

Minutes Board of Trustees

May 10, 2018 | 8:30 a.m. - 12:00 p.m. Eastern

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

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



- Matthew Goldberg, of ISO New England, Inc., representing the Independent System Operator/Regional Transmission Organization 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.



FURTHER RESOLVED, that the Board, upon recommendation of the Finance and Audit Committee, hereby accepts the NERC First Quarter 2018 Unaudited Statement of Activities, 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. McIntrye 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



Agenda Board of Trustees

May 10, 2018 | 8:30 a.m.-12:00 p.m. Eastern

(Please note the Schedule may be adjusted real-time should meetings conclude early and/or extend past their scheduled end time.)

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

Conference Room: Ritz Carlton Grand Ballroom

Call to Order

NERC Antitrust Compliance Guidelines—Public Announcement

Introductions and Chair's Remarks

Consent Agenda - Approve

- 1. Minutes*
 - a. February 8, 2018 Meeting
- 2. Committee Membership and Charter Changes*
 - a. Compliance and Certification Committee Membership
 - b. Planning Committee Membership
 - c. Planning Committee Charter Amendments
 - d. Critical Infrastructure Protection Committee Membership

Regular Agenda

3. Remarks and Reports

- a. Welcome Remarks Tom Farrell, Chairman, President & CEO of Dominion Energy, Inc.
- b. Remarks by Richard Glick, Commissioner, FERC
- c. Remarks by Bruce Walker, Assistant Secretary, DOE
- d. Remarks by Murray Doehler, Past Chair, CAMPUT
- e. President's Report
- 4. Report on Board of Trustees and Regional Board Officers Joint Meeting Information
- 5. Report on Board of Trustees April 17 and May 8, 2018 Closed Sessions Information
- 6. Board Committee Reports
 - a. Corporate Governance and Human Resources



- b. Compliance
- c. Finance and Audit
 - i. 2017 Audit Results and Financial Statements Accept
 - ii. First Quarter 2018 Unaudited Statement of Activities Accept
- d. Enterprise-wide Risk
- e. Technology and Security
- f. Nominating Committee
- g. Report by Vice Chair on Standards Quarterly Activities

7. Standards Quarterly Report and Actions*

- a. PER-003-2 Operating Personnel Credentials Approve
- b. PER-004-2 Reliability Coordination-Staffing Retire
- c. Supply Chain Activities Update

8. Other Matters and Reports*

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

9. Committee Reports*

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

10. Forum and Group Reports*

- a. North American Energy Standards Board
- b. North American Transmission Forum



c. North American Generator Forum

*Background materials included.