Agenda
Technology and Security Committee
May 8, 2019 | 11:00 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.)

The Ritz-Carlton, St. Louis
100 Carondelet Plaza
St. Louis, MO 63105

Conference Room: Ritz-Carlton Ballroom (Lobby Level)

Introductions and Chair’s Remarks

NERC Antitrust Compliance Guidelines and Public Announcement*

Agenda Items

1. Minutes* — Approve
   a. February 6, 2019 Meeting

2. E-ISAC Update* — Review
   a. Strategic Plan Update
   b. Draft 2020 E-ISAC Budget

3. ERO Enterprise Information Technology Strategy and Projects Update and Budget Forecast* — Review
   a. NERC System Security Update


5. Adjournment

*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.
Chair George S. Hawkins called to order a duly noticed open meeting of the Technology and Security Committee (the “Committee”) of the Board of Trustees (“Board”) of the North American Electric Reliability Corporation (“NERC” or the “Company”) on February 6, 2019, at 11:30 a.m. Pacific, and a quorum was declared present. The agenda is attached as Exhibit A.

Present at the meeting were:

<table>
<thead>
<tr>
<th>Committee Members</th>
<th>Board Members</th>
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<tr>
<td>George S. Hawkins, Chair</td>
<td>Robert G. Clarke</td>
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<tr>
<td>Janice B. Case</td>
<td>Frederick W. Gorbet</td>
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<td>Kenneth W. DeFontes, Jr.</td>
<td>David Goulding</td>
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<tr>
<td>Suzanne Keenan</td>
<td>Robin E. Manning</td>
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<td>Roy Thilly</td>
<td>James B. Robb, President and Chief Executive Officer</td>
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<td>Jan Schori</td>
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NERC Staff
Charles A. Berardesco, Senior Vice President, General Counsel, and Corporate Secretary
Tina Buzzard, Associate Director
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
Bill Lawrence, Vice President, Chief Security Officer, and Director of the E-ISAC
Mark G. Lauby, Senior Vice President and Chief Reliability Officer
Janet Sena, Senior Vice President and Director of Policy and External Affairs

Chair’s Remarks
Mr. Hawkins welcomed the Committee members to the meeting. He remarked on recent events, including a new arrangement with Japan and Europe and the expansion of the Grid Security Conference. He also noted Ms. Keenan’s attendance at the recent E-ISAC Members Executive Committee (“MEC”) meeting and that minutes from MEC meetings are publicly available at TLP-Green status on the E-ISAC portal.

NERC Antitrust Compliance Guidelines
Mr. Hawkins directed the participants’ attention to the NERC Antitrust Compliance Guidelines included in the agenda, and indicated that all questions regarding antitrust compliance or related matters should be directed to Mr. Berardesco.
Minutes
Upon motion duly made and seconded, the Committee approved the minutes of the November 6, 2018 meeting as presented at the meeting.

E-ISAC Update
Mr. Lawrence provided an update on recent E-ISAC activities, referencing the materials that had been included in the advance agenda package. His update highlighted the E-ISAC’s progress executing its long-term strategy, including the areas of member engagement, information sharing, and threat analysis. Mr. Lawrence highlighted planned resource additions in 2019, including additional staff and corporate services support. He reviewed the engagement efforts with government partners in the U.S. and Canada, highlighting outreach to Canadian entities, focusing on meeting needs, and the deployment of products and services. Mr. Lawrence also highlighted some of the key challenges facing the E-ISAC as it works to execute its long-term strategy, including positioning with other partners, pace and resource demands, information technology initiatives, and space planning. Mr. Peter Gregg of IESO thanked Mr. Lawrence and the NERC team for their outreach, which is helping to build trust in Canada with respect to the E-ISAC.

ERO Enterprise Information Technology Strategy and IT Projects Update
Mr. Hoptroff provided an update on the ERO Enterprise information technology projects, referencing the materials that had been included in the advance agenda package. He provided an update on the Compliance Monitoring and Enforcement Program (“CMEP”) Technology Project, which is now known as “Align”, and the common registration tool. Mr. Hoptroff also provided highlights from the proposed SAFNR upgrade business case which was completed in 2018. He noted that work is continuing on several E-ISAC portal enhancements. A request was made for a webinar on the SAFNR business case. The Committee discussed process harmonization and improvements.

