006 Revisions—Mediation Procedures**

Revisions to CCCPP-006 were not substantive and were largely focused on matching the format to NERC’s most recent report template. One revision clarifies the parties’ ability to discuss interests and concerns with mediators once the mediation process begins. A preface was added to emphasize the ERO’s vision and to describe the North American BPS.

**Public Comment Period**

NERC publicly posted its proposed revisions to Appendix 4E on April 13, 2018 for the required 45-day comment period. NERC received four sets of comments from industry stakeholders in response to the posting, which closed May 28, 2018.

Each of the comments received is summarized and addressed in Attachment 3, through the hyperlink provided above. The full comments from stakeholders are also posted on the NERC ROP page of the NERC website.
Section 1600 Geomagnetic Disturbance Data Request

Action
Approve

Background
On September 22, 2016, the Federal Energy Regulatory Commission (FERC) issued Order No. 830 approving Reliability Standard TPL-007-1 – Transmission System Planned Performance for Geomagnetic Disturbance Events. In this order, FERC also directed NERC to collect Geomagnetic Disturbance (GMD) data, pursuant to its authority under Section 1600 of the NERC Rules of Procedure. NERC staff and the Geomagnetic Disturbance Data Task Force (GMDTF) developed the proposed GMD Data Request to address this directive.

The proposed GMD Data Request would provide NERC with GMD monitoring data from reporting entities that possess the requested data. It is being collected for the purpose of supporting ongoing research and analysis of GMD risk to the reliable operation of the bulk power system (BPS). For example, measured geomagnetically-induced current (GIC) and magnetometer data can help validate various models used in calculating GICs and assessing their impacts in power systems.

The GMD Data Request would apply to Transmission Owners and Generator Owners in the United States that possess GIC monitoring and magnetometer data. Although not required, Canadian Transmission Owners and Generator Owners are encouraged to participate.

Reporting entities would be requested to provide information related to their installed GIC monitor and magnetometer capabilities, and to provide data from these devices to NERC for strong GMD events (K-7 and greater as reported by U.S. Space Weather Prediction Center). The reporting threshold was selected to provide significant data for research and model validation purposes without imposing excess burden on reporting entities. Based on historical data, the reporting threshold is expected to be reached 200 times per 11-year solar cycle. Reporting entities are not expected to report data that is publicly available.

FERC Order No. 830 Directives
Excerpts from the pertinent directives in Order No. 830 are provided below.

[T]he Commission directs NERC, pursuant to Section 1600 of the NERC Rules of Procedure, to collect GIC monitoring and magnetometer data from registered entities for the period beginning May 2013, including both data existing as of the date of this order and new data going forward, and to make that information available. (p.88)

The Commission’s directives to collect and make available GIC monitoring and magnetometer data do not apply to non-U.S. responsible entities or Alaska and Hawaii. (FN118)
We also direct NERC, pursuant to Sections 1500 and 1600 of the NERC Rules of Procedure, to collect and make GIC monitoring and magnetometer data available. (p. 93)

If GIC monitoring and magnetometer data is already publicly available (e.g., from a government entity or university), NERC need not duplicate these efforts. (FN 112)

Based on the record in this proceeding, we believe that GIC and magnetometer data typically should not be designated as Confidential Information under the NERC Rules of Procedure. (p. 94)

Notwithstanding our findings here, to the extent any entity seeks confidential treatment of the data it provides to NERC, the burden rests on that entity to justify the confidential treatment. Exceptions are possible if the providing entity obtains from NERC, at the time it submits data to NERC, a determination that GIC or magnetometer data qualify as Confidential Information. Entities denied access to GIC and magnetometer data by NERC or providers denied Confidential Information treatment of GIC and magnetometer data may appeal NERCs decision to the Commission. (p. 95)

Development Process
On January 8, 2018, NERC provided the proposed GMD Data Request to the FERC Office of Electric Reliability for review as required by Section 1602 of the NERC Rules of Procedure. The GMD Data Request was posted for a 45-day public comment period from February 7, 2018 through March 26, 2018. 28 set of comments were received. Most commenters agreed that the proposed GMD Data Request addressed the directives from Order No. 830. Some commenters suggested revisions to clarify technical details and reporting processes. NERC staff and the GMDTF reviewed the comments, developed revisions to address technical and reporting issues, and provided written responses to the comments. Click here to view the comments and responses. On June 5, 2018, the (PC) endorsed the GMD Data Request.

Minority Issue
The GMD Data Request specifies that GIC monitor location data is reported in general terms (nearest tenth of degree in latitude and longitude, which is equivalent to about seven miles in distance). Some stakeholders expressed concerns with making GIC monitor location publicly available. NERC staff and the GMDTF carefully considered these comments but did not substantively change the GMD Data Request.

Minor revisions were made to clarify the provisions for considering requests for Confidential Information treatment of GMD data, which are summarized as follows:

- Consistent with FERC’s determination in Order No. 830, NERC does not anticipate that the requested information will contain Confidential Information as that term is defined in Section 1501 of the NERC Rules of Procedure;
- Reporting Entities that believe their data is confidential shall submit a request to NERC for confidential treatment that identifies the category or categories under Section 1501 of the NERC Rules of Procedure in which the information falls, including specific reasons why the information is believed to be confidential; and
- NERC will make a determination on the request and treat the data accordingly.
These provisions are consistent with FERC’s guidance in Order No. 830 (particularly p.95) and with how confidential information is defined in Section 1501 of the NERC Rules of Procedure.

**Next Steps**
Following Board of Trustees authorization, NERC staff will issue the GMD Data Request to the reporting entities. A data reporting instruction and technology application for collecting GMD data will be developed through 2019. It is projected that data will be collected and made available beginning in 2020.
Proposed Amendments to the Western Electricity Coordinating Council Bylaws

Action
Approve proposed amendments to the Bylaws of the Western Electricity Coordinating Council (WECC Bylaws) and file with the applicable governmental authorities for approval. The amendments to the WECC Bylaws do not affect WECC’s qualifications or WECC’s ability to function as a Regional Entity under its Regional Delegation Agreement.

Background
WECC completed a multi-year review and modernization of the WECC Bylaws and now submits those WECC Bylaws to the NERC Board of Trustees for approval. At the June 2016 WECC Board Meeting, the Member Advisory Committee Chair proposed the effort to clarify and clean up the WECC Bylaws and the Governance Committee took responsibility for the project on behalf of the WECC Board of Directors (WECC Board).

The proposed amendments seek to accomplish the following:

- Bring the WECC mission into harmony with the mission of the Electric Reliability Organization (“ERO”) Enterprise (Section 1 and previous Section 2);
- Remove obsolete and outdated definitions (Section 3);
- Update voting and notice requirements to reflect the use of technology (Sections 5, 6, 7 and 12);
- Codify the WECC practice of providing member representation on the Nominating Committee (Section 6.4.1);
- Clarify the process for filling vacant director positions (Section 6.7);
- Streamline the committee governance by moving committee descriptions and governance requirements from the WECC Bylaws to Board-approved committee charters (Sections 7 and 8);
- Remove standards development procedures from the WECC Bylaws (Section 8); and,
- Remove obsolete language related to WECC’s 2014 transition to an independent organization (previous Section 17).

The proposed amendments were completed in four stages:

- Substantive changes requiring only WECC board approval (approved December 6, 2017);
- Substantive changes requiring both WECC board and member approval (approved June 19, 2018);
- Non-substantive changes requiring only WECC board approval (approved by the WECC board in March 8, 2017); and,
- Non-substantive changes requiring WECC board and WECC member approval (approved September 12, 2017).
Section 12 of the proposed WECC Bylaws require the WECC Board to approve amendments to the WECC Bylaws after providing no less than 30 days’ prior notice to all members. Each of the proposed revisions was noticed for the required time period and also posted for comment by members and stakeholders at various times over the course of the project. Each comment received was considered by the WECC Governance Committee.

NERC staff has determined that there are no reliability-related issues raised by the amendments. As amended, the WECC Bylaws continue to satisfy the five governance criteria specified in Exhibit B to the Amended and Restated Delegation Agreement between WECC and NERC. Attachment A contains a clean copy of the WECC Bylaws and a redline copy of the WECC Bylaws is available here.

**Overview of Proposed Revisions to the WECC Bylaws**

Below is an overview of the most significant proposed changes to the WECC Bylaws.

**Revised Section 1.0 - Vision and Mission; Deleted Section 2.0 – Furtherance of WECC’s Mission**

WECC revised its vision statement to provide that it seeks to achieve a “reliable and secure Bulk Power System [“BPS”] in the Western Interconnection” and removed references to the Bulk Electric System (“BES”) and achieving its vision “at least cost.” Its mission statement is streamlined to state that WECC shall “effectively and efficiently mitigate risks to the reliability and security of the Western Interconnection BPS while carrying out the responsibilities of the Regional Entity.” This aligns with the vision and mission statement for the ERO. All detail regarding WECC’s activities in furtherance of this mission are removed and more addressed in WECC’s Regional Delegation Agreement and business plan and budget.

**Revised Section 4.8 – Compliance and Enforcement**

WECC proposes to remove obsolete references to the Reliability Management System and harmonize the WECC Bylaws language with WECC’s responsibilities under Section 215 of the Federal Power Act and its delegation agreement with NERC. The Reliability Management System was a pre-Section 215 set of mandatory standards applicable in the Western Interconnection.

**Revised Section 4.9 – WECC Structure and Governance Review**

WECC proposes to delete language that is no longer applicable now that the first WECC structure and governance review, post-bifurcation and post-creation of Peak Reliability, is complete. WECC clarifies the future scope of such reviews and deletes overly prescriptive language. WECC also clarifies language surrounding the obligation to obtain member approval of Board assessments and recommendations as well as to collaborate with the Member Advisory Committee and the Western Interconnection Regional Advisory Board. WECC proposes to remove limitations on the scope of this review to allow its Board and membership maximum flexibility in carrying out the review.

**Renumbered and Revised Section 5.4 – Notice of Member Meetings**

WECC proposes to have the Secretary notify members of meetings in lieu of the Chief Executive Officer. WECC adopts a single notice requirement for all meetings regardless of the method by which the notice is provided.
Revised Section 6.2 – Composition of the Board and Board Member Qualifications
WECC specifies that the level of prior experience necessary to become a Director must be “at the senior management or officer level.”

With respect to Board composition, WECC revises the language to specify that Director representation from British Columbia, Alberta or Mexico warrants that the Director also have residency and certain operational experience in that jurisdiction.

WECC identifies “resolutions” as the mechanism through which the Chief Executive Officer may be appointed as a voting Board member.

Revised Section 6.4 – Nomination, Selection and Compensation of Directors
WECC provides for non-voting representation from all member classes on the Nominating Committee and details how the Member Advisory Committee shall select non-voting members.

WECC clarifies that any party may recommend candidates to the Nominating Committee.

WECC includes a new mechanism to elect Directors without a meeting.

WECC proposes that responsibility for a study of director compensation be given to the Board rather than to the Chief Executive Officer. The Board is to direct staff to conduct the study for the Nominating Committee.

Revised Section 6.5 – Removal of Directors
WECC proposes to use identical language for both the election of directors (provided in Section 4.3) and the removal of directors. Specifically, instead of a majority vote from each of the five Classes of members, WECC proposes a simple majority across at least three of the five Classes of members. WECC also specifies the mechanism through which members can initiate a vote for removal.

Revised Section 6.7 – Procedures for Filling Vacant Director Positions
WECC clarifies the process and timelines for filling a vacancy on the Board. The Nominating Committee is required to initiate a search where there is more than one year remaining on the vacating Director’s term. Vacancies may remain unfilled if less than one year remains in the term of the vacating Director, unless a temporary Director is appointed.

In cases where a Director is not re-elected due to a procedural inability, WECC clarifies that that Director may serve for an additional 12 months “from the original expiration date” of his or her term.

Revised Section 6.10 – Delegation of Board Authority
WECC clarifies that Board authority can be delegated not just to any Board committee or the Chief Executive Officer, but to any person, subject to the restrictions in this section. As a result, all references to “decisions by the Chief Executive Officer” are removed. For decisions delegated to a member committee, its members must be noticed.
Revised Section 7.4 – Board Action by Unanimous Consent
WECC specifies that Board action by unanimous consent requires three business days’ prior notice to Members.

Revised Section 7.5 – Notice of Board Meetings
WECC removes the requirement for public notice via first-class mail or fax as redundant with other notice provisions and unnecessary given the prevalence of electronic communications.

Original Section 7.7 – Board Committees; Revised Section 8 – Member Committees
WECC proposes to remove all references to specific committees in the WECC Bylaws. Instead,

WECC provides a general provision that the Board may establish committees “related to accomplishing WECC’s mission in the Western Interconnection” and that information regarding membership, responsibilities and operations of such committees will be addressed in their respective charters instead of the WECC Bylaws. WECC also mandates a Member Advisory Committee and a Nominating Committee. Finally, the Board standards of conduct as applied to members of Board committees are removed from the WECC Bylaws because references to board committees are removed.

Revised Section 9 – The Chief Executive Officer, Officers, and Employees
WECC removes language specifying the qualifications of a Chief Executive Officer to allow the Board more flexibility in identifying a qualified candidate.

Deleted Section 22 – WECC Transition
WECC deletes provisions that apply to the period of time when WECC transitioned from a hybrid Board to an independent Board.

Appendix C - Dispute Resolution
WECC’s Dispute Resolution Procedure is an artifact of WECC’s merger with the regional transmission associations and is no longer part of WECC’s mission. As a regulator, WECC should not arbitrate what are generally commercial disputes between its members. The WECC Board intends to create procedures for addressing disputes between members and staff.
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BYLAWS

of

the

WESTERN ELECTRICITY COORDINATING COUNCIL

   1.1 Vision.
       A reliable and secure Bulk Power System in the Western Interconnection.

   1.2 Mission
       To effectively and efficiently mitigate risks to the reliability and security of the Western Interconnection Bulk Power System while carrying out the responsibilities of the Regional Entity.

