Reliability and Security Technical Committee Proposal

October 2019

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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six 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.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is divided into six 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.
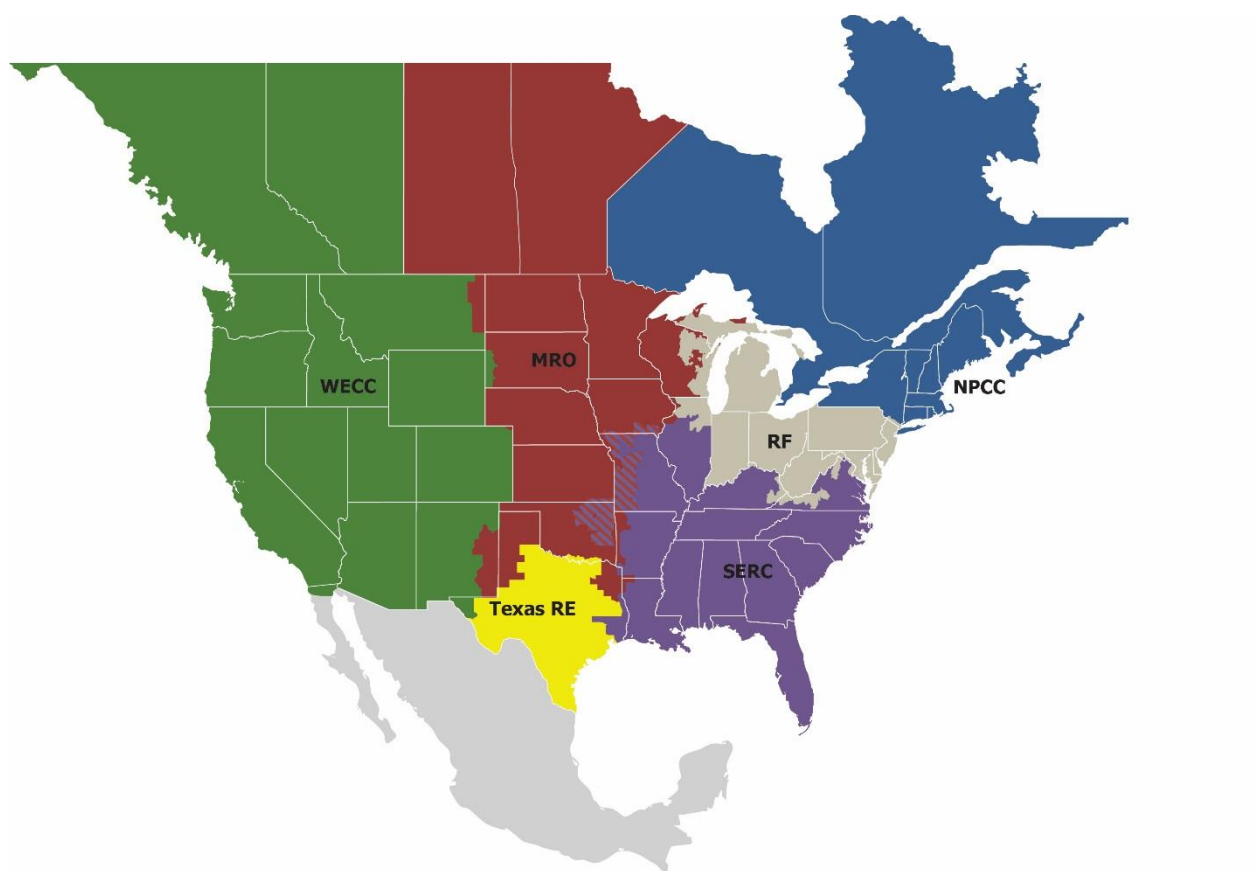
MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	Western Electricity Coordinating Council

Overview

NERC is presently undertaking a comprehensive assessment of its activities that is intended to improve the operational effectiveness of the ERO Enterprise while optimizing the value of industry stakeholder participation. The issue of improving the effectiveness and efficiency of stakeholder engagement across the ERO Enterprise was specifically raised by NERC Chair Roy Thilly in a January 4, 2018 Policy Input Letter to the Member Representatives Committee (MRC). In response to industry feedback that was received, the NERC Board of Trustees (Board) called for a comprehensive review of the existing technical committee structure and actions that could be taken to improve the effectiveness and efficiency of those committees.

As a result of that request, a stakeholder engagement team (SET) was formed to review the existing NERC technical committee structure and develop a recommendation. The SET was tasked by the Board and is comprised of members of the Board, leadership and representatives from the MRC, the chairs of the technical committees (Operating, Planning, and Critical Infrastructure Protection), other stakeholder volunteers, and NERC senior leadership, legal, and staff.

The SET considered multiple options for fulfilling the ERO Enterprise need for participatory technical input on matters of reliability and security of the North American BPS, including maintaining the existing committee structure. The SET determined that a new Reliability and Security Technical Committee (RSTC) to replace the three existing technical committees would best meet the vision for effective and efficient technical input. The sections below discuss the background, process, and vision that guided the SET's work and recommendation. The recommendation will be provided to the Board for possible approval at its November 2019 meeting.

Background

The *ERO Enterprise Long-Term Strategy* and *ERO Enterprise Operating Plan*, approved by the Board on November 9, 2017, recognize the importance of achieving greater enterprise-wide effectiveness and efficiency. Over the course of 2018, NERC and the REs identified current and ongoing efforts related to effectiveness and efficiency and explored future initiatives. The following objectives guided NERC and the REs in this effort:

1. Enhance ERO effectiveness in executing its statutory functions, recognizing the value of industry expertise.

2. Improve the efficiency of ERO operations and the use of stakeholder resources.

The SET was formed to carry out the objectives as related to stakeholder engagement through the technical committees. The SET was co-chaired by the vice chair of the MRC and NERC's Chief Engineer. A complete list of the SET membership and participants is in Appendix A.

