

Minutes Board of Trustees

November 9, 2017 | 8:30 a.m.–12:00 p.m. Central

JW Marriott New Orleans
614 Canal Street
New Orleans, LA 70130

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 New Orleans, Louisiana, on November 9, 2017, at 8:30 a.m. Central, and a quorum was declared present. The agenda is attached as **Exhibit A**.

Present at the meeting were:

Board Members

Roy Thilly, Chair
Janice B. Case
Gerald W. Cauley, President and Chief Executive Officer
Robert G. Clarke
Kenneth W. DeFontes, Jr.
Frederick W. Gorbet
David Goulding
George S. Hawkins
Jan Schori

NERC Staff

Charles A. Berardesco, Senior Vice President, General Counsel, and Corporate Secretary
Tina Buzzard, Associate Director
Tom Coleman, Director of Reliability Assessment
Howard Gugel, Senior Director of Standards
Stan Hoptroff, Vice President, Chief Technology Officer, and Director of Information Technology
Scott Jones, Vice President, Chief Financial and Administrative Officer, and Corporate Treasurer
Mark G. Lauby, Senior Vice President and Chief Reliability Officer
Bill Lawrence, Senior Director of E-ISAC
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
Timothy E. Roxey, Vice President and Chief E-ISAC Operations Officer
Marcus H. Sachs, Senior Vice President and Chief Security Officer
Janet Sena, Senior Vice President and Director of Policy and External Affairs
Michael Walker, Senior Vice President and Chief Enterprise Risk and Strategic Development Officer

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 Leo Denault of Entergy Corporation, Travis Fisher of the Department of Energy ("DOE"), Commissioner Cheryl LaFleur and David Ortiz of the Federal Energy Regulatory Commission ("FERC"), Murray Doehler of CAMPUT, and Asim Haque, Chair of the Ohio Public Utilities Commission ("Ohio PUC"). Mr. Thilly reported that before the open meeting, as is its custom, the Board met in closed session with NERC management, and subsequently in executive session without NERC management, to review NERC management activities.

Consent Agenda

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

Minutes

The draft minutes for the August 10, 2017 meeting were approved as presented to the Board at this meeting.

Committee Membership Appointments and Charter Revisions

Operating Committee

RESOLVED, that the Board hereby approves the amended Operating Committee ("OC") charter, substantially in the form presented to the Board at this meeting, to replace the OC charter approved by the Board on February 9, 2017.

FURTHER RESOLVED, that the Board hereby appoints the following individual to the OC, for a term of two years:

- Greg Darnell of Southern Company, representing Electricity Marketer

Standards Committee

RESOLVED, that the Board hereby approves the appointments of the following individuals to the Standards Committee, each for a term of two years:

- Andrew Gallo of City of Austin dba Austin Energy to serve as Chair
- Amy Casuscelli of Xcel Energy to serve as Vice Chair

Compliance and Certification Committee

RESOLVED, that the Board hereby approves the appointments of the following individuals to serve as Compliance and Certification Committee ("CCC") representatives, each for a term of three years:

- Steve McElhaney of Cooperative Energy, representing Regional Entity

- Jodirah Green of ACES Power, representing Electricity Marketer

FURTHER RESOLVED, that the Board hereby approves the re-appointment of the following individual to serve as CCC representative, for a term of three years:

- Lisa Milanes of California Independent System Operator, representing Regional Entity

Critical Infrastructure Protection Committee

RESOLVED, that the Board hereby approves the appointments of the following individuals to the Critical Infrastructure Protection Committee, for a term of two years:

- Marc Child to serve as Chair, representing Great River Energy
- David Revill to serve as Vice Chair, representing Georgia Systems Operations Corporations,
- David Grubbs to serve as Vice Chair, representing the City of Garland/Garland Power and Light, replacing Nathan Mitchell

Reliability Issues Steering Committee

RESOLVED, that the Board hereby approves the appointment of Andrew Gallo to serve as the Standards Committee representative to the Reliability Issues Steering Committee, replacing Brian Murphy for the remainder of Mr. Murphy's term ending on January 31, 2018.