2. Organizational Characteristics.
   As WECC carries out activities to fulfill its mission, it will seek to develop and maintain the following characteristics:

   1) dedication to serving the individuals, businesses, and other organizations that generate, transmit, distribute, market, use electrical energy, and regulate and develop public policy in the Western Interconnection;

   2) efficiency in its administration, decision-making, policy and standards development, and dispute resolution processes;

   3) the ability to maintain status as an Interconnection-wide Regional Entity and be afforded deference and delegation by ERO (or successor organization);

   4) fair and open processes through which practices, policies, and standards are developed and implemented based on sound technical and policy analysis; and

   5) allow access to WECC data by individuals who can demonstrate a legitimate business need for the data, provided such individuals agree to such protections and non-disclosure restrictions that may be necessary due to the nature of the data sought to be accessed and agree to pay the incremental costs of providing the data which may be requested.

3. Definitions.
   The capitalized terms used in these Bylaws shall have the meanings set forth below, or if not set forth below, shall have the meanings given them in the Glossary of Terms Used in NERC Reliability Standards.
3.1 Affiliate.

An Entity that directly or indirectly through one (1) or more intermediaries, controls, or is controlled by, or is under common control with, another Entity. An Entity “controls” any Entity in which it has the power to vote, directly or indirectly, 5 percent or more of the voting interests in such Entity or, in the case of a partnership, if it is a general partner. Notwithstanding the foregoing definition, for purposes of these Bylaws:

1) electric distribution cooperatives that are member-owners of a generation and transmission cooperative are not Affiliates of the generation and transmission cooperative or of each other;

2) an Entity controlled by or operating as a unit, agency, or subdivision of a local, state, provincial, or U.S. federal or Canadian or Mexican national government will not be considered an Affiliate of any other entity controlled by or operating as a unit, agency, or subdivision of a local, state, provincial, or federal government;

3) separate agencies of a single state or province, or of the U.S. federal or Canadian or Mexican national government will not be considered Affiliates of each other, regardless of any commonality of political control;

4) members of any joint powers authority, and such joint powers authority, will not be considered Affiliates of each other; and

5) members of a Regional Transmission Organization (RTO) will not be considered Affiliates of such RTO or of each other solely as a result of such membership.

3.2 Alternate Member Representative.

In the absence of the Member Representative, the Alternate Member Representative may take any action reserved for the Member Representative. All references in these Bylaws to action by the Alternate Member Representative assume the absence of the Member Representative. The Alternate Member Representative is designated in accordance with procedures approved by the Secretary.

3.3 Annual Member Meeting.

The annual membership meeting of WECC, as described in Section 5.2.1.

3.4 Applicable Regulatory Authority.

The FERC or any national, state or provincial government agency with jurisdiction to regulate or directly affect the transmission of electricity within the Western Interconnection.

3.5 Bulk Power System.

The term Bulk Power System shall have the definition set forth in section 215 of the Federal Power Act.
3.6 **Class.**
A grouping of Members described in Sections 4.2.1 through 4.2.5 and 4.3.

3.7 **Compliance Hearing Body.**
The hearing body that provides a balanced compliance panel to conduct hearings for the resolution of disputes concerning compliance with or enforcement of Reliability Standards that may arise between WECC (acting as Compliance Enforcement Authority for the Western Interconnection) and a Registered Entity.

3.8 **Day(s).**
Except where otherwise explicitly defined, the term “day” or “days” shall refer to calendar days.

3.9 **Delegation Agreement.**
An agreement between the ERO and WECC pursuant to Section 215 of the Federal Power Act by which the ERO delegates to WECC designated powers, rights and responsibilities regarding the reliability of the Western Interconnection.

3.10 **Electric Line of Business.**
The generation, transmission, distribution, or trading of electricity or the provision of related energy services in the Western Interconnection.

3.11 **Electric Reliability Organization (ERO).**
The organization certified by FERC under 18 C.F.R. §39.3, the purpose of which is to establish and enforce Reliability Standards for the BulkElectric System in the United States, subject to FERC review.

3.12 **Entity.**
Any individual, person, corporation, partnership, association, governmental body or organization of any kind.

3.13 **FERC.**
The Federal Energy Regulatory Commission or any successor.

3.14 **Meeting.**
A gathering in person, by telephone, or by other permitted means of the members of an officially designated WECC group (e.g., Board of Directors (Board), committee, or other group) to deliberate and take action through a vote of the group’s members. Votes, decisions and actions by any WECC group can only be taken during meetings held in accordance with the requirements contained in these Bylaws or by following the requirements for written and electronic ballots as approved by the Board of Directors.
3.15 **Member.**
Any entity that has applied and been accepted for membership in WECC.

3.16 **Member Representative.**
The Member Representative, or Alternate Member Representative or designated Proxy in the absence of the Member Representative, is the only person authorized to cast the Member’s ballot in elections for Director, Member Advisory Committee (MAC) Representative, or proposed Bylaw amendments. WECC consultation with and communications to Members are performed via public postings and emails to the Member Representative and Alternate Member Representative. Only the Member Representative, or designated Alternate Member Representative, may submit comments to WECC on behalf of the Member—the Member Representative represents and speaks for the Member. Standing Committee members represent and vote on behalf of their respective members, but only on matters directly before those committees. The Member Representative is designated in accordance with procedures approved by the Secretary.

3.17 **Proxy.**
The person designated in accordance with procedures established by the Secretary to represent a Member in person at a meeting of the membership or a Member Class and to cast a ballot in person on behalf of that Member in elections for Director, MAC Representative, or proposed Bylaws amendments whenever the Member Representative and Alternate Member Representative cannot be present to cast a ballot.

3.18 **Regional Criteria**
The term Regional Criteria shall have the definition set forth in the NERC Rules of Procedure as may occasionally be amended.

3.19 **Regional Entity (RE).**
An entity having enforcement authority pursuant to 18 C.F.R. §39.8.

3.20 **Registered Entity.**
An owner, operator, or user of the Bulk Electric System or the entities registered as their delegates compliance in the North American Electric Reliability Corporation Compliance Registry or similar Entity operating in Canada or Mexico and which could be registered in the NERC Compliance Registry if it operated in the United States.
3.21 **Reliability Standard.**

A requirement approved by FERC under section 215 of the Federal Power Act, to provide for reliable operation of the Bulk Electric System in the United States. Regional Reliability Standards are specific to the Western Interconnection and shall be established using the WECC Reliability Standards Development Procedures.

3.22 **Reliability Standards Development Procedures.**

The FERC-approved process for developing and approving WECC Regional Reliability Standards (or its successor).

3.23 **Western Interconnection.**

The geographic area containing the synchronously operated electric transmission grid in the western part of North America, which includes in the United States—Arizona, California, Idaho, Nevada, Oregon, Utah, and Washington as well as parts of Montana, Nebraska, New Mexico, South Dakota, Texas, Wyoming, and Colorado; parts of the Canadian provinces of British Columbia and Alberta; and Baja California Norte, Mexico.

4. **Members and Membership.**

4.1 **Voluntary Membership.**

Except as otherwise may be required by applicable authority, membership in WECC is voluntary. A Member may withdraw its membership upon giving the Secretary thirty (30) days’ advance written notice. However, such notice of withdrawal will not relieve the Member from fulfilling any outstanding Member obligations. Nothing herein will relieve any Member withdrawing from WECC from any obligation it may have under applicable law including, but not limited to, Section 215 of the Federal Power Act. A Member that withdraws is obligated to pay any unpaid dues owed through the remainder of the calendar year in which its withdrawal becomes effective.

4.2 **Eligibility for Membership.**

Subject to Section 4.5, any Entity that meets the criteria for membership in the membership classes described in Sections 4.2.1 through 4.2.5 may be a Member of WECC:

4.2.1 Class 1. Electric Line of Business Entities owning, controlling or operating more than 1000 circuit miles of transmission lines of 115kV and higher voltages within the Western Interconnection.

4.2.2 Class 2. Electric Line of Business Entities owning, controlling or operating transmission or distribution lines, but not more than 1,000 circuit miles of transmission lines of 115 kV or greater, within the Western Interconnection.
4.2.3 Class 3. Electric Line of Business Entities doing business in the Western Interconnection that do not own, control or operate transmission or distribution lines in the Western Interconnection, including power marketers, independent power producers, Load Serving Entities, any other Entities whose primary business is the provision of energy services, and those Entities that are not eligible for membership in the other Member Classes and who have a substantial interest in the purposes of WECC.

4.2.4 Class 4. End users of significant amounts of electricity in the Western Interconnection, including industrial, agricultural, commercial and retail entities as well as organizations in the Western Interconnection that represent the interests of a substantial number of end users or a substantial number of persons interested in the impacts of electric systems on the public or the environment.

4.2.5 Class 5. Representatives of nations, states and provinces in the Western Interconnection, provided that such representatives will have policy or regulatory roles and do not represent national, state or provincial agencies and departments whose function involves significant direct participation in the market as end users or in Electric Line of Business activities.

4.3 Designation of Membership Class.

A Member of WECC may not belong to more than one Class. An applicant for membership will designate the Class for which it qualifies based on the criteria for membership set forth in Section 4.2. However, any Member owning, controlling or operating transmission facilities or distribution facilities must belong to Class 1 or 2 unless the Board grants the Member’s petition for a change in Class pursuant to the provisions of Section 4.4 of these Bylaws. Applications for membership will be submitted to WECC, which will review the application to verify eligibility for membership and Class designation. An applicant whose request has been rejected or any Member that disputes the WECC’s determination regarding the appropriate Member Class designation may request review by the CEO. If the applicant or any Member disagrees with the CEO’s decision, the applicant or such Member may appeal this decision to the Board.

4.4 Changes in Membership Class.

Notwithstanding any other provision of these Bylaws, upon a petition from a Member, the WECC (subject to review by the CEO and appeal to the Board) may allow the Member to change Class if the interest of the Member is more closely aligned with the proposed Class than the Member’s current Class.
4.5 **Affiliates and Distinct Business Entities.**

An Affiliate of a Member may also become a Member if the Affiliate satisfies the qualifications for membership.

4.5.1 The Affiliate applying for membership must disclose all of its Affiliates that are WECC Members and the Classes to which the Affiliates belong. Every Member will promptly notify WECC whenever it becomes, or ceases to be, an Affiliate of any other Member.

4.5.2 Affiliates may be members of the same Class; however, a group of Affiliates within a single Class may only have one vote in any WECC forum. Except as set forth in the Reliability Standards Development Procedures, a group of Affiliates within a single Class may, by providing at least three (3) business days written notice to the Secretary, split their single vote equally among all Affiliates or designate a single Affiliate as the group’s voting Member.

4.5.3 For good cause shown and with the express approval of the Board, a company or organization containing functionally distinct entities within it may obtain separate memberships for such entities; provided that such entities will be considered Affiliates.

4.5.4 The Board may adopt a policy regarding whether Members may share the benefits of membership (including the right to receive information that is only available to Members) with a non-member Affiliate.

4.6 **Rights and Obligations of Membership.**

Except as otherwise provided in these Bylaws or other applicable authority, WECC Members have the following general rights and obligations:

4.6.1 The right to elect and remove Directors as described in Sections 6.4 and 6.5;

4.6.2 The right to amend these Bylaws, and to review and rescind any Board amendment of these Bylaws, in accordance with Section 12;

4.6.3 The right to receive appropriate meeting notices, as well as reports and information produced by WECC;

4.6.4 The right to attend, participate and vote in all WECC Member meetings and the right to attend Board meetings (other than closed sessions) and to comment upon all matters considered in such meetings;

4.6.5 The right to be a voting member of Committees, subject to the charters applicable to those committees, the limitations of these Bylaws and such other reasonable limitations as the Board may adopt;
4.6.6 The right to invoke the dispute resolution provisions of these Bylaws;

4.6.7 The right to petition the Board to take any action consistent with applicable law (including Section 215 of the Federal Power Act and implementing orders and regulations), these Bylaws and the articles of incorporation and to have such petition voted on in a reasonable and timely manner;

4.6.8 The obligation to abide by these Bylaws, and all decisions of WECC, subject to the exceptions set forth in Section 4.7 and the enforcement provisions of Section 4.8.

4.6.9 The obligation to designate a Member Representative and an Alternate Member Representative;

4.6.10 The obligation to pay in a timely manner the membership dues pursuant to Sections 4.1, 11.2, and, where applicable, 11.3;

4.6.11 The obligation to provide system data that the Board has determined is necessary for WECC functions and does not impose an undue burden on the Members; provided, that the Board shall adopt appropriate limitations on this obligation or procedures that protect and avoid unnecessary collection of confidential, privileged, trade secret, cybersecurity or critical energy infrastructure information or other information that the Board determines merits such protection consistent with applicable law; and

4.6.12 The obligation to support surfacing minority and majority opinions or views within their Class, along with supporting rationale to enable the Board of Directors to make decisions based on informed judgment aligned with WECC’s vision and mission, and these Bylaws.

4.7 Limitations on Member Obligations.

4.7.1 The obligation of Members pursuant to Section 4.6.8 will not require any Member to take any action which the Member in good faith determines would:

1) exceed the physical capabilities of the Member’s electric system (or any part of another’s electric system that the Member has the legal right to cause to comply with a WECC action governed by Section 4.6.8);

2) create serious and immediate risks to public health or safety (provided, that the shedding of load shall not in and of itself be deemed a serious and immediate risk to public health and safety for the purpose of this section);
3) create an immediate risk of serious damage to facilities or equipment within its electric system or cause it to operate any of its electric facilities or equipment in an unsafe manner;

4) cause the Member to violate or improperly implement an applicable law, regulation, rule, order, FERC license provision or other legal obligation; or

5) conflict with any non-power requirement applicable to the Member (including without limitation any obligation under environmental laws, regulations, court and administrative decisions or biological opinions).

4.7.2 Each Member shall retain sole control of its facilities and the use thereof, and a Member shall not be required to construct or dedicate facilities for the benefit of any other Member, or be required to take action, or refrain from action, as may be deemed necessary to maintain reliable service to its own customers and/or to fulfill its obligations to third parties; provided, that a Member shall comply with duly-adopted reliability standards applicable to its system and shall comply with any directives under existing security coordination agreements. Nothing in these Bylaws is intended to preclude application of Section 210 or 211 of the Federal Power Act.

4.7.3 The above limitations shall not be construed as altering a Member’s obligation, if any, to comply with applicable Reliability Standards or enforcement orders, or any other obligation arising under 18 C.F.R. Part 39.