Chapter 1: Stakeholder Engagement Team Recommendation Development Process

The SET performed four steps in its review and leveraged NERC's Strategic Plan, Operating Plan, and RISC Report to facilitate the evaluation process: 1) examined all RE experiences with committee restructuring; 2) verified the parameters surrounding governance of the identified technical committees, as outlined in the NERC Rules of Procedure and Bylaws, Federal Power Act, and federal regulations; 3) reviewed common responsibilities, work flow, and current levels of coordination across the identified technical committees based on their work plans and deliverables; and 4) surveyed current committee members for their input about existing committee structures and potential replacement structures. The SET then reviewed potential options for organizational structure and developed recommendations for next steps.

Overview of Existing Committee Structures

The ERO Enterprise makes use of technical input, guidance, and reliability/security leadership provided by its standing committees: Planning (PC), Operating (OC), Compliance and Certification (CCC), Standards (SC), Critical Infrastructure Protection (CIPC), Reliability Issues Steering (RISC), and Personnel Certification Governance (PCGC) Committees. The diagram below shows the current structure of all the standing committees and their general area of focus:
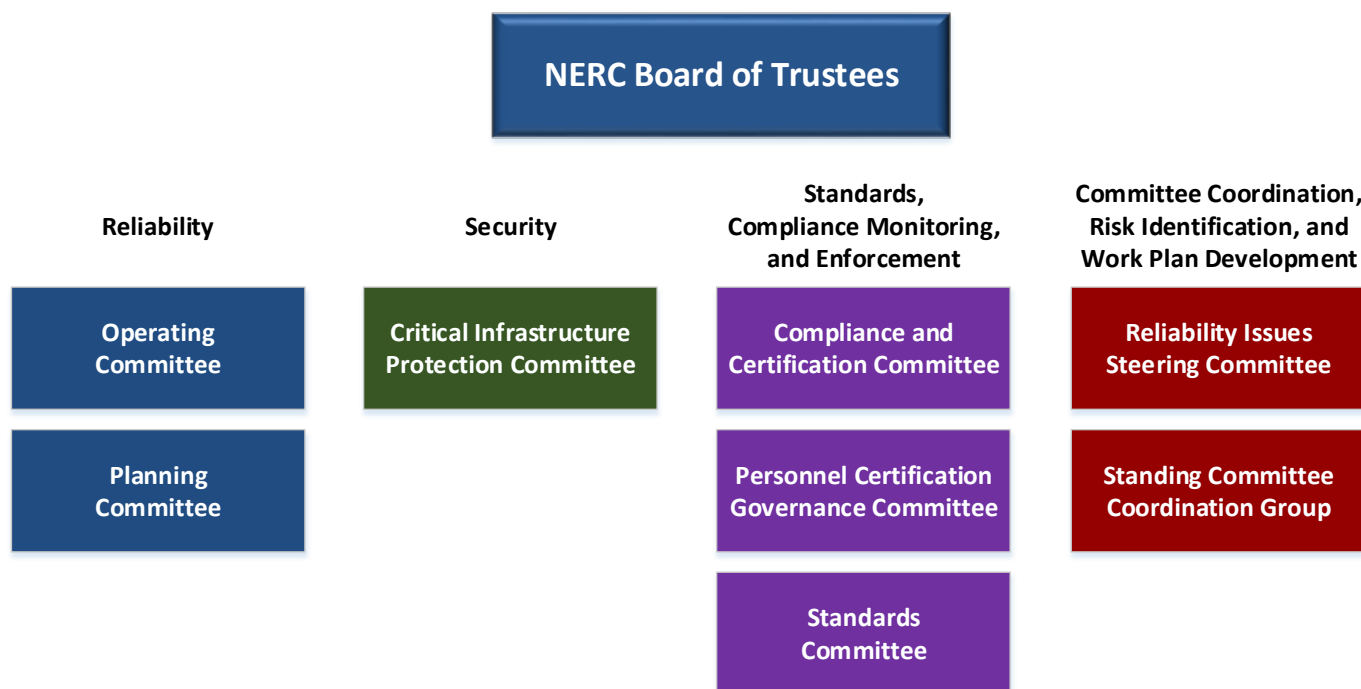
Under the current NERC committee structure, the OC, PC, CIPC, CCC, SC, PCGC, and the RISC report to the Board. Except for the RISC, each has an executive committee that supports the committee between meetings, as well as guides and coordinates the subcommittee, working group, and task force workload and priorities. To further coordinate issues that may be cross-cutting, the chairs and vice-chairs (who sit on the executive committees) of all NERC standing committees meet on a quarterly basis, concurrent with the Board and MRC meetings. This group of chairs and vice chairs is called the Standing Committee Coordination Group (SCCG).[1] The SCCG itself does not have a

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[1] The SCCG also includes leadership teams from the SC, CCC, RISC, and the PCGC. The SCCG members work to improve coordination between the technical committees and help develop work plan items to address reliability issues

charter or a mandate and, therefore, holds no authority to further direct the activities of the standing committees. NERC staff facilitate the meetings and discussions of the SCCG.

Separately, the RISC provides advice to the Board, triages risks, and provides front-end, high-level leadership for issues of strategic importance to the reliability and security of the BPS.

Scope of SET Review

To examine enhancements that could improve the use of scarce industry resources, the SET was tasked with reviewing the OC, PC, and CIPC structures and activities given their technical focus on reliability and security of the BPS. These technical committees identify and assess risk to the operation, planning, and security of the BPS. Most of the technical work of the committees is performed at the subcommittee, working group, or task force level. The technical committees provide direction and oversight of these groups. Some activities of the technical committees are ongoing and provide annual/biennial deliverables while other activities appear to be less focused and fragmented. Recently, more task force creation has occurred to address emerging, fast impacting issues.

The advisory committees (CCC, SC, and PCGC) are not part of this review as each advisory committee is quite distinct with no overlap of responsibilities as specifically noted in NERC's Rules of Procedure. These committees have been self-regulating over time to improve effectiveness and efficiency.

Further, the RISC was also not a part of this review as it has a unique charge and participation model. It produces a biennial report on key risk identification and mitigation. The RISC is chartered to triage risk mitigation approaches.