Regular Agenda

Remarks by Leo P. Denault, CEO, Entergy Corporation

Mr. Cauley introduced Mr. Denault, who thanked attendees and welcomed them to New Orleans. Mr. Denault recommended the city's World War II museum, acknowledging the many veterans at Entergy. He commented on Entergy's work at the confluence of reliability and security, noting that approximately forty percent of Entergy's customers are industrial. Mr. Denault stated that changing technologies are impacting reliability issues, and the increasing amount of customer data has implications concerning data security. He commended NERC for its continued work in a rapidly changing environment.

Remarks by Travis Fisher, Senior Advisor, DOE

Mr. Cauley introduced Mr. Fisher, attending for Bruce Walker and Patricia Hoffman of the DOE. Mr. Fisher commented on the DOE's continuing focus on resilience and the DOE's engagement in GridEx. He noted the DOE's restoration work in Puerto Rico, as well as the DOE's interest in longer-term, more reliable solutions for the island.

Remarks by Cheryl LaFleur, Commissioner, FERC

Ms. LaFleur noted her attendance to the Board meeting in New Orleans five years prior, and commented that much had changed since then. She expressed her appreciation for attending with David Ortiz, Matthew Vlissides, Cristie DeVoss, and Roger Morie of FERC. Ms. LaFleur expressed further appreciation to all of the 1,300 FERC employees who continued to work diligently despite the FERC's lack of a quorum. She provided comments around resilience, noting a common sense understanding of what the term means, including the resiliency activities shown in the context of the MRC presentations on hurricanes Harvey and Irma. Ms. LaFleur noted that resilience is linked to NERC's mission to avoid cascading outages,

and stated that the ERO Enterprise is the only continent-wide entity with the engineering expertise to handle the task. She noted that the ERO Enterprise should be careful to not include political considerations in its assessment activities.

Remarks by Asim Haque, Chair, Ohio PUC

Mr. Thilly introduced Mr. Haque, asking him to speak about his role from a state perspective. Mr. Haque expressed thanks to NERC, in particular to Mr. Cauley and Ms. Sena, for their welcoming and open approach. He stated that the state commissions are closest to actual customers, and thus are very concerned about costs. Mr. Haque noted the commissions look to NERC for technical expertise, but cautioned about including any political considerations in its work.

Remarks by Murray Doehler, CAMPUT

Mr. Doehler expressed his appreciation in attending, and referenced the upcoming Veteran's Day. He commented that CAMPUT has formed a NERC committee, and provided his support for the comments made by Ms. LaFleur and Mr. Haque.

President's Report

Mr. Cauley acknowledged the 52nd anniversary of the 1965 blackout which set the stage for NERC. He noted the upcoming fourth GridEx exercise that will include Canadian and Mexican authorities and members of the Electricity Subsector Coordinating Council. Mr. Cauley noted comments on NERC's role, and stated that NERC's data and analysis were appropriately considered in recent policy maker activity. He stated that NERC is careful not to inappropriately cross over into policy issues, but that NERC has an obligation to look more deeply into essential reliability services. As an example, Mr. Cauley noted that the upcoming gas report will identify emerging risks, but will not dictate policy outcomes. He further noted that the ERO Enterprise has matured its approach to coordinated long-term strategy planning, including budgets, cooperation with the Regional Entities, and excellence in Standards and Compliance. Mr. Cauley commented that NERC's focus areas include excellence in its regulatory role, and continuing to identify existing and emerging risks with particular attention to rapid changes in the grid, security, and resilience.

Report on Semiannual Meeting of NERC Trustees and Regional Entity Boards

Mr. Thilly reported on the semiannual meeting with ERO Enterprise board leadership, noting the meeting is an important part of the mission to be a single ERO Enterprise. He stated the meeting included a discussion of program alignment, strategic planning and coordination of budget processes between NERC and the Regional Entities, and governance and oversight of the Compliance Monitoring and Enforcement Program (CMEP) for purposes of ERO Enterprise credibility.

Report on Board of Trustees November 7, 2017 Closed Session

Mr. Thilly reported on the closed session with management on compliance, personnel, and contract matters. He noted the resilience discussion at the Member Representatives Committee ("MRC") and policy comments, and the requested work by the Reliability Issues Steering Committee ("RISC") in defining resilience. Mr. Thilly commented that resilience is already built into what NERC does, and NERC is not looking to expand scope but rather to examine resilience more closely. The Board requested that the RISC report back with a framework on how to think about resiliency in the context of reliability.