4.8 Compliance and Enforcement.

The power of WECC to enforce Member obligations other than compliance with Reliability Standards and other obligations arising under 18 C.F.R. Part 39 and applicable Canadian and Mexican regulatory requirements is limited to suspension or termination of membership as set forth in this Section; provided, that:

a) nothing in this Section will limit the power of Members to agree to additional enforcement provisions in separate contracts; and

b) nothing in this Section will limit WECC’s delegated authority under Section 215 of the Federal Power Act and 18 C.F.R. Part 39 and applicable Canadian and Mexican regulatory requirements to enforce Reliability Standards and perform other delegated or contractual functions within the Western Interconnection.

The Board may suspend or, to the extent consistent with applicable law, terminate the membership of any Member for a material failure to meet any obligation of membership set forth in these Bylaws, including, but not limited to:
a) non-payment of dues sixty (60) days after the dues become delinquent;
b) intentionally or repeatedly violating any WECC Bylaw;
c) materially breaching or intentionally violating any FERC Order or arbitration decision issued pursuant to these Bylaws;
d) willfully obstructing any lawful purpose or activity of WECC; or
e) remaining inactive as described in Section 5.7.

The Board will give the affected Member not less than twenty-one (21) days prior written notice of any proposed suspension or termination, which will include the specific basis for the proposed action and, if applicable, instructions on curing the problem. Prior to terminating a membership, the Board will consider any information provided by the Member in response to the notice described herein.

4.8.1 Suspension. The suspension of a Member will not affect the Member’s rights and obligations other than that the Member will not be entitled to vote at any meeting of the Members, Classes, subclasses, or any committee until the suspension is removed, except that a suspended Member may participate in the WECC Reliability Standards Development Procedure.

4.8.2 Termination. The termination of membership will have the same effect, and be subject to the same continuing obligations, as such Member’s withdrawal pursuant to Section 4.1, except that it will be effective as of the issuance date of the notice provided pursuant to Section 4.8.

4.9 WECC Structure and Governance Review.

At least each five (5) years, the Board of Directors, in collaboration with the Member Advisory Committee and the Western Interconnection Regional Advisory Body, will conduct a thorough assessment of whether WECC fulfill its purposes in a manner that is consistent with its mission and vision, and the provisions of Section 2.2 of these Bylaws. As part of this assessment, the Board will consider whether the standards, obligations, processes and decisions WECC imposes on its Members are timely, fair, effective, and reasonable in view of the commercial, legal, regulatory, and economic needs and objectives of the affected Members. The assessment required by this Section 4.9 will be accompanied by recommendations for any changes the Board determines are warranted by the assessment. If any recommendations require Member approval prior to implementation, the assessment and recommendations prepared by the Board in accordance with this Section 4.9 will be submitted in writing to the Members at the first Annual Meeting held after the review is completed.
5. Procedures for Member Decisions.

5.1 Quorum and Alternative Voting.

With the exception of voting on Regional Reliability Standards and Regional Criteria under the Reliability Standard Development Procedures, Members may conduct business and take votes only at duly noticed Member meetings. Members may not conduct any business of the membership as a whole at any meeting unless a quorum is first established.

5.1.1 Quorum. A majority of all Members, including a majority in at least three (3) Classes, will constitute a quorum for all meetings of the membership as a whole, including for the election of Directors. A majority of the Members of a Class or subclass will constitute a quorum for all Class or subclass meetings. Members participating through a designated Alternate Member Representative or through submission of an absentee ballot will be counted in determination of a quorum. Inactive Members, as defined in Section 5.7 of these Bylaws, will not be counted in determining a quorum at Member, Class or subclass meetings. A quorum, once established, will be deemed to continue for the balance of any Member, Class, or subclass meeting.

5.1.2 Alternate Member Representative or Absentee Voting. If a Member Representative cannot attend a meeting of the Membership or a Class meeting in person where Directors are being elected or amendments to these Bylaws are considered for approval, the Alternate Member Representative may attend and vote in place of the Member Representative. Alternatively, the Member Representative or Alternate Member Representative, may cast an absentee ballot pursuant to procedures established by the Secretary. In the absence of both the Member Representative and the Alternate Member Representative, a Member may designate a Proxy pursuant to the procedures established by the Secretary.

5.2 General Membership Meetings.

All business of the Members acting as a whole will be conducted at meetings called by advance notice to all WECC Members provided in accordance with Section 5.4. Unless stated otherwise in these Bylaws, decisions at all meetings of the Members, Classes, or subclasses will be by simple majority vote of the Members present or otherwise represented in accordance with these Bylaws, with each Member having one vote, unless other Bylaw provisions provide for the allocation of the Member’s vote. The chair of the Board will preside over all general membership meetings.
5.2.1 Annual Member Meetings. WECC will hold an Annual Member Meeting at a time and place determined by the Board. At the Annual Member Meeting, and at other times as provided for in these Bylaws, in addition to such other actions the Members may take, the Members and Classes will elect Directors for vacant Director positions (as provided in Section 6.4.3).

5.2.2 Special Member Meetings. Members may hold special meetings whenever called by the Board. The Board will call special Member meetings whenever a majority of the Members of any Class request a special meeting or at such other times as it deems appropriate. The chair of the Board will preside over all special Member meetings.

5.3 Member Class and Subclass Meetings
An individual Class or subclass may hold a meeting for any purpose relevant to the interests of Class or subclass members. Such meetings will be initiated by request of one or more Class or subclass member(s), and agreement by at least fifty (50) percent of Class or subclass members.

5.4 Notice of Member Meetings.
5.4.1 Annual Member Meeting. The Secretary will provide at least thirty (30) days’ notice to all Members and the Board of the date, place and time of the Annual Member Meeting and an agenda of the business to be conducted at such meeting.

5.4.2 Other Member Meetings. The Secretary will provide notice of regularly scheduled and special meetings to the Members not less than ten (10) days before the meeting.

5.4.3 Public Notice. Public notice of each meeting of the Members will be placed on WECC’s website at least ten (10) days before such meeting.

5.5 Open Meetings.
All Members’ meetings are open to observation by the public.

5.6 Policymaking Authority.
The Board of Directors may adopt policies for the interpretation and implementation of the meeting and voting procedures established in this Section 5.

5.7 Minimum Participation Requirement.
To be counted for quorum purposes at a meeting of the Members as a whole, Class, or subclass, a Member must actively participate at least once each calendar year either by attending a WECC meeting or voting in a WECC election. If the Member does not meet
this minimum participation requirement, the Member will be considered an “inactive” Member until its active status is restored by participation as described above. An inactive Member will not be counted toward the total number of Members when establishing a quorum requirement for the Members as a whole, a Class, or a subclass. A Member may at any time designate itself an inactive Member. Such designation will be effective until the Member is reinstated to “active” status. If a Member does not participate for twenty-four (24) consecutive months, the membership will be terminated. If a membership is so terminated, reapplication for membership may be made at any subsequent time.


6.1 Board of Directors.

Subject to those matters expressly requiring approval by the Membership, a Board of Directors elected by the Members will govern WECC. The Board will elect its own chair and vice chair from those individuals serving as Directors.

6.2 Composition of the Board and Board Member Qualifications.

6.2.1 The Board of Directors shall consist of nine (9) Directors. At all times, subject to temporary vacancies, the Board of Directors shall include at least three Directors who each have at least ten years of experience in the utility industry at the senior management or officer level, preferably in the Western Interconnection, including:

1) at least one Director who has transmission operations experience,
2) at least one Director who has transmission planning experience, and
3) at least one Director who has generation operations experience.

At least one Director shall possess experience in British Columbia, Alberta, or Mexico, and also be a resident of one of these jurisdictions. Notwithstanding the foregoing requirements, or any Director vacancies, the Board of Directors shall at all times retain its authority and ability to govern WECC so long as a properly constituted quorum is established in accordance with section 7.1.

6.2.1.1 Transmission operations experience shall preferably include experience in control center operations.

6.2.1.2 Transmission planning experience shall preferably include experience in modeling and/or planning transmission facilities, including economic and reliability modeling.
6.2.1.3 Generation operations experience shall preferably include experience in development or operation of generation facilities, including economic and reliability modeling.

6.2.1.4 Experience in the Canadian provinces of British Columbia and/or Alberta, and/or Mexico shall preferably include, but not be limited to, those types of experience described in sections 6.2.2.1 through 6.2.2.7 below.

6.2.2 The remaining members of the Board of Directors shall be selected to ensure diversity of background and experience. Desirable categories of experience include: regulatory or legal; accounting, finance or economics; environmental; end-user advocacy; information technology; compliance or standards; and public sector.

6.2.2.1 Regulatory or legal experience shall preferably include at least one of the following types of experience: state, provincial or federal industry regulation; significant litigation experience ideally at the appellate level; evaluation of complex legal arguments; and advising clients with respect to settlements.

6.2.2.2 Accounting, finance or economic experience shall preferably include experience as a chief financial officer, a chief accounting officer, a corporate risk officer, a certified public accountant, or the equivalent thereof.

6.2.2.3 Environmental experience shall preferably include experience advocating environmental interests before local, state or federal agencies or boards, and/or leadership experience in representing environmental interests in relation to energy issues.

6.2.2.4 End-user advocacy experience shall preferably include experience advocating end-user economic interests before local, state or federal ratemaking agencies or boards.

6.2.2.5 Information technology experience shall preferably include experience as a senior level manager responsible for integrating information technology services with organizational needs in areas such as capacity planning, budget and finance, acquisition and deployment, operations, change management, application development, trade ally relationships, user support, data quality, security and similar areas.
6.2.2.6 Compliance or standards experience shall preferably include experience as a senior level officer or manager for corporate compliance with internally and/or externally imposed requirements, rules or standards.

6.2.2.7 Public sector experience shall preferably include experience representing the public interests with respect to energy issues.

6.2.3 Director Affiliation Restrictions. A Director may not be a full-time employee of a Registered Entity. Nor may a Director be affiliated with any Member or Registered Entity operating in the Western Interconnection.

6.2.3.1 For the purposes of this section, “affiliated” shall mean (1) an employee of, (2) a contractor for, (3) an employee of a contractor for, or (4) an equity owner of or a Director for a Registered Entity or Member. For purposes of determining whether a Director is “affiliated” the term “Director” shall include a spouse and/or minor child of the Director.

6.2.3.1.1 A Director with an equity interest in private or publicly traded companies that are end-users of electricity in the Western Interconnection but who is not otherwise “affiliated” pursuant to the restrictions set forth in Section 6.2.3 shall not be considered “affiliated.”

6.2.3.1.2 A Director with an equity ownership in a broadly diversified mutual fund which may include interests in one of the types of organizations described in Section 6.2.3, shall not be considered affiliated provided that such equity interest cannot confer a controlling interest in a Member or Registered Entity within the Western Interconnection.

6.2.3.1.3 A Director receiving post-employment compensation, which compensation is not indexed to the success of the disbursing entity shall not be considered “affiliated.”

6.2.3.1.4 A Director shall not be considered “affiliated” solely by having a contractual relationship with a state government that has one or more agencies that are Members, provided that the Director cannot be affiliated with the Member agency or agencies.

6.2.3.1.5 A Director shall not be considered “affiliated” for being a residential or small business end-user of electricity or for being affiliated with, a member of, or a contributor to an organization that represents a substantial number of end users or a substantial number of persons interested in the impacts of electric systems on the public interests or the environment, but a Director shall be considered “affiliated” if
the Director is an employee of, or serves as a director, trustee, or officer or in any other policy-setting capacity with respect to any such organization.

6.2.3.2 The affiliation restrictions set forth in this Section are not all encompassing. Candidates and Board members are expected to disclose all known potential financial or relationship conflicts, including any known relationships between companies they have affiliation with and/or entities described in Section 6.2.3. Furthermore, the Nominating Committee will be expected to investigate and evaluate all potential conflicts, whether financial or otherwise.

6.2.4 In addition, the Board may, by resolution, appoint the Chief Executive Officer (“CEO”) of WECC to be a voting member of the Board, provided that the CEO may not be a member of a Board committee or cast either a tie-breaking vote or a vote that creates a tie. The CEO may not serve as the chair or vice chair of the Board.

6.3 Term of Office.

Directors will hold office for staggered terms of three (3) years, three Directors’ terms ending each year. Each term shall commence, and subsequently end, on the adjournment of the Annual Member Meeting. This may result in some Director terms that are longer or shorter than exactly three years.

6.4 Nomination, Selection and Compensation of Directors.

6.4.1 Nominating Committee. Candidates for a Director position shall be nominated by a Nominating Committee. The Nominating Committee shall consist of seven members. Three voting members shall be Directors, designated by the Board chair, whose terms are not expiring at the next Annual Member Meeting. The remaining four voting Nominating Committee members shall be Member Advisory Committee members selected by the MAC, with two (2) members being from Classes 1, 2, and/or 3, and two (2) members being from Classes 4 and/or 5. The MAC shall also select, as non-voting members of the Nominating Committee, an international member and one member from each of the Classes that are not voting members of the Nominating Committee. Quorum for the Nominating Committee will be a majority of voting members.

6.4.1.1 If the Member Advisory Committee does not designate MAC members to serve on the Nominating Committee within 30 days of being notified of the Board chair’s designation of the three Directors to serve on the
Nominating Committee, the Board chair may designate MAC members to serve.

6.4.1.2 A Nominating Committee shall be formed each year not less than 180 days prior to the Annual Member Meeting. A Nominating Committee will continue to function until a replacement Nominating Committee is formed, but may not continue for a period longer than twelve (12) months from its creation, unless the Board, by resolution, authorizes a Nominating Committee to function beyond twelve (12) months.

6.4.2 Director Candidate Nominations.

6.4.2.1 The Nominating Committee shall develop candidate pools and make candidate nominations to the Members. The Nominating Committee may consider any qualified applicant in developing the candidate pool, and may identify applicants through the following process:

1) selecting and using an independent search firm to provide the Nominating Committee with a list of qualified applicants for each Director position subject to election;

2) consider an incumbent Director who is willing to stand for reelection, including a review of such Director’s tenure on the Board of Directors; and

3) consider external nominations.

6.4.2.2 Any party may recommend candidates (self-recommendations and third-party recommendations) to the Nominating Committee for consideration, by submitting the following:

• the candidate’s resume,
• a summary of the candidate’s relevant experience,
• a disclosure statement from the candidate, and
• a letter of interest from the candidate.

All candidate recommendations must be submitted to the Nominating Committee no later than the deadline established by the Nominating Committee.