Stakeholder Engagement Team Review

Based on its review, the SET concluded the following regarding the existing OC/PC/CIPC structure:

- The current model has been in place with little change for over 10 years
    - Model requires significant expense and time commitment from NERC members, NERC staff, and industry stakeholders
    - The ERO Enterprise has matured
    - Several REs have had success enhancing their committee models
- The industry model is changing
    - Advances in new and unfamiliar technologies (e.g., inverters, batteries) are impacting the traditional power grid
    - Risk profiles are changing (e.g., fuel assurance, essential reliability services preservation with resource mix changes)
    - Recent experience within the committees is to stand up task forces for end-to-end solutions, bypassing existing subgroups
- The committee "silos" are blurring
    - Speed of change is accelerating
    - Committee activities increasingly overlap
    - New technology requires cross-cutting rethinking of many utility paradigms (e.g. – inverter-based resources including wind, solar and storage)

The technical committees must play a vital role in order for the ERO Enterprise to be successful in its mission of reducing risk to the BPS. Based on current operations, the technical committees provide oversight, work plan coordination, and technical review of the results and work products developed by working groups of subject matter experts. The SET recognizes the importance of the collaboration, training and education that occurs between participants and attendees of the technical committee meetings. Lessons learned, information sharing by the U.S. Department of Energy (DOE) National Labs, technical reports, security briefings, cyber reports, training, etc. will continue to be provided.

Enhancing stakeholder engagement through the three technical committees should:

- Strengthen alignment of stakeholder input with ERO Enterprise priorities

- Accommodate the changing industry model

- Focus on reliability and security risks from a strategic planning, operating and security perspective

- Effectively address the increasing overlap between the technical committees

- Leverage subject matter expertise more cost-effectively

- Effectively use NERC staff

Chapter 2: Vision for a Restructured Technical Committee Organization

The SET agreed on a vision for enhancing stakeholder engagement through technical committees as outlined below:

- We pivot quickly and refocus resources rapidly
  - We are in an ever-changing world and the pace of change is accelerating
  - Agile teams need to be readily deployed to address emerging issues
- We bring multi-disciplined teams together to develop "complete" solutions
  - Complex issues facing the industry that don't fit into one basket
  - Ensure appropriate mix of knowledge/skills/abilities (participation model): Planning, Operations, Security, Compliance/Policy, and Legal
- We work collaboratively and efficiently to solve problems
  - Eliminate silos and redundancies
  - Committees need the ability to support standards and compliance
    - Ability to address projected and emerging risks that threaten the reliability of the bulk power system
    - Standards or guidelines may be needed
    - Additional tools (potentially new) may be needed
- We leverage scarce talent to solve problems and maximize our return

Chapter 3: Options for Technical Committee Restructuring

The SET reviewed all activities of the three technical committees. A few conclusions became apparent in this review:

1. Technical committee participation is generally based on Sectors (OC/PC) or Regional nomination (CIPC). As more focused technical expertise is usually required to develop detailed solutions, most of the work is now performed at the subcommittee, working group, and task force level – not at the committee level.

2. By-and-large, technical committee activities focused on work plan development, evaluation and execution by the subgroups that report to them.

   a. Subgroup report-outs are occurring on a quarterly basis.

   b. The technical committee work plans are not formally coordinated.

3. Most problem solving is occurring at the subcommittee, working group, and task force level. Some subcommittees have ongoing recurring deliverables while others are more ad hoc task oriented.

4. Some reliability and security risk issues are being addressed by multiple subcommittees, leading to uncoordinated results, and less end-to-end solutions.

The SET also recognizes the importance of the collaboration, training and education that occurs during the technical committee meetings. Examples of such activities include presentations by National Laboratories, Lessons Learned, Security briefings, etc. These activities must continue in the future in some format.

Issue statement: The SET identified the need to ensure work plans are coordinated, and an opportunity for more end-to-end solution development to address reliability/security risks. Several options were reviewed.

Option 1: Create an Oversight Committee

Retain the current committee structure and create an Oversight Committee. The Oversight Committee could either be a newly created body or a redesign of the existing SCCG or RISC.
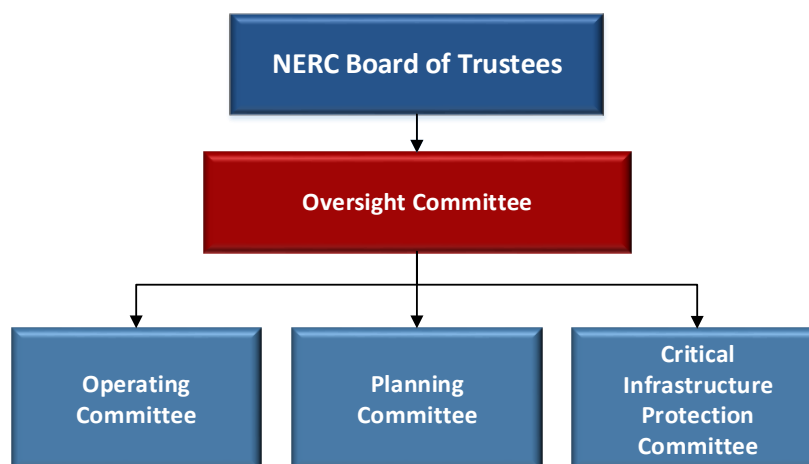
The following are the alternatives considered for the formation of the Oversight Committee to address the issue statement above:

Alternative 1a[2]: Create a new Oversight Committee for NERC Technical Committees, Charter the SCCG and assign responsibilities

Charter the SCCG to perform the assigned responsibilities with associated reporting and accountability for tasks. Institute SCCG reporting to the Board. Subcommittees can be attached (as in Option 2 of the Committee Structure below) for those groups that provide periodic reliability/security reports. For example, a Project Management Oversight Committee focused on project development, end-to-end solutions, and reduction of duplication. If selected, this option would be implemented by assigning to the SCCG the responsibility for developing a charter and organizational structure for approval.

Recommendation for Option 1: The SET believes that Alternative 1a provides the best baseline for comparison of alternatives considered in the effectiveness and efficiency review. The SCCG is currently an informal group that is designed to perform many of the tasks envisioned to be performed by the Oversight Committee and its membership contains the necessary technical and leadership skills to transition to a formal organization reporting to the Board. The SET also considered alternatives 1b and 1c (shown in footnote 2) but the SET does not believe them to be the best choices for creating an Oversight Committee because of the desire to have the Oversight Committee report to the Board. The SET recommends including RISC representation/leadership on the Oversight Committee.