Board Committee Reports

Corporate Governance and Human Resources Committee

Mr. Clarke, Committee Chair, summarized the November 2, 2017 meeting, and noted that the 2017 Board and MRC effectiveness surveys are due December 15, 2017. He commented that the Corporate Governance and Human Resources Committee (the “CGHRC”) recommended the corporate metrics for approval and hired an executive compensation consultant.

Compliance Committee

Ms. Case, Committee Chair, provided an update on implementation of risk-based CMEP, emphasizing the Committee’s focus on the most serious risks and violations and streamlining processing of minor risk violations. She noted the high rate of self-reporting and enhanced timely mitigation. Ms. Case also noted increased scrutiny of major violators, including meeting with registered entities’ leadership, and described plans for continued reporting to stakeholders on program alignment.

Finance and Audit Committee

Ms. Schori, Committee Chair, reported the Committee met with Grant Thornton and approved fee agreements. She noted the Committee approved principles for oversight of financial internal control audits. Upon motion duly made and seconded, the following resolution was approved:

RESOLVED, that the Board, upon recommendation of the Finance and Audit Committee, hereby accepts the NERC Third Quarter 2017 Unaudited Statements of Activities, as presented to the Board at this meeting.

Enterprise-wide Risk Committee

Mr. Goulding, Committee Chair, summarized the recent meeting of the Committee, including a review of the 2018 audit plan and three-year plan, along with a CCC update.

Standards Oversight and Technology Committee

Mr. DeFontes, Committee Chair, reported the Compliance Monitoring and Enforcement Program (“CMEP”) Technology Project update, including the status of bids and Board approval. He expressed the Committee’s support for the 2018-2020 Reliability Standards Development Plan. In the previous day’s meeting, Mr. Hoptroff provided an update on other IT projects for 2017 and 2018 and the technology review policy that will be used to evaluate projects. Mr. Gugel reviewed the Standards Efficiency Review project, noting a goal of a twenty-percent reduction in requirements.

Nominating Committee

Mr. Gorbet, Committee Chair, summarized the Committee’s report at the MRC. He discussed the Committee’s composition and noted two existing trustees will be re-nominated. Mr. Gorbet reported that the Committee interviewed eight individuals for two open spots, and the Committee will finalize nominations in December.

Standards

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

2018-2020 Reliability Standards Development Plan

RESOLVED, that the Board hereby approves the proposed 2018-2020 Reliability Standards Development Plan, as presented to the Board at this meeting.

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

TPL-007-2 – Geomagnetic Disturbance Mitigation

RESOLVED, that the Board hereby adopts proposed Reliability Standard TPL-007-2, substantially in the form presented to the Board at this meeting.

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

FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard TPL-007-1, 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.

Other Matters and Reports

ERO Enterprise Long-Term Strategy, Operating Plan, and 2018 Metrics

Mr. Thilly noted a full report was done at the MRC, and thanked staff across the ERO Enterprise for their work. Upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby approves the proposed ERO Enterprise Long-Term Strategy, Operating Plan, and 2018 Metrics, in substantially the form as presented to the Board at this meeting, together with such changes as are approved by the Chief Executive Officer and reported to the Board.

Compliance Monitoring and Enforcement Program Technology Project

Mr. DeFontes reported that Mr. Hoptroff had presented the CMEP Technology Project to the SOTC, which had recommended approval. Upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, the CMEP Technology Project (the “Project”) is a strategic initiative designed to support the ERO Enterprise as it continues to evolve as a risk-informed regulator; and

WHEREAS, the Project is designed to further the ERO Enterprise goals of implementing a risk-informed CMEP, reducing known risks to reliability, and improving the efficiency and enforcement of the ERO; and

WHEREAS, NERC management has summarized for the Board's Standards Oversight and Technology, Finance and Audit, and Compliance Committees the expected capital investment and other significant terms and conditions for the Project; and

WHEREAS, the Board has determined to approve the Project and to authorize NERC management to enter into appropriate agreements to implement the Project; and

NOW, THEREFORE, BE IT RESOLVED, that the Board of Trustees, upon recommendation of the Standards Oversight and Technology Committee, hereby approves the Project, consistent with the foregoing and the information provided to the Board and the above-referenced Committees;

FURTHER RESOLVED, that each of the Chief Executive Officer, General Counsel, and Chief Financial Officer, are hereby authorized to execute and deliver, on behalf of NERC, agreements relevant to the Project in a form substantially consistent with the foregoing and the information provided to the Board and its Committees.