6.4.2.3 The Nominating Committee shall review the qualifications of the potential candidates and put forth one nominee for each Director position up for election.
6.4.2.4 Five (5) affirmative votes of the Nominating Committee shall be necessary to put forth a nominee for election by the Members.

6.4.2.5 At least sixty (60) days in advance of the Annual Member Meeting, the Nominating Committee chair shall forward the list of nominees to the Board chair. The Nominating Committee chair shall advise the Board chair if the Nominating Committee is unable to agree on a complete list of nominees. The Board chair may form a new Nominating Committee with different Board and MAC members who shall be tasked with nominating candidates for the remaining open Director positions.

6.4.3 Director Elections. Members will vote for each nominee separately. A candidate will be elected to the Board on receiving a majority vote of the Members as a whole in addition to a majority of the Classes (three of the five) having a majority vote from the Members of the individual Class.

Should a candidate fail to receive the required vote of the Members or Member Classes, the Board may conduct a new election for an alternate candidate put forward by the Nominating Committee, if any. Alternatively, the Board may ask the Board chair to establish a new Nominating Committee to recommence the nomination and election process. Where a candidate has not received the required vote of the Members and Classes, the Director position shall remain vacant until a candidate is elected, except as provided in Section 6.7.2

6.4.3.1 Election by Members Without a Meeting. Member elections for Directors may occur in conjunction with an Annual or Special Member Meeting as described elsewhere in these Bylaws, or voting may occur in whole or in part through submission of written or electronic ballots in accordance with procedures determined by the Secretary to ensure the integrity of the voting process.

6.4.4 Annual Compensation of Directors. Each year the Nominating Committee will make an Director compensation recommendation for the following calendar year. The Board shall direct WECC staff to initiate a Director compensation study for the Nominating Committee every other year. The latest survey so procured shall be used by the Nominating Committee in formulating its annual compensation recommendation, which shall provide an independent review of Director compensation. Any such recommendation shall require five (5) affirmative votes of Nominating Committee members. This recommendation shall be presented to the MAC no later than one hundred fifty (150) days prior to the Annual Member Meeting. The MAC shall set the compensation for the
Directors at least one hundred and twenty (120) days prior to the Annual Member Meeting. When making this decision, the MAC shall consider the recommendation of the Nominating Committee and any other material relevant to setting Director compensation. If the Nominating Committee is unable to reach the five (5) vote majority necessary to make a compensation recommendation, the MAC shall make no changes to the compensation paid Directors for the following calendar year.

6.5 Removal of Directors.

The Members or the Board may remove a Director before completion of the Director’s term of office pursuant to the following provisions.

6.5.1 Removal by the Members. Directors may be removed only for gross negligence, violation of local, state, provincial, or federal laws, gross misconduct, or failure to meet the fiduciary obligations of Directors.

6.5.1.1 Removal of a Director will be by a vote of a majority of all the Members, not just those Members voting, in addition to a majority vote from at least three of the five Classes. Removal may only take place at a meeting called for that purpose by notice provided in accordance with the notice requirements for Member meetings. A vote to consider removal of a Director will occur based on submission to the Secretary of a petition for such a vote signed by the Member Representatives of at least 20 percent of the Members in three of the five Classes.

6.5.2 Removal by the Board. The Board may remove any Director for gross negligence; violation of local, state, provincial, or federal laws; gross misconduct; or failure to meet the fiduciary obligations of Directors. Such removal will only occur upon the affirmative vote of not less than six (6) Directors.

6.6 Resignation.

Any Director may resign at any time by written notice to the Board delivered to the Board chair. The acceptance of a resignation will not be required to make it effective.

6.7 Procedures for Filling Vacant Director Positions.

6.7.1 Director Vacancies. If the position of any Director becomes vacant prior to its normal term expiration and there is more than one (1) year remaining in said term, the Nominating Committee will—within a reasonable amount of time—begin the process of choosing a successor candidate for nomination and election. The applicable requirements of this Section 6 shall apply to this nominating process, except those regarding the timing of certain actions. The Nominating
Committee chair shall advise the Board chair of the Nominating Committee’s nomination. If, within six (6) months of the occurrence of a vacancy, the Nominating Committee has failed to notify the Board chair of a nominee for that vacancy, the Board chair shall appoint a new Nominating Committee, with different Board and MAC members, which will commence work immediately to select a nominee for said vacancy. Alternatively, if less than one (1) year remains in the term of the vacant Director position, the position will remain vacant, unless a temporary Director is appointed as permitted by section 6.7.3, until filled in conjunction with the typical annual Director nomination and election processes described elsewhere in this Section 6.

6.7.2 Holdover to Cure Procedural Vacancies. Whenever an incumbent Director is a candidate for a Director position and is not re-elected due to a lack of quorum or other procedural deficiency, that Director may continue to serve, for no more than twelve (12) months from the original expiration date of the Director’s term, until a valid election has been conducted.

6.7.3 Should the number of serving Directors fall below seven (7), the Board may appoint one or more individuals to serve as temporary Directors until replacement Directors can be elected by the Members.

6.7.3.1 In appointing temporary Directors, the Board shall select individuals whose experience ensures the Board composition requirements of Section 6.2 are satisfied.

6.8 Duties of Directors.

The Directors will have the following duties:

6.8.1 Fiduciary Obligation to WECC: All Directors, will have a fiduciary obligation to WECC consistent with the requirements for Directors of Utah non-profit corporations. Members of the Board will at all times act in conformance with such requirements, these Bylaws and the Standards of Conduct set forth in Appendix A.

6.8.2 Preserve Non-Affiliated Status: Throughout their terms, Directors will have a duty to avoid any affiliation that is inconsistent with the qualifications for Directors in Section 6.2.2 of these Bylaws. If a Director becomes aware of any intervening disqualification, he/she must either resign or eliminate the disqualification (e.g., dispose of securities) within sixty (60) days.
6.9 Powers of Directors.

The management of all the property and affairs of WECC is vested in the Board of Directors. The Board will hold annual elections to select a Board chair and vice chair and to fill any other Board officer positions that may be created by the Board or required by applicable law. The Board may exercise all the powers of WECC and do all lawful acts and things (including the adoption of such rules and regulations for the conduct of its meetings, the exercise of its powers and the management of WECC) as are consistent with these Bylaws and the Articles of Incorporation. When deliberating policy matters, the Board will give serious consideration to the recommendations of the Member Advisory Committee and the Western Interconnection Regional Advisory Body (or any successor).

6.10 Delegation of Board Authority.

The Board may delegate to any person or any committee any or all of its powers and authority except any power that it may not delegate pursuant to applicable Utah law, and the power to:

1) adopt any Reliability Standard;

2) approve budgets;

3) form committees;

4) amend the Bylaws;

5) elect the Board chair and other officers of the Board; and

7) hire, fire or set the terms of employment of the Chief Executive Officer.

These powers are subject to the right of any Member to appeal any of such decisions to the Board within 30 days of the committee vote on the decision by writing a letter to the Chief Executive Officer that describes in reasonable detail the grounds for appeal, and requests that the appeal be considered by the Board at its next regularly scheduled meeting, subject to applicable notice requirements. Delegation will be by resolution. Any Director may call for a vote to rescind such delegation at any time.

6.10.1 Notice to Members. Within seven (7) days of any decision delegated to a Member committee pursuant to Section 6.10, the subject Member committee must notify all Members of the decision by electronic mail, posting on the WECC website and any other means determined appropriate by the Board.

6.10.2 Board Review of Delegated Decisions. Decisions delegated pursuant to Section 6.10 will be reviewed by the Board at the request of any Director, provided such request is lodged with the Secretary within thirty (30) days of the notice.
Whenever it determines that a matter requires an urgent decision, the Board may shorten the deadline for requests for review, provided that: 1) the notice and opportunity for review will be reasonable under the circumstances; and 2) notices to Members will always contain clear notification of the procedures and deadlines for Board review. A request for review of a decision will stay the effect of the decision pending review unless the Board in making the delegation expressly determines otherwise.


7.1 Quorum.

No business will be conducted by the Board unless at least five (5) Directors are present, or six (6) Directors if the CEO is counted to determine a Board quorum.

7.2 Majority Vote.

A decision of the Board will require an affirmative vote of a majority of Directors present and not abstaining; provided that no decision of the Board shall be made with fewer than three (3) affirmative votes, or four (4) affirmative votes if the CEO is counted to determine a Board quorum. Directors may not vote by proxy or by absentee ballot, but Directors may participate in Board meetings as provided in Section 7.3 of these Bylaws.

7.3 Attendance at Board Meetings by Teleconference.

Any or all of WECC’s Directors may participate in any meeting of the Board by telephone conference or any other means of communication that enable all Directors participating in the meeting to simultaneously hear one another. Every Director participating in a meeting in the manner described in the preceding sentence will be deemed to be present in person at that meeting.

7.4 Board Action by Unanimous Consent.

Unless WECC’s Articles of Incorporation or applicable law provides otherwise, action required or permitted to be taken at a meeting of the Board may be taken without a meeting through one or more written consents describing the action taken. Any Board action taken by written consent must be signed by all Directors in office at the time the action is taken. Such actions require three (3) business days’ prior notice to Members and Members must be given an opportunity to comment through electronic mail, comments on the website or other appropriate means. All Board actions by written consent must be filed with WECC’s Board meeting minutes. Action taken under this Section is effective when the last Director signs the consent, unless the consent specifies an earlier or later effective date. Any action by written consent has the same effect as a meeting vote and may be described as such in any document.
7.5 Notice of Board Meetings.

7.5.1 Regular Meetings. Except as set forth in Section 7.5.2 regarding urgent business, all regular business of the Board will occur at Board meetings, at least twenty-one (21) days’ notice of which has been provided by the Secretary to all Directors and all Members via email and posting to the WECC website. Notice will include an agenda that will identify those matters on which a vote will be taken at the meeting. The foregoing requirement shall not preclude the Board from taking an action that is different from the specific proposed action identified in the agenda, if the relevant subject matter has been reasonably identified in the agenda. The Directors will establish a regular meeting schedule that will be made available to the Members. The schedule will include not less than two meetings of the Board annually.

7.5.2 Special Meetings. Whenever the Board chair or any three (3) Directors find that there is urgent business requiring Board action before the next regular Board meeting, a special meeting of the Board may be called. Such special meetings will be held upon as much written notice to each Director and all Members as is possible under the circumstances, but shall be no less than three (3) days. However, notice of a special meeting may be waived if: 1) the waiver is by a writing signed by a quorum of Directors; and 2) as much notice of the meeting as practicable has been given to Members via electronic mail and posted on the WECC website.

7.6 Open Meetings.

Except as provided in Section 7.6.1, all regular and special meetings of the Board will be open to observation by any Member and any member of the public.

7.6.1 Closed Session. Notwithstanding the provisions of Section 7.6, on an affirmative vote of two-thirds (⅔) of the Directors present, the Board may meet in closed session:

1) to consider the employment, evaluation of performance, or dismissal of an employee of WECC and to deliberate regarding decisions the Board may be called upon to make regarding the nomination, qualification, appointment, or removal of a member of the Board of Directors;

2) to discuss pending or proposed litigation or to receive other confidential attorney-client communications from legal counsel; and

3) to receive and discuss any information that is privileged, trade secret, cybersecurity, critical energy infrastructure information (as defined by
the FERC), protected from public disclosure by law or that the Board determines should be confidential to protect a legitimate public interest.

7.6.1.1 Attendance by an Affected Director. Closed sessions of the Board may not be attended by a Director under the following circumstances:

1) where the qualifications or performance of the Director or the Director’s spouse or children are being discussed;

2) where the Director is employed by an entity that is or is likely to become a party to the litigation being discussed; and

3) where the Director or the Board determines that the Director would have a serious and substantial conflict of interest by becoming privy to confidential attorney-client or trade secret information that is to be presented to the Board in closed session.

7.6.1.2 Announcement of Closed Session. Before adjourning into closed session, the Board chair will announce the purpose of the closed session in a manner that provides the public an understanding of the general subject matter to be discussed but which does not reveal sensitive or personal information. The Board will not discuss additional items outside the scope of this description.

7.6.1.3 Confidentiality of Closed Session. All Directors and others present will maintain the confidentiality of discussions and decisions made in closed session. The Board will appoint a secretary for each closed session to keep minutes, recording the subject matter discussed in closed session and any actions taken in closed session. After a closed session has ended, the Board chair shall provide the public a general description of the business conducted during the closed session, without breaching the confidentiality of the information used in the session.

7.7 Waiver of Procedures.

For any specific action at any noticed meeting of the Board, and under exigent or unusual circumstances, the Board by unanimous vote of those present may waive any procedural requirement applicable to Board decision-making, including any requirement for notice of a specific potential action, except for the following:

1) the requirement for notice of the time and place of the meeting pursuant to Section 7.5;
2) the quorum and voting requirements of Sections 7.1 and 7.2; and

3) any non-procedural limitation on the power of the Board to make a decision, including, but not limited to, those restrictions limiting the power to delegate and limiting the power to amend the Bylaws.

Whenever such action is taken, a statement describing the action, the exigent or unusual circumstances, the specific procedure waived, the basis for the waiver and the votes of all Directors present shall be posted on the website and communicated in writing or by e-mail to all Members within five (5) days.

8. Committees.

WECC will have the following committees:

8.1 Member Advisory Committee.

The Member Advisory Committee (MAC) shall be constituted and operated in accordance with a charter approved by the Board. In accordance with said its charter, the MAC shall advise the Board on any matters the Board requests the committee to evaluate or consider and advise the Board on policy, business planning, and budgetary matters as the committee deems appropriate.

8.1.1 The committee shall be comprised of three representatives from each of the five (5) Member Classes, and one representative each for British Columbia, Alberta, and Mexico.

8.1.2 Reporting to the Board. The MAC Chair, or designee, shall provide a report to the Board at each Board meeting detailing the business carried out by the MAC, and advising the Board of MAC recommendations on matters as set forth in Section 8.1 herein. If there are dissenting MAC member opinions regarding a matter in which the MAC is advising or providing recommendations to the Board, the MAC Chair, or designee, shall present dissenting opinions and rationales in conjunction with the respective MAC advice or recommendations.

8.2 Nominating Committee

The Nominating Committee shall be constituted and operate as described in Section 6.4 of these Bylaws.