Oversight Committee Participation Model

An oversight structure is needed to ensure the output of NERC RISC (risk reliability reports, risk parameters, data analysis, reliability assessments, etc.) is addressed as well as direct and coordinate potential mitigations and actions required of the NERC technical committees.

If Alternative 1a is the preferred proposed structure, the oversight committee should ensure that:

1. Risks are identified, prioritized and managed

2. Assignments are coordinated and not duplicated

3. The technical committees (OC, PC, and CIPC) are directed to successful execution of the duties

4. Tools (guidelines, guidance, standards, etc.) employed in response to risks are appropriate

There are a number of options for creating the Oversight Committee. Regardless of the selected organizational structure, assumptions have been made regarding the oversight committee:

- Decisions should consider the technical committee structure

- Coordinates all NERC technical committees

- Assumes participation by NERC technical committees (regardless of number)

- Eliminate or avoid duplication of effort or potential gaps in solutions

- RISC Reliability Report (priorities and profiles) used to easily identify and coordinate efforts in support of reliability and security

- Support moving quickly and refocusing resources rapidly

- Brings multi-disciplined teams together to develop "complete" solutions

- Leverage scarce talent to solve problems and maximize returns

- Work collaboratively to solve problems

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[2] The SET analyzed three alternatives for the creation of an Oversight Committee and recommends Alternative 1a. The other alternatives considered were Alternative 1b: Charter the SCCG with organizational reporting to RISC and Alternative 1c: Delegate functions to RISC. Alternative 1a was selected because it provided the best baseline to compare alternative structures, and is in-line with the current structure providing the lowest potential impact on the existing organization.

Oversight Committee Implementation plan

This option would be the simplest and quickest option to implement. It would require formalizing the SCCG charter and gaining Board approval. Participation models for the committees would not change. However, the option doesn't address all of the elements of the envisaged end-point. It does however provide a base-line to which a comparison can be made to other recommended approaches.

Option 2[3]: Replace Technical Committees with a Reliability and Security Technical Committee, and retain existing subcommittee structure

Replace the OC, PC, and CIPC with a single, new RSTC, which reports to the Board, overseeing the work of the subcommittees, working groups, and task forces. The existing subcommittees, working groups, and task forces reporting to the CIPC, OC, and PC will be evaluated for work scope and recurring deliverables. It is envisioned that those subcommittees and working groups with recurring deliverables will be retained, while those without recurring deliverables will be further evaluated for synergies and streamlining of stakeholder activities. Task forces will be deployed with clear deliverables and a timeline for completing those deliverables.
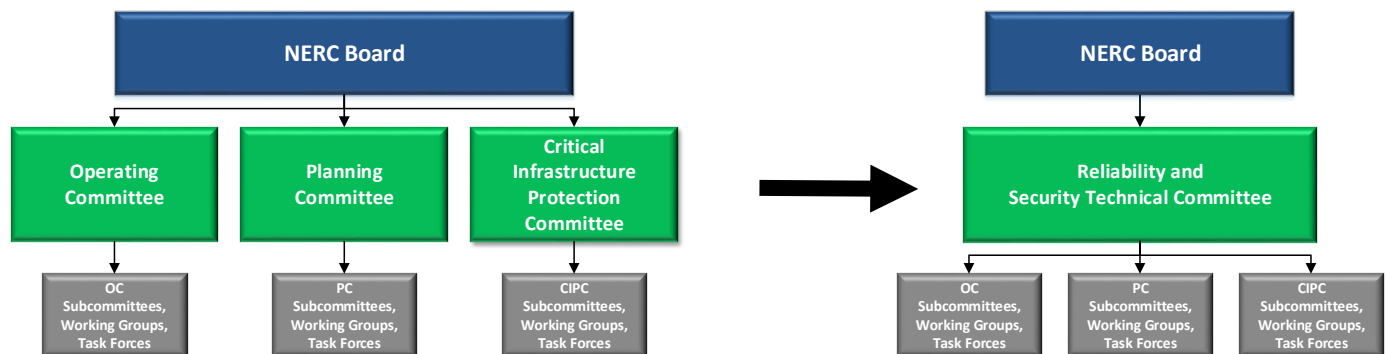
Reliability and Security Technical Committee Participation Model Options

The ERO has three general types of participation models in its committees, highlighted below (See Appendix B for more details):

- OC/PC – Sector-based model with 2 members from each of the 12 Sectors plus a chair and vice chair. Also have provisions for Canadian representation.

- CIPC – Regional-based model with three representatives from each Region with expertise in physical security, cyber security, and operations with provisions for Canadian representation as well as certain industry groups.

- RISC – Pool of experts selected based on skills and knowledge criteria

  - Geographic and International diversity

  - Sector, size, and asset (transmission, distribution, load, generation, etc.) diversity;

  - High-level understanding and perspective on reliability risks; and

  - Balanced consideration of these criteria, across the entire membership of the RISC.

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[3] The SET reviewed several options for restructuring the technical committees. The two most viable options include Alternative 1: creating a Reliability Committee with Operating and Planning expertise while CIPC remains as it exists; and Alternative 2 Transform CIPC, OC and PC into a Reliability and Security Technical Committee with subcommittees and a "roster" of technical experts that can be used to establish "problem specific" task forces. This second option was selected by the SET as it encourages the consideration of all aspects of risks to reliability when designing and operating the bulk power system, during normal and emergency conditions, either natural or man-made. This would result in coordinated management of resources for addressing the various aspects of threats to the reliable operation of the bulk power system.

Chapter 4: Compare and Contrast Options 1 and 2

Option 1: Establish an Oversight Committee

The existing NERC technical committee's structure remains unchanged with this option. Option 1 does create formal oversight of the activities of the OC, PC, and CIPC by the SCCG, chartered as the Oversight Committee. The Oversight Committee will be responsible for coordinating development and approving the work plans of the technical committees to assure that there is no redundancy in committee activities. The Oversight Committee, in consultation with NERC management team, will determine when there is a need to form task forces (project teams) to resolve a specific grid reliability issue. To implement Option 1, a charter must be developed for the Oversight Committee that will include membership, responsibilities, deliverables and reporting requirements to the Board.