Special Assessment: Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System

Tom Coleman presented the report, and thanked the Board for its review and for comments from the MRC, Planning Committee, and Operating Committee. The report stemmed from the Aliso Canyon storage facility outage, underscoring the risk to generation. Mr. Coleman outlined the process for developing the report. Mr. Cauley noted that the report does not endorse specific market solutions. He also requested for NERC Legal to review the report for CEII prior to release. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, hereby accepts the NERC Special Assessment "Bulk Power System Impacts due to Severe Disruptions on the Natural Gas System," substantially in the form presented to the Board at this meeting.

Rules of Procedure Amendment – Registered Ballot Body Criteria

Mr. Gugel presented the amendment, discussing comments by stakeholders. Upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby approves the proposed amendments to Appendix 3D to the NERC Rules of Procedure, as presented to the Board at this meeting.

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

NERC Membership Roster

Mr. Berardesco summarized the proposed upcoming membership renewal process, required by the NERC Bylaws, referencing the materials included in the advance agenda package. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, pursuant to Article II, Section 2 of the NERC Bylaws, hereby establishes March 3, 2018, as the date by which all NERC members must submit their registration renewals, and otherwise authorizes the plan submitted by NERC management for the renewal of NERC membership by all NERC members.

Southwest Power Pool Regional Entity (“SPP RE”) Transition Update

Mr. McIntyre reported updates have been presented through industry webinars, a presentation at the SPP RE workshop, and correspondence with registered entities through FAQs on a weekly basis. He noted all registered entities have provided their response regarding transitioning, and NERC is working on analysis. Mr. McIntyre discussed the ongoing plans, including public posting, and presenting a recommendation to the Board in February.

Geomagnetic Disturbance Research Plan Update

Mr. Moura provided an update on the research plan, including an agreement between NERC and Electric Power Research Institute, the general plan moving forward, and a ROP Section 1600 data request to be presented to the Board for approval in 2018.

Update to Inverter Resource Performance Task Force and Level 2 Industry Recommendation

Mr. Merlo reviewed the results of the Level 2 alert, noting key findings and vendors’ recommendations of remediation based on lessons learned from previous inverter trips.

Supply Chain Standards Implementation Update

Mr. McIntyre provided an update on activities since August, and reviewed actions based on the Board’s resolutions related to the supply chain Reliability Standards. He highlighted work with stakeholders, associations, and forums to highlight supply chain risks. He outlined next steps and future follow-up with the Board.

E-ISAC Quarterly Update

Mr. Sachs presented the quarterly E-ISAC update, referencing the materials included in the advance agenda package, including an update on member engagement and CRISP engagement. He provided an update on CRISP agreements with the Regional Entities, and on the Kaspersky issue and related NERC alert. Mr. Sachs thanks Mr. Hoptroff for his team’s support of the E-ISAC. Mr. Lawrence provided an update on the portal, CHIRP initiative, GridSecCon, and GridEx.

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. He expressed his appreciation for the Board approval of the new Committee charter, and highlighted the Committee's work on the ERO Enterprise strategic plan.

Planning Committee

Brian Evans-Mongeon, Committee Chair, referenced the written report, and complimented the work of staff and committees on the Long-Term Reliability Assessment. He noted the Committee is completing work on the scope of Essential Reliability Services, and working on a presentation with Regional Entities on Distributed Energy Resources and Under Frequency Load Shedding.

Critical Infrastructure Protection Committee

Marc Child, Committee Chair, summarized the Committee's work on guidelines, and the formation of a working group to address supply chain and remote access issues.

Member Representatives Committee

John Twitty, MRC Chair, summarized the issues that had been discussed at the MRC meeting on the previous day, and noted the election of Jason Marshall and Gregory Ford as the new MRC leadership.

Personnel Certification Governance Committee

Mike Anderson, Committee Vice Chair, referenced the written report, providing an update on recent activities. He noted the personnel certification program has a long history, and the Committee is focused on further strengthening the program.