8.3 Other Committees.

The Board may establish Committees to advise and make recommendations to the Board related to accomplishing WECC’s mission within the Western Interconnection. The membership, responsibilities, and operation of all Committees shall be described in
a Board-approved charter which may contain such other details pertinent to the
governance and functioning of the committee as the Board deems appropriate.

8.4 Open Meetings.
All committee meetings will be open, except as set forth in these Bylaws or in Board-
approved policies or committee charters describing the criteria for entering into closed
session applicable to the committee in question.

9. The Chief Executive Officer, Officers, and Employees.

9.1 Designation of Officers and Terms of Office.
WECC will have a Chief Executive Officer, a Secretary, and any other officers specified by
the Board. Each officer will be appointed by the Board and will serve for the term of
office specified in the Board action appointing the officer and until a successor is
appointed. If an officer is also an employee of WECC, the officer’s appointment will
automatically end upon termination of such employment. Any two or more offices may
be held by the same person except the offices of Chief Executive Officer and Secretary.

9.2 Standards Applicable to All Employees.
A person may not be an officer or employee of WECC if:

1) the person is also the employee of or has a contractual relationship with any
   Entity, or any Affiliate of any Entity, that is eligible for membership in WECC; or
2) the person has a financial interest that, in the judgment of the Board or the Chief
   Executive Officer, creates the fact or appearance of bias, undue influence or lack
   of objectivity regarding any action or decision of WECC.

The Officers and Employees Standards of Conduct attached hereto as Appendix B set
forth the duty of care, duty of loyalty, duty to avoid conflicts of interest and related
matters intended to promote officer and employee neutrality, objectivity and
professionalism.

9.2.1 Exemptions:

9.2.1.1 Status as a residential electricity customer will not disqualify a person
   from employment with WECC.

9.2.1.2 A candidate for employment will not be disqualified for owning shares in
   a mutual fund that owns an interest in a Member or an Affiliate.

9.2.1.3 A candidate for employment will not be disqualified for receiving
   payments from a pension plan of a Member or an Affiliate in a form
   other than securities of such Member or Affiliate if the pension plan
payments bear no relationship to the economic performance of the Member or Affiliate.

9.2.2 If an officer or employee comes into possession of securities in any Member or Affiliate, the officer or employee must resign or dispose of such securities within six (6) months of the date of receipt. Within six (6) months of the time a new Member is added in which an officer or employee owns securities, the officer or employee will resign or dispose of those securities.

9.3 Employment.

The Chief Executive Officer will be employed by the Board of Directors and will serve at the Board’s pleasure. Any contract of employment with a Chief Executive Officer will permit the Board to dismiss the officer with or without cause.

9.4 Chief Executive Officer’s Duties.

Subject to the Board’s direction and delegation, the Chief Executive Officer shall have the authority necessary to plan, organize, staff, and manage WECC to achieve its mission and to perform the activities specified in Section 2 of these Bylaws. Subject to limitation by the Board, the CEO may delegate these authorities in whole or in part to other WECC employees.

9.5 Secretary’s Duties.

In addition to any delegation from the Board, the Secretary shall have the authority and responsibilities specified in applicable Utah law pertaining to nonprofit corporations.

10. Dispute Resolution.

The Board may adopt reasonable dispute resolution procedures applicable to WECC members and staff.

11. Costs and Finances.

11.1 Funding of Reliability Activities.

11.1.1 U.S. Statutory Funding. WECC shall fund all activities undertaken pursuant to Section 215 of the Federal Power Act in accordance with the funding provisions and procedures of that law and related FERC regulations and orders. The Board shall approve a budget for such activities in time for submission to the ERO and to FERC for approval of such funding in accordance with applicable requirements.

11.1.2 International Funding. WECC shall fund reliability activities undertaken in accordance with any agreements it enters into with Canadian or Mexican Entities. Specifically:
1) Subject to (b), if a Canadian or Mexican Entity seeks membership in WECC, that Entity may elect to negotiate an agreement with WECC that provides the terms upon which that Entity will become a Member and, among other things, participate in and/or fund WECC. In such a case and unless agreed otherwise, the Canadian or Mexican Entity shall not be a Member of WECC and shall not have an obligation to fund activities undertaken by the WECC until the terms of such agreement are executed.

2) Section 11.1.2(a) shall not apply to any Canadian or Mexican Entity that is a Member as of the date of the approval of these WECC Bylaws. Existing Canadian or Mexican Members shall continue as Members in accordance with the terms and conditions of their membership as of the date of the approval of the WECC Bylaws, including the terms and conditions of any agreements in place as of the date of the approval of these WECC Bylaws. Nothing in the Section precludes existing Canadian or Mexican Members from negotiating an agreement with WECC that modifies the terms of their participation in and funding of WECC at any time.

11.1.3 Equitable Allocation of Funding. In adopting budgets for the costs of reliability activities, the Board shall endeavor to achieve an equitable allocation as between funding through Sections 11.1.1 and 11.1.2 based on the net energy to load and other relevant factors consistent with applicable law, the Delegation Agreement and any applicable agreements with Canadian or Mexican authorities.

11.2 Dues.

The Board may require Members to pay nominal annual dues consistent with applicable FERC requirements (or those contained in applicable agreements with Canadian or Mexican authorities) to cover reasonable costs of membership that are not funded through Sections 11.1.1 or 11.1.2. Initial dues of a Member will be submitted with a completed application for membership and will be prorated based on the Member’s actual months of membership in the calendar year. In determining nominal dues, the Board may consider all relevant factors including, but not limited to, the ability of different classes of membership to pay such dues. The Board may also reduce, defer or eliminate the dues obligation of an individual Member for good cause shown.
11.3 Funding of Non-Statutory Activities.

To the extent that WECC elects to fund any activities not eligible for funding pursuant to Sections 11.1.1 and 11.1.2, it shall do so through the use of service fees, charges or dues applicable to the persons or entities that voluntarily participate in such activities. Participation in or funding of such activities shall not be a condition of membership in WECC.

12. Amendments to these Bylaws.

These Bylaws may be amended by either the Board or by the Members in accordance with the following procedures.

12.1 Amendment by the Board.

Except for those provisions described below, the Board may approve an amendment of the Bylaws after providing not less than thirty (30) days’ notice of the proposed amendment to all Members. Approval of such an amendment requires the affirmative votes of not less than two-thirds (⅔) of the Directors in office. Such amendment will become effective sixty (60) days after its approval by the Board unless:

1) the vote is appealed by the Members prior to the sixtieth day, or
2) subsequent regulatory approval is required.

To lodge an appeal, a majority of any Class may file a petition with the Secretary. An appeal will stay implementation of the amendment pending Member vote on the appeal. The membership will vote on whether to rescind the Board approved amendment at the next Annual Member Meeting unless the Board calls an earlier Special Member Meeting. An appeal will only be successful if a majority of all Members and a majority (three of five) of the Classes vote to rescind the amendment. If the appeal vote is not successful, then the amendment will be deemed approved as of the day of the failed Membership vote. If subsequent regulatory approval is required for the amendment, then the amendment shall be effective upon the effective date of such approval.

12.1.1 Notwithstanding the foregoing, both Board and Member approvals are required to amend provisions of these Bylaws concerning Sections 1.1 and 1.2; Section 4.2; Sections 6.2 through 6.8, inclusive; Section 7.2; Section 8; Section 10; Sections 12.1 through 12.4, inclusive; and any other sections as may be required by Utah law. In such case, the Board shall first vote on the proposed amendment. If approved by the Board, the amendment must then be noticed to Members at least sixty (60) days prior to the Annual Member Meeting or Special Member Meeting at which the Member vote will occur. The amendment will
then be approved if it receives the affirmative vote of at least two thirds ($\frac{2}{3}$) of the Members who vote upon such amendment.

12.2 Amendment by the Members.
Upon a petition being filed with the Secretary by any Member or Director, at any Annual Member Meeting or Special Member Meeting the Members may amend any provision of these Bylaws; provided:

1) the proposed amendment has first been presented to the Board and not adopted;
2) Members have received not less than sixty (60) days’ notice of the proposed amendment, the reasons there for and a statement of the Board’s position regarding it; and
3) the amendment receives the affirmative votes of not less than two-thirds ($\frac{2}{3}$) of all Members and a majority of the Classes.

12.3 Amendments proposed by FERC.
FERC, upon its own motion or upon complaint, may propose an amendment to these Bylaws pursuant to 18 C.F.R. § 39.10(b).

12.4 Remote Member Voting on Amendments Permitted.
In all cases where a Member vote is required for approval of a proposed Bylaws amendment pursuant to section 12.1.1, that vote may occur in conjunction with an Annual or Special Member Meeting as described in section 12.1.1, or voting may occur in whole or in part through submission of written or electronic ballots in accordance with procedures determined by the Secretary to ensure the integrity of the voting process, provided that in such cases the proposed amendment has been noticed to Members at least thirty (30) days prior to the beginning of balloting.

WECC may be terminated on a vote of a majority of the Members in accordance with the provisions of Utah law, the Federal Power Act the Delegation Agreement and applicable agreements with Canadian or Mexican authorities. Immediately upon such a vote, the Board will, after paying all debts of WECC, distribute any remaining assets in accordance with the requirements of Utah law, the Internal Revenue Code and these Bylaws.

14.1 Limitation on Liability.
It is the express intent, understanding and agreement of the Members that the remedies for nonperformance expressly included in Section 4.8 hereof shall be the sole and
exclusive remedies available hereunder for any nonperformance of obligations under these Bylaws. Subject to any applicable state or federal law that may specifically limit a Member’s ability to limit its liability, no Member, its directors, members of its governing bodies, officers or employees shall be liable to any other Member or Members or to third parties for any loss or damage to property, loss of earnings or revenues, personal injury, or any other direct, indirect, or consequential damages or injury that may occur or result from the performance or nonperformance of these Bylaws, including any negligence, gross negligence, or willful misconduct arising hereunder. This Section 14.1 of these Bylaws applies to such liability as might arise between Members under these Bylaws. This Section 14.1 does not apply to parties to the Agreement Limiting Liability Among Western Interconnected Systems (“WIS Agreement”) with respect to matters covered by the WIS Agreement and does not apply to any liability provision in any other agreement.

14.2 Indemnification.
WECC shall indemnify and hold harmless its Directors, officers, employees, agents and advisors against any and all damages, losses, fines, costs and expenses (including attorneys’ fees and disbursements), resulting from or relating to, in any way, any claim, action, proceeding or investigation, instituted or threatened, arising out of or in any way relating to any action taken or omitted to have been taken (or alleged to have been taken or omitted to have been taken) by such person in connection with actions on behalf of WECC, and against any and all damages, losses, fines, costs and expenses (including attorneys’ fees and disbursements) incurred in connection with any settlement of any such claim, action, proceeding or investigation unless such action of such person is determined to constitute fraud, gross negligence, bad faith or willful misconduct with respect to the matter or matters as to which indemnity is sought.

14.3 No Third-Party Beneficiaries.
Nothing in these Bylaws shall be construed to create any duty to, any standard of care with reference to or any liability to any third party.

14.4 Informal Inquiries for Information.
Nothing in these Bylaws shall preclude:

1) a Member from making an informal inquiry for information outside of the procedures outlined in Section 4.6.11 hereof to another Member and

2) that other Member from responding voluntarily to that informal inquiry, provided, however, that any such response to an informal inquiry for information shall not be binding upon that other Member and shall be used by the Member making the informal inquiry for informational purposes only.
15. Incorporation.

WECC shall organize itself as a non-profit corporation pursuant to the laws of the state of Utah regarding non-profit corporations under the name “Western Electricity Coordinating Council.” All Members agree to take no actions that would contravene the ability of WECC to maintain its status as a non-profit corporation existing pursuant to the Utah Act. The Board shall adopt these Bylaws as the Bylaws of WECC as a non-profit corporation.

WECC is intended to qualify as an organization described in Section 501(c)(4) of the Internal Revenue Code. No part of any net earnings of WECC shall inure to the benefit of any Member or individual. Upon liquidation, to the extent consistent with the Internal Revenue Code and Utah law, any monies remaining from assessments paid by Members for the costs of WECC shall be rebated to Members in proportion to their payments. Any remaining assets of WECC shall be transferred to another organization exempt from tax under Section 501(a) of the Internal Revenue Code, or government agency, promoting the same purposes as WECC, as designated by the Board.


Unless otherwise agreed, if any conflict of law arises under these Bylaws among the Members, the laws of the United States of America shall govern, as applicable. The venue for any legal action initiated under these Bylaws shall be the city and state (or province) in which the headquarters of WECC is located.
Appendix A:

Standards of Conduct for Members of the WECC Board of Directors

By accepting appointment to the Board of Directors (the “Board”) of the Western Electricity Coordinating Council (“WECC”), a Director agrees to abide by the duties required of corporate Directors and trustees. Utah law (and similar law in other states) imposes quasi-fiduciary duties of care and loyalty on all corporate Directors or trustees, including Directors and trustees of nonprofit corporations. For as long as the Director remains a member of the Board of Directors of WECC, the Director will abide by the following standards of conduct.

I. Duty of care. The Directors of a corporation are bound to use due care and to be diligent in respect to the management and administration of the affairs of the corporation. This duty of care is generally thought to have two components: the time and attention devoted to corporate affairs and the skill and judgment reflected in business decisions.

A. Each Director will regularly attend Board of Directors meetings, digest the materials sent, participate in Board discussions and make independent inquiries as needed.

B. In voting on any matter before the Board or otherwise acting in the capacity as a Director, each Director will:

1) make reasonable inquiry to be informed of the nature and consequences of the matter or action at issue;

2) exercise, at a minimum, the degree of care, skill, and diligence that an ordinarily prudent business person would exercise under similar circumstances; and

3) act in a manner the Director believes to be in the best interests of WECC and the membership of WECC, taken as a whole.

C. In exercising the duty of care described in paragraphs IA and B above, a Director has the right to rely on statements by the persons immediately in charge of business areas of WECC, to rely on professionals and experts (such as engineers, accountants and lawyers) and to rely on committees of WECC, unless facts or circumstances appear that would prompt further concerns of the ordinarily prudent person.

II. Duty of loyalty. The duty of loyalty imposes on a Director the obligation to remain loyal to WECC, acting at all times in the best interests of WECC and its Members as a whole and unhampered by any personal pecuniary gain. This duty does not preclude a Director from being employed in a competing or related business so long as the Director acts in good faith and does not interfere with the business of WECC.