Option 2: Establish Reliability and Security Technical Committee

This option creates a new formal oversight that combines the experience of all three committees into one. The newly created RSTC will oversee the output of the subcommittees, working groups, and task forces, and report to the Board. Depending on the participation model chosen for the RSTC, this model provides less "silo" impact for issues that overlap in the current model as well as increasing effectiveness by addressing duplication and/or gaps in the current subcommittee structure. During the transition to this new structure, the existing subcommittees, working groups, and task forces will remain until the RSTC has an opportunity to complete its analysis of all ongoing activities and priorities.

Potential Effectiveness and Efficiency Benefits

There are several potential effectiveness and efficiency benefits from Option 2, compared to both the status quo and Option 1. For example, Option 2 provides:

Better functional alignment with the RISC

The RISC is made up of industry advisors that provide leadership/advice on strategic forward-looking risks, prioritize the risks and provide recommendations for risk mitigation. The RISC provides its assessment in a report to the NERC Board every second year. The RISC report is used, among other things, to inform the ERO strategic plan and the annual Business Plan and Budget.

The main RISC-related function as it relates to the RSTC will be, in conjunction with NERC management, to initiate and oversee the development of technical analyses and products to better understand and mitigate the priority risks identified in the RISC report, monitor the effectiveness of mitigation activities, and identify emerging risks from measuring system performance.

The graphic below shows the relationship between the RISC, RSTC, and the Board:
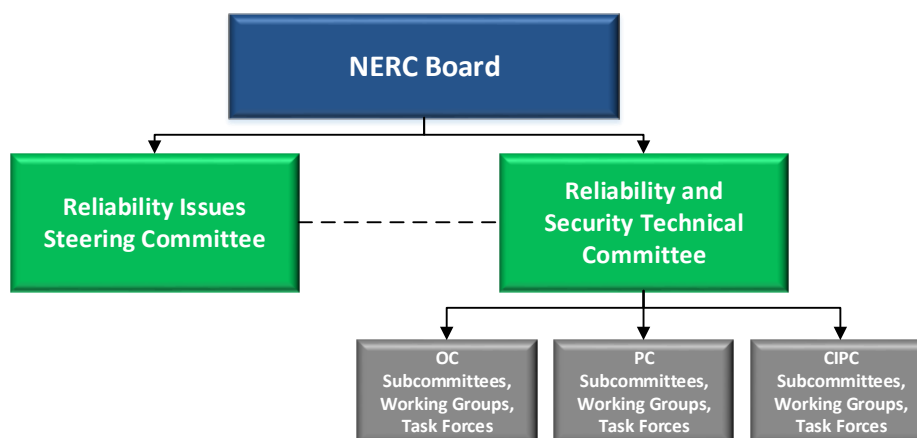
The resulting model supports the ERO and Board with two leadership bodies:

1. RISC: Advising on emerging risks, prioritizing them and identifying impactful mitigation activities.

2. RSTC: Overseeing the implementation of those tactical prioritizations through work plans, similar to a project management office, as well as advising on the reliability and security of the BPS through reliability assessments and performance analysis to identify and address any unexpected new and emerging risks.

Below provides further granularity on the roles of RISC and the proposed RSTC.

Reliability Issues Steering Committee Charter
Purpose
The Reliability Issues Steering Committee (RISC or Committee) is a committee that triages and provides front-end, high-level leadership for issues of strategic importance to BPS reliability and security and offers high-level stakeholder leadership engagement and input on issues that impact BPS reliability.

RISC advises the Board, NERC standing committees, NERC staff, regulators, Regional Entities, and industry stakeholders to establish a common understanding of the scope, priority, and goals for the development of solutions to address these issues, including the use of solutions other than the development of new or revised Reliability Standards. In doing so, the RISC provides a framework for steering, developing, formalizing, and organizing recommendations to help NERC and the industry effectively focus their resources on the critical issues needed to best improve the reliability and security of the BPS.

Reporting
The RISC reports to the Board.

Functions
The RISC performs two primary functions for the Board.

1. The first function of the RISC is to evaluate emerging BPS reliability issues and risks. The RISC provides strategic leadership and advice to the Board and others to triage key reliability risks and propose solutions to manage those risks.

2. Second, the RISC provides a biennial analysis of risks to the BPS and produces a relative prioritization of the risks and mitigation activities. The prioritization is designed to advise:

   a. Annual ERO action planning, resource allocation, budgeting and strategic planning processes; and

   b. Standing committee planning, including the development of the Reliability Standards Development Plan.

In addition, the RISC performs such other functions that may, from time to time, be delegated or assigned by the Board.

Reliability and Security Technical Committee
Purpose
Similar to the RISC, RSTC will be an advisory committee that, in conjunction with NERC management, initiates and oversees the development of technical assessments and analysis that i) support the analytical assessment function of the ERO; and ii) develop and provide products that can be used by industry to mitigate risks to the BPS.

Reporting
The RSTC will report to the Board.

Functions

To provide technical advice, project management, and subject matter expertise support to each of the NERC program areas, and to serve as a forum to integrate the outputs of each ERO program area, including:

1. **Reliability Assessments** – Review reliability assessments, assure technical accuracy and completeness of results, and endorse approval of assessments to NERC's Board.

2. **Cyber and Physical Security** – Review and assess the horizon for emerging cyber and physical risks. Develop mitigations, including guidelines, Alerts, webinars, whitepapers and standard enhancements.

3. **Emerging Issues and Reliability Concerns** – Identify emerging issues within the electric industry, address issues in reliability and security assessments, and address other issues as assigned by the Board.

4. **Operational Analyses** – Develop operational analyses, model validation, and key reliability areas, resulting in technically accurate and comprehensive reports addressing these areas (i.e., frequency response, intermittent generation, cyber and physical security, distributed energy resources (DER), etc.). Provide recommendations that facilitate addressing the reliability and security risks identified. Provide oversight, guidance, and direction to address key planning related issues.