Annual Review of Committee Mandate
Mr. Hawkins noted that the Committee is required to review its mandate on an annual basis. Based on Legal department’s review, no changes are recommended. The Committee concurred with the approach.

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

Submitted by,

Charles A. Berardesco
Corporate Secretary
Long-Term Strategy Update

Bill Lawrence, VP and CSO, NERC, and Director, E-ISAC
Technology and Security Committee Meeting
May 8, 2019
**Engagement**

- A member-first culture sets the E-ISAC’s direction while active 2-way engagement and sharing groups increase value and leverage industry and cross-sector resources.

**Information Sharing**

- Trusted relationships and technologies draw-in and drive the flow and dissemination of high-value information across the electricity and interdependent sectors in a timely manner.

**Analysis**

- Credible, reliable analytics turn member, cross-sector, third party, and government data into sector-specific insights and member action.
Engagement
- Building and enriching the value of E-ISAC membership
- Strengthening trusted-source partner relationships
- Enhancing engagement with Canada
- Evolving the GridEx program

Information Sharing
- Strengthening portal features and capabilities
- Increasing information sharing by trusted-source partners and industry
- Improving value added actionable information sharing with industry
- 24x7 watch operations

Analysis
- Hiring, developing, and retaining highly qualified staff
- Leveraging technology to enhance capabilities
- Developing new data sources, analytical tools and capabilities
- Strengthening analytical capabilities through strategic partnerships
Key Activities (2019-2020)

- Building and enriching the value of E-ISAC membership
- Strengthening trusted-source partner relationships
- Enhancing engagement with Canada
- Evolving the GridEx program

- Portal communities and IEP; Customer Relationship Management Tool; Publications and Briefings
- Increased engagement with DOE, DOD, DHS, National Laboratories
- Canadian Partnership Outreach tour; Increased collaboration with CEA and IESO
- Gas and water utility registration increase; Canada, Mexico, New Zealand, Australia
Key Activities (2019-2020)

- Strengthening portal features and capabilities
  - Logging, security, user community, and GridEx enhancements

- Increase information sharing by trusted-source partners and industry
  - Initiatives with DOD, FSARC, MS-ISAC, DNG-ISAC, public power and OT pilots; onboarding new CRISP participants

- Improve value-added, actionable information sharing with industry
  - Increase focus on emerging threats, examination and correlation of multiple data sources

- 24x7 watch operations
  - Staffing; enhancing watch operations procedures and controls; gap analysis; customer value delivery
Key Activities (2019-2020)

- Hire, develop, and retain highly-qualified staff
  - Deepening analytical and watch bench strength

- Leverage technology to enhance capabilities
  - Technology road map; data management tools; CAISS; engagement with DOE, CEDS, and other research activities

- Develop new data sources, analytical tools, and capabilities
  - CRISP data growing; exploring potential value added analysis using OT pilot data sources; Cross-sector initiative with FSARC

- Strengthen analytical capabilities through strategic partnerships
  - Collaboration with DOD, National Laboratories, FFRDCs, MS-ISAC, Water ISAC, and DNG-ISAC, IESO, strategic vendors
• Stay focused on execution of strategic plan while assessing whether adjustments are warranted to accommodate changes in the external environment
• Provide future updates on effective threat analysis, including use cases demonstrating capabilities of new tools
• Consider more specific “value added” information sharing request and incentives for members
• Present proposed 2020 performance metrics for review at June meeting
• Carefully manage consulting resources
• Important to have a strong and well funded NERC that is capable of supporting the E-ISAC
Questions and Answers
Preliminary 2020 E-ISAC Budget