A. Each Director will carry out the duties of a Director in good faith.
B. Each Director will refrain from using any influence, access, or information gained through service as a Director to confer any improper personal benefit (financial or otherwise) upon the Director, any family member, or any person living in the Director’s household.

C. Each Director will refrain from using any influence, access, or information gained through service as a Director to confer an improper benefit (financial or otherwise) on any organization:
   1) for which the Director serves as an officer, director, employee, consultant, or in any other compensated or management position; or
   2) in which the Director or any family member or person living in the Director’s household has a material financial interest (whether as a shareholder, partner, or otherwise).

D. To the extent permitted by law, each Director will maintain the confidentiality of:
   1) any confidential or proprietary information of WECC disclosed or available to the Director;
   2) any confidential or proprietary information of WECC Member(s) to which the Director has access by virtue of the status as Director; and
   3) any confidential or proprietary information of third parties that has been provided to WECC or the Board on condition of confidentiality.

E. Conflicts of Interest. Because conflicts of interest may arise, specific guidelines are provided. In general, conflicts of interest involving a Director are not inherently illegal nor are they to be regarded as a reflection on the integrity of the Board or of the Director. It is the manner in which the Director and the Board deal with a disclosed conflict that determines the propriety of the transaction.

Directors of nonprofit corporations may have interests in conflict with those of the corporation. The duty of loyalty requires that a Director be conscious of the potential for such conflicts and act with candor and care in dealing with these situations.

The following are guidelines for Directors with actual or potential conflicts of interest:

1) Each Director has a responsibility to recognize potential conflicts of interest and to be guided when acting as a Director by his or her independent judgment of what is in the best interests of WECC and the membership of WECC, taken as a whole. If any Director has questions about whether a conflict of interest exists, he or she may make inquiry to the Chief Executive Officer of WECC for advice.

2) Potential conflicts of interest may arise because of a Director’s private, individual interests (personal conflicts of interest) or because of relationships the Director may have with other organizations or interest groups (organizational conflicts of
interest). Current or past employment or other compensation-based relationships with one or more WECC Members are examples of potential organizational conflicts of interest. Whether a potential conflict of interest is personal or organizational, in all cases involving WECC affairs a Director’s conflicting interests are subordinate to those of WECC and the membership of WECC, taken as a whole.

3) Personal conflicts of interest.
   a) Personal conflicts of interest exist if a Director, a member of the Director’s family, or a person sharing the Director’s household:
      1) has a material financial interest in a matter or transaction that comes before the Board for action; or
      2) stands to receive a benefit (in money, property, or services) from a transaction involving WECC to which the person is not legally entitled.
   b) In cases of personal conflicts of interest, the affected Director’s obligations are to:
      1) disclose to the Board, before the Board acts with respect to that matter, the material facts concerning the Director’s personal conflict of interest; and
      2) refrain from voting, and from attempting to influence the vote of any other Director(s), in those matters in which the Director has a personal conflict of interest.

4) Organizational conflicts of interest.
   a) An organization has a “direct” conflict of interest if a decision by the Board would confer material benefits on that organization that other WECC Members would not share, or impose material detriments or costs on that organization that other WECC Members would not share. The fact that many if not all Members are affected to some extent by Board decisions on core issues such as standards, new transmission lines and their ratings, does not create or constitute a “direct” conflict of interest.
   b) It is not a “direct” conflict of interest for a Director to be associated with an organization or an interest group that may stand to benefit from decisions made or actions taken by the Board, so long as the Director does not attempt to use the position of Director to confer special benefits on associated organizations or interest groups when other WECC Members would not share in those benefits.
c) In cases of potential “direct” organizational conflicts of interest, the affected Director’s obligations are to:

1) disclose to the Board, before the Board acts with respect to the matter, the material facts concerning the organizational conflict of interest; and

2) refrain from voting and from attempting to influence the vote of any other Director(s) with respect to the proposed action or decision.
Appendix B:
Officers and Employee Standards of Conduct

By accepting employment with the Western Electricity Coordinating Council (“WECC”), an Employee agrees to abide by these Standards of Conduct. For the purpose of these Standards, an Employee includes each and all officers, employees and substantially full-time consultants and contractors of WECC.

I. Duty of care. The Employees of WECC are bound to use due care and to be diligent in respect to the management and administration of the affairs of the corporation. This duty of care is generally thought to have two components: the time and attention devoted to corporate affairs and the skill and judgment reflected in business decisions.

Employees shall not have any outside employment that limits in any way their ability to fulfill their employment responsibilities to WECC. If an Employee has any question about whether outside employment is consistent with this standard, they should consult with their supervisor.

II. Duty of loyalty. The duty of loyalty imposes on an Employee the obligation to remain loyal to the WECC, acting at all times in the best interests of WECC and its Members as a whole and unhampered by any personal pecuniary gain. WECC expects all Employees to avoid adversely affecting the public’s confidence in the integrity and reputation of WECC. Any conduct or activities of any Employee should be capable of being justified and withstanding public scrutiny.

A. Each Employee will carry out his or her duties as an Employee in good faith, with integrity and in a manner consistent with these Standards and all applicable laws governing WECC.

B. Each Employee will refrain from using, or creating the appearance of using, any influence, access, or information gained through his or her service as an Employee to confer any improper personal benefit (financial or otherwise) upon himself or herself, or Family Member.¹ Employees shall not accept gifts or entertainment that would tend to affect, or give the appearance of affecting, the performance of their duties; provided, however, that Employees may accept de minimus food or entertainment or non-cash gifts received as part of a social or special occasion in amounts not to exceed $25 per source per event.

C. Each Employee will refrain from using, or creating the appearance of using, any influence, access, funds or information gained through his or her service as an Employee to confer an

¹ For purposes of these Standards, a Family Member includes a spouse, domestic partner, child of the Employee, or a relative living in the same home as the Employee.
improper benefit (financial or otherwise) on any organization. The obligation to avoid the appearance of impropriety shall apply in particular to any organization:

1. for which the Employee is serving or has in the past served as an officer, director, employee, consultant, or in any other compensated or management position; or
2. in which the Employee, or Family Member has a material financial interest known to the Employee (whether as a shareholder, partner, or otherwise).

D. Employees shall not use their WECC position, WECC funds or WECC resources to support any political party, candidate or proposition except as expressly authorized by the Board.

E. To the extent permitted by law, each Employee shall maintain the confidentiality of:

1. any confidential or proprietary information of WECC disclosed or available to the Employee;
2. any confidential or proprietary information of WECC Member(s) to which the Employee has access by virtue of his or her status as Employee; and
3. any confidential or proprietary information of third parties that has been provided to WECC or the Board on condition of confidentiality.

F. Conflicts of Interest. The following conflicts of interest policy shall apply to all WECC Employees. Conflicts of interest may arise from time to time. In general, conflicts of interest involving an Employee are not inherently illegal, nor are they to be regarded as a reflection on the integrity of WECC or of the Employee. It is the manner in which the Employee and WECC deal with a disclosed conflict that determines the propriety of the transaction. The following are guidelines for Employees with actual or potential conflicts of interest:

1. In general, personal conflicts of interest exist if an Employee, or a Family Member, has a material financial interest in a matter or transaction that comes before WECC for action, or stands to receive a benefit (in money, property, or services) from a transaction involving WECC to which the person is not legally entitled. For purposes of determining whether stock constitutes a material financial interest, see Paragraph F(6) below.

2. Organizational conflicts of interest exist if an Employee, or a Family Member, has a relationship with an organization or interest group that would cause a reasonable person to believe such Employee’s judgment, loyalty, or objectivity might be influenced in a way that is adverse to the interests of WECC.

3. Where there is any question about potential conflicts of interest, the Employee shall disclose to the Chief Executive Officer as soon as possible and prior to when WECC takes action with respect to that matter, the material facts concerning the
Employee’s personal conflict of interest, and refrain from participating in, or from attempting to influence the action of any Directors or Employee(s) of WECC regarding those matters in which the Employee has a conflict of interest.

4. No Employee may be an employee, director of, or consultant to or provide services to or be associated in any way with any WECC Member without full disclosure to, and written consent of, the Chief Executive Officer. To the extent that an Employee becomes aware that a Family Member is or will in the future be engaged in activity described in this Paragraph F(4), the Employee shall promptly notify the Chief Executive Officer, who shall review all the material facts and determine whether they constitute a conflict of interest pursuant to Paragraphs F(1) and F(2), above.

5. No Employee shall participate in any electric energy transaction other than for ordinary personal use except to the extent necessary to, and consistent with, the functions of WECC. Participation in an energy transaction includes, but is not limited to, purchasing, selling, marketing, or brokering of electricity, ancillary services, electricity transmission or electricity distribution. To the extent that an Employee becomes aware that a Family Member is or will in the future be engaged in activity described in this Paragraph F(5), the Employee shall promptly notify the Chief Executive Officer who shall review all the material facts and determine whether they constitute a conflict of interest pursuant to Paragraphs F(1) and F(2), above.

6. All Employees shall promptly disclose to the CEO and the Chair of the Board any direct or indirect financial interest in excess of $5,000 (including the direct or indirect ownership of securities) held by the Employee or a Family Member living with the Employee\(^2\) in any Electric Line of Business entity as defined in Section 3.15 of the Bylaws doing business in the Western Interconnection. Upon such disclosure, the CEO and the Chair of the Board shall determine whether such financial interest constitutes a conflict of interest, or the appearance thereof, in light of the duties of the Employee, the ability to divest such financial interest without undue hardship and the totality of the circumstances. In response to such disclosure, the CEO and the Board chair may impose such remedies as are reasonable under the circumstances and consistent with section 9.3 of the Bylaws. Such remedies may include, but are not limited to, restrictions on the Employee’s duties or involvement in certain matters, transfer of the Employee to another position, broader disclosure

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\(^2\) Nothing in this section shall require an Employee to investigate the financial interests of Family Members not living with the Employee. However, to the extent known to the Employee, the financial interests of a Family Member not living with the Employee may create a potential conflict of interest (or appearance thereof) subject to Sections II(B) and/or II(F)(1) of these standards, in which case disclosure pursuant to Section II(F)(3) is appropriate.
of the financial interest, voluntary or mandatory divestiture of the interest (in whole or in part) or other remedies. Pursuant to section 9.3.2 of the Bylaws, if an Employee (not a Family Member) receives a gift or inheritance of securities of a Member of WECC, or if a new Member joins WECC in which the Employee (not a Family Member) holds securities, the Employee must resign or divest such securities within six months thereafter.

For the purposes of this section, none of the following shall constitute a direct or indirect financial interest:

a. An interest that exists through diversified mutual funds;

b. An interest that exists for six months following receipt of a gift or inheritance of securities of a Market Participant or acceptance of employment with WECC, whichever is later;

c. An interest that exists through a pre-existing participation in a qualified defined benefits pension plan or health benefits plan of a Market Participant so long as the benefits under such plan do not vary with the economic performance or value of the securities of such Market Participant.
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.

3. **OC Strategic Plan** - At its March 2018 meeting, the OC formed a task team to review and revise, if appropriate, its Strategic Plan to ensure alignment with the updated NERC Strategic Plan. After a thorough review, the team believes the OC and ERO plans are fully aligned. In the process of conducting the review, the team noted a few observations on the OC Strategic Plan:
   a. There is an opportunity to make clarifying changes to improve the plan without making substantive changes.
   b. There is an opportunity to enhance the plan by adding metrics.
   c. With the rapidly changing resource portfolio, including increasing Distributed Energy Resources (DERs), the team recommends the OC reviews progress on and consider being more proactive in achieving Goal - OC 1.

   The OC will consider these observations during the next OC Strategic Plan revision.

4. **Reliability Guidelines and Reference Documents** – The OC has developed and approved, Reliability Guidelines and Reference Documents addressing:
   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

OC’s Major Initiatives for 2018

1. **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. 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.

d. 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.

e. 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.

2. 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.

3. 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.


6. 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).

**June 2018 Meeting Summary:**
The following is a summary of the OC’s June 2018 meeting, which highlights the latest activities of the CO and its associated subcommittees in support of the NERC or OC mission and corporate goals. The June 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 June 5, 2018. The agenda for the joint session allowed the committees to discuss agenda items of mutual interest to both committees which included:
   a. Standards Efficiency Review and Standards Grading Project
   b. Level 2 NERC Alert: Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II
c. 2018 State of Reliability Report

d. NERC Rules of Procedure Section 1600 Data Request for Geomagnetic Disturbance (GMD)

2. OC Nominating Committee - Doug Peterchuck was appointed as the vice 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 guideline: Reliability Guideline for Operator Recognition Cyber Intrusion into Operating System. The guideline was posted for comment and was subsequently revised based on comments. The OC approved the final version.

   b. Reliability Coordinator Reliability Plan Reference Document - ORS Chair David Devereaux led a discussion of the reference document. RC Reliability Plans are no longer required by a standard. OC members discussed the contents of the Reference Document and had concerns about actions for Reliability Plans that were deemed inadequate or lacking. The OC assigned the ORS to revise the Reference Document to include a process for OC communication to NERC/Regions and Certification Teams, where applicable, in cases where ORS members raised concerns with RC Reliability Plans that remained unresolved. Include language regarding cases where the RC plan was not brought to the ORS for endorsement for either a new RC or an RC went beyond the three year review of the plan per the Reference Document.

   c. The ORS approved minor changes to the TVA and MISO Reliability Plans. The MISO change was due to a new 765 kV line built in Indiana. The TVA change reflects 24/7 RC staffing at their former backup control center. The ORS continues to monitor 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. RS Chair Tom Pruitt and ORS Chair Devereaux noted coordination between the subcommittees regarding Time Error Correction (TEC) and BAL-004/NAESB business practices. BAL-004 and NAESB WEQ Standard are both retired and the RS recommends no further action by the OC at this time. It was noted that entities receiving a TEC from a Reliability Coordinator are considered to have received an Operating Instruction which requires action under NERC standards. This will ensure that all BAs participate in TEC.

   b. 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. The initial BAL-003 Standard Drafting Team meeting was held on April 23-24 immediately prior to and at the same location as the RS meetings on April 25-26 in St Paul, MN. The Lawrence Berkeley National Laboratory (LBNL) presented jointly to the BAL-003 SDT and RS on the FERC commissioned Report on Frequency Control Requirements for Reliable
Interconnection Frequency Response that was released on 2/14/18. In addition to the formal presentations, discussions with members of both groups provided additional insight and support for trends noted by the RS.

c. 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. (https://www.ferc.gov/whats-new/comm-meet/2018/021518/E-2.pdf)

d. NERC Balancing and Frequency Control Reference Document – A subteam was formed to update this document. Based on the additional information provided by the LBNL report and in discussions with team members, additional guidance on sustained performance and response from non-synchronous resources is being expanded. Roughly bi-weekly calls of the subteam have been scheduled to address the increased effort. Target completion date remains 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. The EAS is reviewing its Scope document. Changes relating to SPP Regional Entity will be made as well as a general update to the Scope.

   b. The EAS is reviewing the Event Analysis Process. Issues being considered include the potential inclusion of a new category for inverter-based resource disturbance and DC Asynchronous events as well as potential revisions to Category 1.h (EMS) events.

   c. Sixth Annual Monitoring and Situational Awareness Technical Conference is planned for October 2-3, 2018 at MISO Energy located in Carmel, IN. An announcement with conference details, registration, and travel information was sent out in July.