5. **Standards Input** – Provide technical expertise and feedback to Standard Authorization Requests (SARs) that have reliability- or security-related impacts, provide foundational technical efforts that support the key reliability operational, planning and security related standards development, coordinate effectively with the Standards Committee to maintain alignment on priorities, develop and vet planning, operational and security guidelines that align with approved standards with industry stakeholders, and provide reliability risk information for prioritization of SARs and new or enhanced Reliability Standards.

6. **Metrics** – Provide direction, technical oversight, and feedback on the NERC Adequate Level of Reliability (ALR) metrics. Pioneer development of security metrics

7. **Event Analysis** – Review all event reports to determine lessons learned and good industry practices and promote the dissemination of information to the industry to enhance reliability.

8. **NERC Alerts** – Participate in the review and development of requests for industry actions and informational responses.

9. **Reliability and Security Guidelines, Technical Reports, White Papers, Implementation Guidance, and other reference documents** – Develop reliability guidelines, white papers, technical reports and reference documents to address emerging issues and industry concerns related to system operations.

10. **System Operator Training** – Provide necessary support and guidance to facilitate System Operator training.[4]

11. **Additional Activities and Outreach** – Opportunities to share lessons learned, information sharing by U.S. DOE National Labs, technical reports, security briefings, cyber reports and training, etc. will be broadened so more stakeholders can participate.

Increasing effectiveness and efficiency by providing end-to-end solutions

It is envisaged that the RSTC would provide direction to the existing subgroups of the current PC, OC, and CIPC that produce recurring deliverables that support ERO analytical work. As well, when emerging risks are identified, the RSTC would determine the best way to get a better understanding of the technical aspects of the issues and the potential mitigating strategies. It is envisaged that it would approach this task through the creation of issue-specific task forces that would have well-defined mandates and deliverables. A single issue-specific task force could be structured to examine and report on planning, operational and security aspects of a given issue. Examples of past

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[4] Currently the Personnel Subcommittee (PS), reports to the NERC Operating Committee and is the governing body of the NERC Continuing Education Program that oversees development and implementation of the Continuing Education (CE) Program requirements. The PS develops and updates, as necessary, the CE Program Manual. The RSTC should consider moving some functions from the PS to the NERC Personnel Certification Governance Committee. This transition would require a changes in NERC's Rules of Procedure.

issues that the RSTC might address in a more holistic way include essential reliability services (ERS), DER and inverter-based resources. Future issues may include, for example, storage.

Enhanced contact between the RSTC, the MRC, and the NERC Board
By replacing the three existing technical committees with one RSTC, enhanced contact will result between the new RSTC and the Board. More time at Board and MRC meetings is envisaged to hear a report from the RSTC and tee up specific items for discussion. As well, it is currently a challenge for Trustees to attend the OC, PC, and CIPC meetings as they occur concurrently.

General efficiencies
The integration of the existing OC, PC, and CIPC provides efficiencies in terms of both NERC and industry support, although these are difficult to quantify at this time. For example, rather than nearly 120 members participating in the three existing technical committees, approximately 40 members will participate in the RSTC. RSTC meetings will continue to be conducted as open meetings, similar to the existing technical committee meetings

Recommended Participation Model:
The SET is recommending a participation model for Option 2 which will be a hybrid of the existing models used in other committees. The number of RSTC members and qualifications are based on:

- Sector representation from Sectors 1 - 10 and 12 as discussed in Chapter 5

- Skills and knowledge criteria similar to the RISC

- Provisions for Canadian representation

Chapter 5: Membership

RSTC membership will be a hybrid model composed of Sector representatives, At Large representatives, and non-voting members. Sector representation will be two members each for Sectors 1 – 10 and 12.[5] Overall selection of members will consider RE area and Interconnection diversity, subject matter expertise (Planning, Operating, or Security) organizational type (Cooperatives, Investor-Owned Utilities, Public Power, Power Marketing Agencies, etc.) and country (Canada, Mexico, and U.S.). At Large representation will be used to ensure a complete overall balanced representation and expertise in the RSTC.

Table 5.1: Summary of the SET's Proposed Membership Model	
Name	**Voting Members**
Sectors 1-10 and 12	22
At Large	10
Chair and Vice Chair	2
Total	**34**

Table 5.2: Additional Non-Voting Members[6]	
Non-Voting Member	**Number of Members**
NERC Secretary	1
United States Federal Government	2
Canadian Federal Government	1
Provincial Government	1
Total	**5**

Membership Qualifications

The RSTC Charter will set forth that individuals qualified to serve on the RSTC will include senior management and technical level (e.g., Manager, Director, Vice President, Principal, Lead Engineer) industry experts who have familiarity, knowledge, and experience in Planning, Operating, and/or Security. In addition, the RSTC members are expected to have an understanding of Project Management culture and methods for delivering work products within scope, schedule, cost, and quality. The RSTC members will collaborate to provide oversight of multi-disciplinary and cross-organizational initiatives to ensure that the work products achieve the ERO's and RISC's strategic objectives, enhance NERC's critical functions, and collectively address planning, operating and security objectives. The RSTC will primarily oversee development and implementation of risk mitigating technical solutions through the work of the subcommittees, working groups, and task forces.

Expectations

Members of the RSTC are expected to support NERC's reliability mission;[7] execute the policies, directives, and assignments of the Board; and advise the Board on the technical perspectives of risk mitigating solutions for: operating reliability matters; transmission planning matters; reliability and resource adequacy matters; physical and cyber security matters.[8] Additionally, the RSTC will be responsible for ensuring the work of its subcommittees, working groups and task forces is completed in coordination with the efforts of the CCC, SC, PCGC, and the RISC.

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[5] With the ERO model maturing and Regional Entities an integral part of the ERO, Regional Entities (Sector 11) will not be directly represented on the stakeholder RSTC. Sector 11 representatives will participate as RSTC non-voting participants.
[6] Mexican Government representation considered once they have joined NERC.
[7] NERC's mission is to "assure effective and efficient reduction of risks to the reliability and security of the bulk power system."
[8] Liaise with the Electricity Information Sharing and Analysis Center (E-ISAC).