Standards Committee

Brian Murphy, Committee Chair, noted that the written report had been reviewed the prior day. He thanked the Board and NERC staff for their support, and expressed his confidence in the future Committee leadership. Mr. Thilly thanked Mr. Murphy for his service and leadership, and his key role in strengthening the standards process.

Reliability Issues Steering Committee

Lloyd Linke, RISC member, stated the Committee received feedback on the RISC report, and that the comment period is still open. He noted the upcoming solicitation of nominations for the Committee. Mr. Thilly noted the excellent work of the RISC informed NERC planning processes.

Compliance and Certification Committee

Patti Metro, Committee Chair, noted the Committee will transmit required NERC self-certifications to the Board and independent auditors. She noted that items for approval will be submitted to the Board for the February meeting.

Electricity Subsector Coordinating Council

Scott Aaronson, ESCC Secretary, referenced the written report, highlighting ESCC's focus on Puerto Rico restoration efforts. He noted significant progress on E-ISAC development, commending staff leadership

and the Board's support through resources. Mr. Aaronson emphasized the importance of resilience as part of reliability, and of learning from real-life experiences for future work.

Forum and Group Reports

North American Energy Standards Board ("NAESB")

Michael Desselle, NAESB Chair, referenced the written report, and noted continued coordination with NERC staff.

North American Transmission Forum

Tom Galloway, Forum CEO, summarized the Forum's work on industry resiliency, cybersecurity, and enhancing transparency on certain work as appropriate.

North American Generator Forum

Allen Schriver, Forum COO, reported the Forum's work with equipment vendors on modifications to inverters.

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

November 9, 2017 | 8:30 a.m.–12:00 p.m. Central

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

JW Marriott New Orleans
614 Canal Street
New Orleans, LA 70130

Conference Room: Ile De France Ballroom – 3rd Floor

Call to Order

NERC Antitrust Compliance Guidelines—Public Announcement

Introductions and Chair's Remarks

Consent Agenda – Approve

1. Minutes*

- a. August 10, 2017 Meeting

2. Committee Membership and Charter Changes*

- a. Operating Committee Membership and Charter Changes
- b. Standards Committee Membership
- c. Compliance and Certification Committee Membership
- d. Critical Infrastructure Protection Committee Membership
- e. Reliability Issues Steering Committee Membership

Regular Agenda

3. Remarks and Reports

- a. Remarks by Leo P Denault, CEO, Entergy Corporation
- b. Remarks by Bruce Walker, Assistant Deputy Secretary, DOE
- c. Remarks by Cheryl LaFleur, Commissioner, FERC
- d. Remarks by Murray Doehler, Past Chair, CAMPUT
- e. President's Report

4. Report on Semiannual Meeting of NERC Trustees and Regional Entity Boards – Information

5. Report on Board of Trustees November 7, 2017 Closed Session – Information

6. Board Committee Reports

- a. Corporate Governance and Human Resources
- b. Compliance
- c. Finance and Audit
 - i. Third Quarter Unaudited Financial Statements – **Accept**
- d. Enterprise-wide Risk
- e. Standards Oversight and Technology
- f. Nominating Committee

7. Standards*

- a. 2018-2020 Reliability Standards Development Plan – **Approve**
- b. TPL-007-2 - Geomagnetic Disturbance Mitigation – **Adopt**

8. Other Matters and Reports

- a. ERO Enterprise Long-Term Strategy, Operating Plan, and 2018 Metrics* – **Approve**
- b. Compliance Monitoring and Enforcement Program Technology Project* – **Approve**
- c. Special Assessment: Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System* – **Accept**
- d. Rules of Procedure Amendment—Registered Ballot Body Criteria* – **Approve**
- e. Update of NERC Membership Roster* – **Approve**
- f. Southwest Power Pool Regional Entity (SPP RE) Transition Update – **Information**
- g. Geomagnetic Disturbance Research Plan Update* – **Information**
- h. Update to Inverter Resource Performance Task Force and Level 2 Industry Recommendation* – **Information**
- i. Supply Chain Standards Implementation Update* – **Information**
- j. E-ISAC Quarterly Update* – **Information**
 - i. GridEx Update
 - ii. E-ISAC Long-Term Strategy Update
 - iii. New Portal Overview

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*

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

11. Adjournment

*Background materials included.