   EAS Chair Rich Hydzik presented an update on three Lessons Learned that have been published since the March OC meeting. Lessons Learned may be accessed from the NERC website here.

6. **Personnel Subcommittee (PS)** – 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).

   c. Audits of Continuing Education courses and providers. There were 34 providers being audited in 2018Q2. The audits are complete and all providers and courses successfully completed the audits.

7. **Essential Reliability Services Working Group (ERSWG)** – ERSWG Co-chair Todd Lucas reported that, with the documents that were approved in March by the OC and PC, the ERSWG has completed its charge and is recommending the disbandment of the ERSWG. A motion was passed to disband the ERSWG. OC members discussed the committee having an interest in DER and that the OC had considered forming a subcommittee or working group on this topic a few years ago. Chair Linke asked each OC subcommittee to look at ERSWG report recommendations and see if there are any recommendations that
the subcommittees needs to follow. If so, the Chairs should come back to the OC with appropriate revisions to their scope/charter for approval.

8. Reliability Guideline Outreach Effort - Task team chair, Sidney Jackson, reviewed the team activities. The team developed a framework for communications which was sent to OC members on June 1, 2018 for review. The team reviewed the OC Strategic Plan and other documents to develop the proposed communication framework. The result of this effort leverages existing avenues for communications and roll out of Reliability Guidelines and Technical Reference Documents. The team developed a Communication Form for use in disseminating the appropriate information through the appropriate communications channels. The team suggests including the procedure as Appendix 4 of the OC Charter. The OC had no questions and consensus was to include this in the OC Charter.

9. Standards Efficiency Review – The OC was requested to provide requirement grades to NERC for the standards efficiency review. The Executive Committee and subcommittee leadership worked with Chair Linke to develop the grading for this review. Chair Linke submitted the grades generated by the OC on April 12, 2018.

10. Resiliency Framework – Vice Chair David Zwergel reviewed the input from the OC to the RISC regarding the Resiliency Framework (see June 2018 OC Meeting Minutes for details).

11. 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 June, 2018 meeting. Ken Keels provided an overview of the NATF activities in an effort to better coordinate activities with the NERC OC.

12. Lessons Learned – Glenn Dooley, Duke Energy Florida, reviewed the impacts of and Lessons Learned from Hurricane Irma which struck the state of Florida September 10 - 11, 2017. The highlights include:
   a. Pre-staging of equipment streamlined restoration
   b. Preemptively removing generation protected equipment from damage which shortened restoration
   c. Continuous communications between the RC, TOPs and BAs in the FRCC Region
   d. Advanced meters and intelligent grid devices were effective to pinpoint outages and operate equipment remotely
   e. Flood monitors in substations located within the 100 year flood plain allowed utilities to de-energize substations at notification of rising water
   f. Leveraging social media provided customers with the most current outage and restoration information
   g. Aerial drones helped assess damage, evaluate work conditions, and enable real-time situational awareness
      i. Infrared capabilities helped identify equipment that needed further inspection

13. WECC Reliability Coordinator Update – The OC was provided updates on activities in the WECC regarding Reliability Coordinators.
   a. Mountain West – CJ Brown, SPP
i. SPP is still working with 28 entities for RC services. Coordination meetings with Peak and CAISO for data exchange and operations coordination are on-going. SPP now have the west wide model in their EMS. The next meeting is June 25-26 in Denver. They are ramping up for decisions by prospective entities in September for membership.


i. CAISO formed a steering committee consisting of all entities that signed an NDA and letter of intent. This group provides oversight of the various working groups that are in process of establishing the RC capabilities. They are working on a tariff for filing. CAISO is looking for commitments in November. They will provide more clarity on oversight, etc. as the process unfolds. They are expecting RC Certification in Q1, 2019 and will perform shadow operations with Peak in 2019. They expect to go live for all services in September, 2019. Cooperation and coordination has been very good among entities.

c. Peak RC – Terry Baker, Peak RC

i. RC-RC coordination – there is an executive committee providing oversight of the transition period including Operations planning, operations coordination, wide-area view, and data sharing. Looking for commitments by end of July for budgeting purposes. Only “known” at this point is CAISO will become RC for its footprint and Alberta will provide their own RC services.
Planning Committee Report

Action
Information

The Planning Committee (PC) is pleased to provide this update to the NERC Board of Trustees (Board) for review. The PC Leadership appreciates the Board’s action to approve this year’s PC candidates.

Forward perspectives

- PC Activities Addressing Reliability Assessments Recommendations
  No Board Approval Required
  A technical workshop on natural gas supply disruption impacts was held on July 10, 2018 (update was provided during the Member Representatives Committee (MRC) meeting). A strategic group of electric and gas industry experts engaged participants in discussions to develop prospective planning solutions for NERC’s consideration on risk mitigation. PC leadership and the PC Advisory Group are developing key findings and actionable recommendations. Findings and recommendations are expected to be available to the Board, MRC, and industry in December 2018.

- PC Activities Addressing System Reliability with Increasing Distributed Energy Resources (DER)
  No Board Approval Required
  Starting in March 2018, the PC has been moving forward with addressing system planning, modeling, and reliability impacts to the bulk power system (BPS) associated with increasing penetration of DER. As a result, the Planning Committee Executive Committee (PCEC) has advanced a new PC oversight group to be known System Planning Impacts from Distributed Energy Resources Subcommittee (SPIDERS). Leadership has been identified and solicitation of members for the group has begun. The PC and group leadership will begin development of a work plan in the coming weeks.

- PC Activities Addressing Misoperations Data Collection
  No Board Approval Required
  The PC approved formation of the Misoperations Information Data Analysis System (MIDAS) Working Group to promote consistency in MIDAS data collection. The MIDAS WG will support collection of data under the approved Section 1600 Data Request by developing a Data Reporting Instruction (DRI) and other activities.

- RISC Report Updates to PC Work Plan
  No Board Approval Required
  The PC completed a review of the 2018 ERO Reliability Risk Priorities Report (RISC Report) and updated the PC Work Plan with activities that are within the PC’s scope.
PCEC receives monthly progress updates from PC subcommittee and task force leaders on work plan progress.

- **Inverter-Based Resource Performance Task Force (IRPTF) Activities**
  
  *No Board Approval Required*

  The joint Operating Committee (OC)-PC task force supported development of the Level 2 NERC Alert *Industry Recommendation: Loss of Solar Resources during Transmission Disturbances due to Inverter Settings – II* released on May 1, 2018. The alert is an outcome of the Canyon 2 Fire disturbance report. It addresses identified issues with voltage-related tripping, continued use of inverter momentary cessation, and the need for accurate dynamic models for stability simulations. The IRPTF is currently developing a Reliability Guideline on Inverter-Based Resource Performance to further address ERO Risk Priorities associated with the changing resource mix. The Reliability Guideline is expected to be completed before the end of 2018.

**Recently Completed Committee Activities and Initiatives**

- **Endorsed Assessments and Reports**
  
  *Board Action Completed*


- **Approved Reliability Guidelines**
  
  *No Board Approval Required*

  **Modeling Accuracy:** The PC approved the reliability guideline for *Power Plant Model Verification and Testing for Synchronous Machines*. The guideline covers an array of testing considerations and testing procedures and describes how those tests help derive or verify the model parameters as related to MOD-025-2, MOD-026-1, and MOD-027-1 Reliability Standards. A related guideline for inverter-based resources is also in development. At the June PC meeting, the PC authorized posting the inverter-based resources modeling verification guideline for 45-day comment period.

- **Technical Guidance for Probabilistic Assessments**
  
  *No Board Approval Required*

  The PC approved the *Probabilistic Adequacy and Measures Technical Reference Report* developed by the NERC Probabilistic Assessment Working Group (PAWG) and Reliability Assessments Subcommittee (RAS). The report provides an overview of probabilistic studies used for resource adequacy in NERC regions and recommendations for application in assessing emerging reliability risks.

- **Geomagnetic Disturbance Section 1600 Data (GMD) Request**
  
  *Requesting Board Approval*

  The PC endorsed the *NERC Rules of Procedure Section 1600 Data Request for Geomagnetic Disturbance Data*. The data request was developed by NERC staff and the
GMD Task Force (GMDTF) for the collection of geomagnetically-induced current (GIC) monitor and magnetometer data as required by Order No. 830.

- **NERC Essential Reliability Services Working Group (ERSWG) and Distributed Energy Resources Task Force (DERTF)**
  
  *No Board Approval Required*

  The Essential Reliability Services Working Group (ERSWG) and Distributed Energy Resources Task Force (DERTF) completed all activities outlined in their respective work plans. The PC approved disbanding the ERSWG and DERTF.

**Future Meetings**

- September 11-12, 2018 – Minneapolis, MN
- December 11-12, 2018 – Atlanta, GA
- March 5-6, 2019 – Location TBD
- June 4-5, 2019 – Location TBD
Critical Infrastructure Protection Committee (CIPC) Accomplishments for 2018 (year to date)

1. **Charter Revisions** – The dissolution of SPP-RE has made it necessary to modify the CIPC charter to reflect that members represent seven regions rather than eight. Those who formerly represented SPP-RE have been actively engaged in CIPC activities and have been encouraged to remain active within the new organizational structure.

2. **Supply Chain Risk Management** – While CIP-013-1 awaits action by FERC, CIPC has undertaken and supported initiatives to assist industry’s preparation for the standard:
   a. Supply Chain Working Group (SCWG) has been formed to address supply chain risks by pursuing efforts to share relevant information with industry.
   b. Training in conjunction with CIPC meetings to provide attendees with possible approaches and pitfalls to supply chain security.
   c. Small Group Advisory Sessions (SGAS) provided feedback to entities with questions about implementing controls that protect against supply chain risks.

### 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>Implementation guidance:</td>
</tr>
<tr>
<td></td>
<td>• Voice communications in environments that are subject to compliance with the CIP Reliability Standards</td>
</tr>
<tr>
<td></td>
<td>• Using cloud computing in a secure and compliant manner</td>
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<tr>
<td></td>
<td>Reliability guidelines:</td>
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<tr>
<td></td>
<td>• Physical security considerations for high-impact control centers</td>
</tr>
<tr>
<td></td>
<td>• Security considerations during extreme events</td>
</tr>
<tr>
<td>FERC-Led Audits Compliance Report</td>
<td>Assess the cyber security risk of Fuel Handling SCADA systems for Generation:</td>
</tr>
<tr>
<td></td>
<td>• Reliability Guidelines to address risks associated with control system security for natural gas distribution systems</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>
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<tr>
<td>-----------------------------</td>
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</tr>
<tr>
<td>Supply Chain Risk Management</td>
<td>Vendor Essential Security Practices Model</td>
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<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 May 2018 meeting minutes are under review and pending approval. Draft minutes were posted to the NERC website.

Exam Development Activities Scheduled for 2018

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items Review/Analyze Statistical Performance</td>
<td>Jan-Dec 2018</td>
</tr>
<tr>
<td>Write New Items</td>
<td>Mar-Dec 2018</td>
</tr>
<tr>
<td>Job Task Analysis (JTA)</td>
<td>Mar-Oct 2018</td>
</tr>
</tbody>
</table>

Strategic Planning
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. The survey period ended 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.

SOCCED Update
It has been seven months since launching a new platform for the System Operator Certification Continuing Education Database (SOCCED). SOCCED users are becoming more familiar with the new tool. Based on prioritization and within budget, the PCGC will continue to work with the Personnel Subcommittee (PS) to create a list of future enhancements.

Certification Program Fees Adjustment
During the annual preparation for the 2019 budget, the PCGC voted to increase the examination fee and the credential renewal fee. Effective January 1, 2019, the examination fee for all System Operator Certification exams will increase from $600 to $650. The fee to renew any System Operator Certification credential will increase from $350 to $400.

2018 Tasks
- Develop Detailed Strategic Plan
- Enhancements to new SOCCED platform
- Analyze JTA results and recommendations
- Analyze System Operator Certification Program survey results and recommendations
• Begin white paper on future System Operator Certification Program and Credential Maintenance
Standards Committee Report

Action
Information

Summary
At its April 18 meeting, the Standards Committee (SC) authorized initial posting by the CIP drafting team of the proposed revised definition of Control Center for the NERC Glossary and associated Implementation Plan. They also approved a drafting team nominee selection criteria and requested NERC staff to update the Standards Development Process – Participant Conduct Policy. Additionally, they authorized posting a Standard Authorization Request (SAR) developing a Canadian variance to TPL-007-2 – Transmission System Planned Performance for Geomagnetic Disturbance Events for a 30-day formal comment period and approved soliciting members for a SAR drafting team. Finally, they discussed input on the Resilience Framework requested by the Reliability Issues Steering Committee (RISC) and approved an approach to respond to the RISC’s request.

The SC did not have a May 16 meeting, but took an Action Without a Meeting to appoint members, chair and vice chair to the SAR drafting team for Project 2018-01 (Canadian-specific Revisions to TPL-007-2 SAR) as recommended by NERC staff.