Membership Selection (Initial Seating)

Nominations for initial terms for Sector representatives will be called for by NERC after Board approval in November 2019. The Sector nomination period will be November 6-December 6, 2019 and two members for each Sector will be sought. The Sector representation process will follow the current OC and PC election process. If no more than two nominations are received for a particular Sector, the two nominees will be deemed to have been elected for those positions. In the event that there are more than two nominees in any Sector, there will be a Sector election process to determine the two representatives for that Sector. Any unfilled Sector positions on the initial seating will convert to At Large seats to be filled through the Nominating Subcommittee (see below).

A nomination period for At Large nominees will occur after the Sector nomination period. This will be conducted December 9, 2019-January 3, 2020. Initial Seating of At Large representatives will be selected (for approval by the Board) by a Nominating Subcommittee consisting of the NERC Board Vice Chair, NERC Chief Executive Officer, MRC Vice Chair, and the RSTC's Chair and Vice Chair. Representatives will be selected based on the qualifications established in Membership and Membership Qualifications sections above. The qualifications and skills of the Sector representatives will be reviewed and At Large representatives will be selected to ensure broad skills, knowledge and geographic diversity within the RSTC. In addition to Sector seat diversity, membership on the RSTC will consider the following criteria in the selection of At Large representatives:

- Geographic and International (Canadian/Mexican) diversity, including a goal of having representatives based in each RE's area and each Interconnection.

- Sector, size, and asset (transmission, distribution, load, generation, etc.) diversity; and,

- Subject matter expertise in Operations, Planning, and/or Security including a reasonable balance of expertise among these three areas.

The SET did not include the existing Sector 11 (Regional Entity) representation in the proposed model which reflects the maturation of the ERO enterprise and coordination within and between REs.

To ensure adequate Canadian representation, the membership to the committee may be increased so that the number of Canadian voting members is equal to the percentage of the net energy for load (NEL) of Canada to the total NEL of the United States and Canada, times the total number of voting members on the committee, rounded to the next whole number.

Membership Selection (On-Going Seating)

The RSTC must present all new members for approval by the NERC Board at its annual February meeting.

Nominations for Sector members (Sectors 1-10 and 12) will be called for annually under a process that is open, inclusive, and fair, similar to the annual nomination process of the existing OC and PC. Sector and At Large nominees may not represent more than one Sector at any one time and no single organization, including its affiliates, may have more than one member on the RSTC. RE employees are not eligible to be At Large representatives.

The SET did not include the existing Sector 11 (Regional Entity) representation in the proposed model which reflects the maturation of the ERO enterprise and coordination within and between REs.

To ensure adequate Canadian representation, the membership to the committee may be increased so that the number of Canadian voting members is equal to the percentage of the net energy for load (NEL) of Canada to the total NEL of the United States and Canada, times the total number of voting members on the committee, rounded to the next whole number.

The Nominating Subcommittee (NS),[9] which is appointed by the RSTC every two years, is responsible for the selection of At-Large representatives.

The NS will identify (using an open nomination period), qualify, and recommend individuals to fill At Large representative vacancies on the committee or to serve as the chair or vice chair of the committee. Individuals recommended by the NS for appointment to the committee must be approved by the Board. Representatives will be selected based on the qualifications established in Membership and Membership Qualifications sections above. In addition to Sector seat diversity, membership on the RSTC will consider the following criteria in the selection of At Large representatives:

- Geographic and International (Canadian/Mexican) diversity, including a goal of having representatives based in each RE's area and each Interconnection.

- Sector, size, and asset (transmission, distribution, load, generation, etc.) diversity; and,

- Subject matter expertise in Operations, Planning, and/or Security including a reasonable balance of expertise among these three areas.

See Appendix C for Sector and At Large definitions and descriptions.

Sectors will hold elections to fill expiring vacant Sector positions. Vacant At Large positions will be selected by the NS.

Interim Sector vacancies will be filled through a special election through an open nomination process and will remain vacant if not filled. Interim At-large vacancies will be filled by the NS through an open nomination process and will remain vacant if not filled.

Board Appointment and Membership Terms (Initial Terms)

Members will be appointed to the RSTC by the Board and serve on the RSTC at the pleasure of the Board. Member terms will initially consist of approximately half of the terms as three-year terms and the remaining half being two-year terms for both Sector and At Large representatives. This will promote continuity as the RSTC evolves. Sector and At Large nominees will nominate for either a three-year or two-year term. The NS will resolve any conflicts in terms to ensure staggered terms.

Board Appointment and Membership Terms (On-going Terms)

Members will be appointed to the RSTC by the Board and serve on the RSTC at the pleasure of the Board. Member terms are two years (with half of the terms ending in odd years and the remaining half ending in even years for both Sector and At Large representatives).

Officers

Officers will serve two-year terms and shall be selected as follows:

- The NS will develop a slate of candidates for the chair and vice chair and are elected by the full RSTC. The chair and vice chair will be confirmed by the Board.

- The Chair and Vice Chair may be a Sector or At Large member of the RSTC.

- The chair and vice chair shall not be from the same Sector.

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[9] The on-going RSTC Nominating Subcommittee will be appointed from the RSTC membership. The detailed information is contained in the proposed RSTC Charter.

- The chair and vice chair, upon assuming such positions, shall cease to act as representatives of the Sectors that elected them as representatives to the RSTC and shall thereafter be responsible for acting in the best interests of the members as a whole.

- Unless an exception is approved by the Board, no individual may serve more than one term as vice chair and one term as chair.

Chapter 6: Executive Committee

Authorization

The Executive Committee (EC) of the RSTC will be authorized by the RSTC to act on its behalf between regular meetings on matters where urgent actions are crucial and full RSTC discussions are not practical. Ultimate RSTC responsibility will reside with its full membership whose decisions cannot be overturned by the EC, and which retains the authority to ratify, modify, or annul EC actions.

Membership

The full RSTC will select an EC of six members, with consideration of Sectors, Regions, Interconnections, and other representation factors, as follows:

1. Chair

2. Vice-chair

3. Four RSTC voting members from different Sectors selected by the RSTC chair and vice-chair with subject matter expertise in Operations, Planning, and/or Security including a reasonable balance of expertise between the three areas.