Scott Jones, SVP, Chief Financial and Administrative Officer
Technology and Security Committee Meeting
May 8, 2019
• Initial review in June 2017
   E-ISAC presented 5-year resource plan in support of long-term strategy
   MEC recommended approval of strategy through 2018 budget support
   NERC Board of Trustees accepted E-ISAC long-term strategy
• Five-year strategy contemplates an annual review and approval of E-ISAC proposed resource needs and budget
• Incorporated into overall NERC budget and subject to final approval by NERC Board of Trustees
• Year one of strategy was 2018, currently executing year two of strategy (2019), and proposing year three (2020) generally in line with previous projections and estimates
• Proposed 2020 budget is on track with prior projections supporting the long-term strategy
Note: Shifts in resources may occur across departments as ongoing needs and priorities are evaluated.
## E-ISAC DIRECT COSTS

### 2019 Final Budget --- 2020 Draft 1 Budget

<table>
<thead>
<tr>
<th></th>
<th>2019 Final Budget</th>
<th>2020 Draft 1 Budget</th>
<th>$ Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>$8,180,123</td>
<td>$9,530,378</td>
<td></td>
<td></td>
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<tr>
<td>Meetings and Travel</td>
<td>418,000</td>
<td>425,200</td>
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<tr>
<td>Operating Expenses</td>
<td>9,431,696</td>
<td>9,912,675</td>
<td></td>
<td></td>
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<tr>
<td>Fixed Assets</td>
<td>700,000</td>
<td>421,199</td>
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<tr>
<td><strong>Total Direct Costs</strong></td>
<td>$18,729,819</td>
<td>$20,289,452</td>
<td>$1,559,633</td>
<td>8%</td>
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<tr>
<td>CRISP portion</td>
<td>$8,080,729</td>
<td>$8,085,241</td>
<td>$4,512</td>
<td>0%</td>
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<tr>
<td>Non-CRISP portion</td>
<td>$10,649,090</td>
<td>$12,204,211</td>
<td>$1,555,121</td>
<td>15%</td>
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</tbody>
</table>
• Total direct costs increased 8%
  ▪ CRISP costs relatively flat
  ▪ Non-CRISP costs up 15%

• **Personnel**: Added 7 FTEs, including 24/7 watch capability and analysts
• **Meetings and Travel**: Increased due to experience and added personnel
• **Operating Expenses**: Added investments in technology and contract support
• **Fixed Assets**: Decrease in leasehold and hardware/server costs
• **Non-ISAC Costs**: Increase in administrative areas to support growth
Overview of NERC 2020 Budget

- Draft 1 budget increase of 3.8%
  - E-ISAC (direct and indirect costs) is approximately 13%
  - Non E-ISAC (direct and indirect costs) is generally flat
- Staff levels
  - E-ISAC increasing per the long-term strategy
  - Non E-ISAC remaining flat
- Technology/tools investments across NERC

- Draft 1 assessment increase of 4.5%
  - Well below original projection of 6.5%
  - Release of surplus working capital
  - No planned release of stabilization reserves at this time
Next Steps

- **May 8**: FAC public meeting to discuss first draft of 2020 budget
- **May 17**: First draft of 2020 budget posted for comment through June 30
- **May 30**: FAC public webinar to preview first draft of 2020 budget
- **July 15**: Final draft of 2020 budget posted for comment through July 31
- **July 18**: FAC public webinar to preview final draft of 2020 budget
- **August 15**: Present final 2020 budget to NERC Board of Trustees for approval
Questions and Answers
ERØ Enterprise Information Technology Strategy and Projects Update and Budget Forecast

Action
Review

Background
At the February 6, 2019 open meeting of the Technology and Security Committee, an update was provided on the ERØ Information Technology (IT) Strategy. Additionally, updates were provided on several IT projects:

- The new name of the Compliance Monitoring and Enforcement Program (CMEP) Technology Project[1] – Align - was announced.
- The Align Project update included the status of the process harmonization workshops, an overview of the change management plan, and a review of engagement with stakeholders through our outreach to the Compliance and Certification Committee (CCC) and their Alignment Working Group (AWG).
- The status of the Centralized Organization Registration Entity System (CORES) solution for entity registration was reviewed. Data integrations between CORES and Align for the exchange of Registration information and Reliability Standards will be completed in the third quarter of 2019.
- The business case for the upgrade of Situation Awareness for FERC, NERC and the Regional Entities (SAFNR) was discussed and a follow-up webinar scheduled.
- A review of the Southwest Power Pool Regional Entity (SPP RE) Dissolution was provided and all data migration requirements were reported as being successfully completed.
- An update was given on the Electricity Information Sharing and Analysis Center (E-ISAC) Portal, highlighting that the first portal community was delivered in Q4 2018.

Summary
Since the February meeting, additional configuration and testing work has been completed for the first release of Align. Conference Room Pilots were held with selected subject matter experts during the week of March 4. A number of refinements, clarifications, and enhancements were identified to help ensure a successful implementation of the system. On March 12, 2019, the CCC and AWG were given status updates at their meetings at the EEI offices in Washington, DC. Discussions were held with a number of registered entity representatives on March 21, 2019, regarding the technology and policy-based controls being designed for the Align system to insure the protection of registered entity information. Release 1 of Align remains scheduled to be delivered in Q3 of 2019.

[1] The Align Project (previously referred to as the CMEP Technology Project) is a strategic initiative designed to support the ERØ Enterprise as it continues to evolve as a risk-informed regulator. It supports three ERØ Enterprise goals: implementation of a risk-informed CMEP (Goal 2), reduction of known risks to reliability (Goal 3), and improving the efficiency and effectiveness of the ERØ (Goal 6).
In addition, work-to-build, testing, and delivery on CORES has continued. The Organization Registration and Certification Subcommittee (ORCS) was provided a project update on March 12, 2019, and a planning and execution meeting was held March 25 and 26, 2019, with the CORES project team. Additionally, planning for integrations necessary to exchange Entity Registration and Reliability Standards data between Align and CORES continues to be designed and developed.

NERC IT, along with NERC’s Situational Awareness (SA) department and the E-ISAC, completed the business case approval for SAFNR version 3 and awarded the contract to ResilientGrid in early March. NERC SA and NERC IT also hosted a webinar summarizing the business value of the SAFNRv3 investment. The webinar was held on March 21, 2019. Highlights of the webinar include:

- The investment will enable NERC to continue to undertake situational awareness activities consistent with Section 1000 of the Rules of Procedure.
- Implementing a new solution will eliminate the risk of unplanned outages associated with the current system.
- Funds are available in the 2019 and 2020-2022 budget forecasts to support the required investment.
- Competent vendors with viable functional and technical options for this investment were identified through a Request for Proposal.

Work is continuing on additional E-ISAC portal user communities and portal security enhancements on E-ISAC.com. A business case was also approved for the implementation of Salesforce.com to serve as a member engagement solution for the E-ISAC. One of the key findings of the business case was the expected cost of $72 per year to manage the relationship of the current E-ISAC members.

NERC IT continues in its mission to deliver technology solutions supporting the effective and efficient use of resources for registered entities, the ERO Enterprise, and the E-ISAC.
**March 28, 2019 FERC/DOE Technical Conference**

**Action**
Information

**Summary**
Jim Robb represented NERC at a joint FERC/DOE technical conference examining security investments for energy infrastructure. Held March 28, 2019, the conference was aimed at gaining a better understanding of (1) the need for security investments that go beyond those measures already required by mandatory reliability standards, including in infrastructure not subject to those standards (e.g., natural gas pipelines); (2) how the costs of such investments are or could be recovered; and (3) whether additional incentives for making such investments are needed, and if so, how those incentives should be designed.

The conference included participants from government, industry, and state utility commissions to discuss security threats, best practices, cost recovery, and financial incentives. NERC’s statement discussed how NERC supports security through information sharing via the E-ISAC, partnerships such as CRISP, and situational awareness. The statement further suggested that policymakers could consider incentives to promote information sharing and designing new systems with built-in security protections.

[Link to Conference Testimonies](#)