At the June 13 meeting, the SC accepted the Project 2018-01 (Canadian-specific Revisions to TPL-007-2) SAR for final posting and appointed the SAR Drafting Team as the standard drafting team (SDT). They also appointed additional SDT members and a new co-chair for Project 2016-02 (Modifications to CIP Standards). They also accepted a SAR to address the directive from FERC Order No. 843 regarding third-party transient electronic devices and authorized posting the SAR for a 30-day informal comment period. They assigned this SAR to the Project 2016-02 (Modifications to CIP Standards) SDT. They appointed the Project 2017-07 (Standards Alignment with Registration) SDT. They also authorized posting a third draft of proposed revisions to the NERC Standard Processes Manual for a 45-day formal comment period with additional ballot during the last 10 days of the comment period.
Reliability Issues Steering Committee Report

Action
Information

Summary
The Reliability Issues Steering Committee (RISC) met via conference call on June 10 and July 17, 2018, to continue discussing the resilience framework and the proposed outline of the RISC Resilience Report that will be presented to the NERC Board of Trustees (Board) at its November 2018 meeting. In addition, the RISC members reviewed the proposed draft agenda for the 2019 Reliability Leadership Summit, commencing recommendations for topics and panelists. The Summit will be held on March 14, 2019 in Washington, DC.

Mr. Peter Brandien, RISC chair, will provide an update on the current status of the resilience framework and next steps at the August 15, 2018, MRC meeting and an update on additional committee activities at the August 16 Board meeting.
Compliance and Certification Committee Report

Action
Information

Highlights

• The Organization Registration and Certification Subcommittee (ORCS) continues working with the ERO Organization Registration Certification Group (ORCG) to develop NERC Rules of Procedure (ROP) changes, specifically Section 500 and Appendices 5A and 5B, due to Risk Based Registration and procedural updates. Suggested changes include modifications to improve the Jointly Registered Organization and Coordinated Functional Registration process, and Certification Reviews. NERC has since taken the ORCS input and the ORCG prioritization and consolidated the information to prioritize the needed modifications.

• The ERO Monitoring Subcommittee (EROMS) developed the 2017 Self-Certification Forms for the Compliance Monitoring and Enforcement Program (CMEP) the Organization Registration and Certification Program (ORCP) and the Standards Processes Manual (SPM). These self-certiﬁcations incorporate a subset of performance items related to these program areas. The NERC Internal Audit and Corporate Risk Management team will coordinate the completion of self-certiﬁcations by NERC with the results being shared with the CCC at the fourth quarter 2018 meeting. In addition, EROMS continues the work on the upcoming 2018 ERO Stakeholder survey in collaboration with NERC staff.

• The Compliance Processes and Procedures Subcommittee (CPPS), as speciﬁed in the Rules of Procedure, is in process of working with NERC to update the criteria NERC uses to evaluate effectiveness of Regional Entity CMEP programs. In addition, the CPPS continues to support NERC efforts to improve the Reliability Standards Audit Worksheets (RSAWs). The compliance experts on this subcommittee have completed reviews most recently of the following RSAWs: BAL-005-1, FAC-001-3, and CIP-012-1.

• The CCC Alignment Working Group (AWG) continues to provide feedback and input to improvements to the ERO Consistency Tool. The AWG reviewed a few of the submitted items providing input and support for resolution of the reported items. AWG members were able to gather additional information on recent submissions to add clarity for successful options of resolution. The AWG has stepped in as a representation of the CCC to collaborate with NERC staff on the CMEP Technology project as a resource for information gathering and support. In support of the business transformation phase of the project, the CCC conducted a focused discussion session on CMEP Technology opportunities for ERO consideration.

• As described in the annual work plan, the CCC strongly supports and is committed to working with NERC to enhance the outreach on CMEP programs. Members of the CCC have been collaborating with NERC staff in presentations at the Regional Entity workshops as well as the NERC Standards & Compliance workshop. In addition, the members provided input to the revised Self-report and Mitigation Plan User Guide.
The CCC and its associated subcommittees held meetings at the CAISO offices in Sacramento on June 12-13, 2018. The next CCC meeting will be September 18-19, 2018 at the MRO offices in Saint Paul, MN.
To: NERC Board of Trustees (BOT)
From: Thomas J. Galloway, NATF President and CEO
Date: July 25, 2018
Subject: NATF Periodic Report to the NERC BOT (August 2018)
Attachments: NATF External Newsletter (July 2018)

The attached July NATF external newsletter highlights NATF efforts to help industry address emerging issues. A notable example of this work is reflected in our policy input for this NERC BOT meeting, which is the submittal of the “Cyber Security Supply Chain Risk Management Guidance” and “NATF CIP-013-1 Implementation Guidance” in response to the BOT’s August 2017 Resolution regarding supply chain cyber security.
Emerging Issues and NATF Actions

NATF staff and members strategically engage on relevant emerging risks and issues where we can have a positive impact for our membership, the electric industry, and the general public. Our efforts and solutions can be internal, through our various programs (e.g., misoperations analysis), or external, through the select posting of documents to our public site (e.g., operations absent EMS and SCADA) or specific coordination with industry and regulatory organizations (e.g., alignment on supply chain cyber security). The goal is to drive towards outcomes that increase reliability and resiliency and reduce duplication of effort.

The table below provides a high-level overview of some key industry issues and how the NATF is engaged.

<table>
<thead>
<tr>
<th>Item</th>
<th>Issue/Risk</th>
<th>NATF Work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMP/GMD</strong></td>
<td>Threat of attack and damage to system; questions on how extensive damage would be</td>
<td>Part of resiliency efforts; internal information sharing; public reference papers to clarify issue and member actions; coordination with EPRI (summits, etc.)</td>
</tr>
<tr>
<td><strong>Supplemental Operating Strategies (SOS), formerly “Spare Tire”</strong></td>
<td>How grid would be operated absent all EMS and SCADA (due to event, sabotage)</td>
<td>Project team identifying capabilities and actions/preparations to implement; coordinating with EPRI; posting select documents to public site</td>
</tr>
<tr>
<td><strong>Cyber Security Supply Chain</strong></td>
<td>Supply chain risk management; NERC standard pending FERC approval with associated NERC BOT request for industry assistance (white papers)</td>
<td>Team created white paper and implementation guidance (posted to public site)</td>
</tr>
<tr>
<td><strong>FAST Act (Grid Security Emergency)</strong></td>
<td>Provision of act where DOE secretary can issue orders after president declares grid emergency</td>
<td>Coordination related to potential types of orders that may be issued</td>
</tr>
<tr>
<td><strong>Distributed Energy Resources (DER)</strong></td>
<td>Grid considerations due to increase of DER</td>
<td>Reference guide developed and posted to public site</td>
</tr>
<tr>
<td><strong>Inverter-Based Resources</strong></td>
<td>Increasing penetration creating modeling, planning, and operations challenges</td>
<td>Joint webinars with EPRI, NERC, and UVIG; discussion in practices groups</td>
</tr>
<tr>
<td><strong>Misoperations</strong></td>
<td>Improving system protection performance</td>
<td>Data collection and analysis to uncover extent of issue and identify potential improvements</td>
</tr>
<tr>
<td>Item</td>
<td>Issue/Risk</td>
<td>NATF Work</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CIP-014</td>
<td>Assessments and identification of critical transmission stations and substations in response to requirements</td>
<td>Confidential surveys of members and internal sharing of summary results</td>
</tr>
<tr>
<td>NERC RISC Priorities</td>
<td><strong>Report</strong> that defines/prioritizes BPS risks and associated recommendations and approach to manage risks</td>
<td>Will lead or coordinate, as appropriate, on select items applicable to NATF</td>
</tr>
</tbody>
</table>

Please see the “Distributed Energy Resources Document Posted for Industry,” “Cybersecurity Supply Chain Risk Management White Paper and Guidance,” and “Inverter-Based Resources Webinars” articles in this issue for more details on those particular topics.

**Distributed Energy Resources Document Posted for Industry**

The NATF has posted “NATF Reference Document: Distributed Energy Resource Modeling and Study Practices” to the NATF public website.

The increasing penetration of distributed energy resources (DER) is producing new challenges for transmission planners. The reference document provides details to supplement existing documents authored by NERC and others that will help power system planners or study engineers prepare (1) DER models for interconnection-wide power flow cases and dynamic simulations and (2) DER impact assessments on the bulk power system.

Sharing this document with the broader industry will help improve power system modeling and studies being conducted to integrate DER into the Bulk Electric System.

**Inverter-Based Resources Webinars**

The NATF recently partnered with the Electric Power Research Institute (EPRI), the North American Electric Reliability Corporation (NERC), and the Utility Variable-Generation Integration Group (UVIG) to conduct a series of webinars on inverter-based resources.

As noted in the webinar flyer, “the increasing penetration of inverter-based resources, including renewable energy resources, is creating new opportunities and challenges in planning and operating the bulk power system (BPS).” The series covered aspects of BPS-connected inverter-based resource and distributed energy resources (DERs), including fundamentals, system impacts, modeling, and performance recommendations.

**Joint Modeling Workshop**

American Electric Power hosted the [NERC-NATF-EPRI 2018 Power System Modeling Conference](https://www.epri.com) on June 20-21, 2018. Organized jointly by NERC, the NATF, and EPRI, the conference brought together industry experts to discuss power system modeling and analysis. Topic areas included:

- Interconnection-Wide Model Improvements
- System Model Validation
Cybersecurity Supply Chain Risk Management White Paper and Guidance

A team of NATF members recently completed the “NATF Supply Chain Risk Management Guidance” and “NATF CIP-013-1 Implementation Guidance” documents, which have been posted to the NATF public website for industry use.

The “NATF Supply Chain Risk Management Guidance” document (white paper) describes practices for establishing and implementing a supply chain cyber security risk management plan. “NATF CIP-013-1 Implementation Guidance” is an associated document that the NATF has submitted to NERC for consideration as Implementation Guidance as an approach to comply with CIP-013.

As part of the development, the NATF team coordinated with representatives of specific industry organizations for alignment.

These documents are geared to benefit members and the industry and respond to the NERC board resolution of August 2017 where it asked for industry assistance via the drafting of white papers.

Redacted Operating Experience Reports

In our April newsletter, we reported about a new product posted for industry benefit: redacted operating experience reports. Since then, we have posted five additional reports to our public site for members and other utilities to use internally and share with their contractors to help improve safety, reliability, and resiliency.

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For more information about the NATF, please visit www.natf.net.
The NAGF has finalized its Supply Chain White Paper. The NAGF Development team included the following sections in the whitepaper:

- GENERATOR SUPPLY CHAIN MANAGEMENT PRACTICES
- INITIAL RISK TEST FOR BES CYBER ASSETS/SYSTEMS/SERVICES
- VENDOR SUPPLY CHAIN RISK ASSESSMENT PROCESS

The NAGF Whitepaper will be submitted upon the completion of legal review.

On July 10th, the NAGF attended the NERC Gas Infrastructure Risk and Associated Recommendations Technical Workshop. The NAGF took note of the many presentations and then posted a link to the presentations for its members. The NAGF also volunteered to be a member of the advisory group as natural gas fuel security is also of great concern for generators. The NAGF would like to note the last presentation from Sue Tierney provides a good summary by stating there is neither a single solution nor any one entity that can solve all of the concerns with natural gas security. The NAGF believes this also applies to the ever changing power system.

NAGF, ESIG and NERC organized the Frequency Response and Energy Storage Workshop to be held on August 1st and 2nd which is hosted by NERC at their Washington, D.C. Office. The workshop will include attendees from NERC, DOE, FERC, ISO/RTO’s, NAGF, ESIG, OEM’s, who will discuss:

LBNL Frequency Control Report - Joe Eto (LBNL) / John Undrill (John Undrill, LLC)
- Background on the report
- Review of frequency control concepts
- Analysis approach and study findings
- Observations for Texas, Western Interconnection, Eastern Interconnection
Frequency Support from Non-Synchronous Resources - Jason MacDowell (GE)
- Capabilities of wind, PV solar and battery storage resources
- Enhanced capabilities through interconnection and planning considerations
- Commenters and discussion
  - Mahesh Morjaria (First Solar), Nick Miller (HickoryLedge)
  - Bob Cummings (NERC), Al Schriver (NAGF)

Planning and Operating for Frequency Control Considerations - Julia Matevosyan (ERCOT)
- Operating with frequency support in mind (fast frequency response, commitment, etc.)
- Planning for even higher levels of non-synchronous resources
  - Presentation by Julia Matevosyan on ongoing and future initiatives at ERCOT
  - Presentation by Andrew Groom on ongoing and future initiatives at AEMO
- Commenters and discussion
  - John Simonelli (ISO-NE), Andrew Groom, Julia Matevosyan

BAL-003 Filing Update - Bob Cummings (NERC)
- Phase 1 - Calculation revision
- Phase 2 - Accountability for performance and monitoring of frequency response

Update on Inverter Recommendations - Rich Bauer (NERC)

Understanding Modern Hydro and Battery Storage Technologies
- Hydro and Pumped Storage Hydro
  - Presentation by Alejandro Moreno (Director, DOE Water Power Technologies Office)
  - Presentation by Roland Praus (GE Hydro) on variable speed technology
- Battery Energy Storage Systems
  - Presentation by Kiran Kumaraswamy (Fluence) and Jeff Plew (NextEra)
- Capabilities of various storage resources to provide grid services
- Storage when coupled with other resources and hybrid technologies

Storage – Use Cases, Valuation, Modeling and Market Participation
- Potential new use cases and valuation
- Economic and market challenges and opportunities
- Storage as transmission - in planning and in operations
- Storage as generation – dispatch, market participation, hybrid projects
- Modeling gaps for planning and economic analysis
- Panelists
  - Alejandro Moreno (DOE), Abhijit Rajan (Dominion), Roland Praus (GE Hydro)
  - Kiran Kumaraswamy (Fluence), Jeff Plew (NextEra)

Storage in Markets with FERC Order 841 - Pete Fuller (Autumn Lane Energy Consulting)
- Background on Order 841 and market participation models
- How do markets currently differ in handling storage resources
- How will Order 841 implementation differ from region to region?
- Key challenges for storage participating in RTO markets
- Commenters and Discussion
  - Jeff Plew (NextEra), Mike Berlinski (Customized Energy Services), Erik Ela (EPRI)
The NAGF recognizes the system technical, operating and economic paradigms are quickly changing. The NAGF also acknowledges there is no one solution nor any one entity that can resolve all of the emerging issues with the changing system. The goal of the workshop is to review the capabilities of generation and storage, and to begin discussing solutions for the emerging issues. The workshop will identify focus areas where NERC, NAGF, and ESIG can drive the development of solutions via subsequent workshops and WebEx’s.