Chapter 7: Industry Review and Comment Timeline

The SET presented the two options described in Chapter 3 to the MRC at its May 2019 meeting and requested feedback on these options. In light of that feedback and further consideration, the SET decided unanimously that Option 2 was preferable to Option 1 and has worked since that time to refine the details of the proposed RSTC for stakeholder feedback and further MRC and Board consideration.

The SET conducted an industry comment period from July 12-August 15, 2019 and conducted an industry webinar on August 8, 2019. There was an MRC Informational Session webinar on July 19, 2019 to inform industry of the SET's recommendations and to define the Policy Input questions regarding the proposal. There was also a Policy Input period July 11-31, 2019. The proposed recommendation was presented to the MRC for policy input at their August 14, 2019 meeting. The SET made revisions to the proposal based on MRC and Industry feedback. The revisions include:

- The SET Nominating Committee will recommend initial chair and vice chair for appointment by the Board (November meeting). Both are for two-year terms.

- The SET changed the Participation Model to two members per Sector. Sectors will elect or appoint their representatives. For the annual election, any unfilled seats will become At Large until the term expires.

- NERC will then hold Sector elections if needed followed by At Large nominating process with Nominating Subcomittee as shown in proposal document (above).

- Board to approve slate of RSTC members February 2020.

- Initial terms for Sector and At Large members will be approximately half of the members for two-year terms and half for a three-year term.

- After initial terms, all terms are two-year staggered terms with approximately half of Sector and At Large terms expiring annually.

- The EC will be elected by the RSTC membership at the first RSTC meeting.

- The SET clarified the goal of having representatives based in each RE's area and each Interconnection.

- The on-going RSTC Nominating Subcommittee will be appointed from the RSTC membership.

- The SET developed a transition plan (Appendix D) to extend the implementation period of the RSTC. The OC, PC, and CIPC will meet in March 2020 with the RSTC having an administrative meeting in March. The full RSTC will meet in June 2020.

- The SET also removed the requirement for executive level experience for RSTC members.

The final recommendation will be presented to the Board at its November 5, 2019 meeting.

Chapter 8: Elements of a Charter for the Reliability and Security Technical Committee

The SET reviewed existing technical committee charters and scope documents and recommends including the following in the Reliability and Security Technical Committee Charter:

1. Membership
   a. Representation
   b. Selection
   c. Terms
   d. Vacancies
   e. Proxies
2. Meetings
   a. Frequency
   b. Quorum
   c. Voting
   d. Confidential sessions
3. Officers
   a. Terms
   b. Conditions
   c. Selections
4. Voting
5. Subcommittees, Working Groups, Task Forces
   a. Formation and Cessation
   b. Work Plan Approval Process

Appendix A: Stakeholder Engagement Team Roster

Table A.1: Stakeholder Engagement Team Roster	
Name	**Company**
Leadership	
Jennifer Sterling (MRC Vice Chair)	Exelon
Mark Lauby	NERC
Team Members	
Ken DeFontes	NERC Trustee
Fred Gorbet	NERC Trustee
Greg Ford (MRC Chair)	Georgia System Operations Corporation
Lloyd Linke (OC Chair)	Western Area Power Administration
Dave Zwergel (OC Vice Chair)	MISO
Brian Evans-Mongeon (PC Chair)	Utility Services, Inc.
Marc Child (CIPC Chair)	Great River Energy
Jennifer Flandermeyer (CCC Chair)	Kansas City Power & Light
Jason Marshall	Wabash Valley Power Alliance
Patti Metro	NRECA
David Short	IESO
Martin Sidor	NRG Energy, Inc.
Scott Tomashefsky (CCC Vice Chair)	Northern California Power Agency
Jeffrey Cook	Bonneville Power Association
Michael Desselle	Southwest Power Pool
Additional Participants	
Edison Elizeh	Bonneville Power Association
Gaurav Karandikar	SERC
Phil Fedora	NPCC
David Zwergel	MISO
Jim Albright	TexasRE
Dave Godfrey	WECC
Tim Ponsetti	SERC
Melinda Montgomery	SERC
Maggie Peacock	SERC
John Odom	FRCC
Eric Senkowicz	FRCC
Jeff Craigo	RF
Ray Palmieri	RF
NERC Staff	
Sam Chanoski	Tom Hofstetter
John Moura	Nina Jenkins-Johnston
Stephen Crutchfield	Sandy Shiflett
Mark Olson	

Appendix B: Existing Participation Models

	RISC	CIPC	OC/PC
	Pool of Experts	**Regional Entity Representation**	**Balanced Sectors**
Member Composition	**6 – Stakeholder based** • 4 – MRC • 2 – At-Large **5 – Committee based** • 1 – from each of the standing committees (OC/PC/CIPC/CCC/SC)	**32 Voting Members** • 24 – registered entities (3 from each Regional Entity) • 2 – Canada • 2 – Policy Experts • 2 – APPA • 2 – NRECA	**29 Voting Members** • 27 – Sectors 1-12[10] • 2 – Chair and Vice Chair
Selecting Body	**Stakeholder Based** Nominating Committee (chaired by the MRC Vice-Chair) presents a recommended slate of candidates to the Board. **Committee Based** Board appointed	Self-nomination from groups identified above Subject to removal by Executive Committee	Candidates are elected by the registered NERC Members in Sectors 1-10 and 12. Members in Sector 11 are appointed by the Regional Entity.
Criteria	Geographic and International diversity, such that Eastern, Western, and Texas Interconnections, along with Canada are represented on the RISC; Sector, size, and asset (transmission, distribution, load, generation, etc.) diversity; High-level understanding and perspective on reliability risks; Experience in a leadership role or background in an executive-level position is strongly preferred; and Balanced consideration of these criteria, across the entire membership of the RISC.	Each RE's voting members must collectively have expertise in physical security, cyber security and operations	Investor-Owned Utility State/Municipality Cooperative Utility Federal or Provincial Utility / Federal Power Marketing Administration Transmission Dependent Utility Merchant Electricity Generator Electricity Marketer Large End-User Electricity Customer Small End-User Electricity Customer Independent System Operator / Regional Transmission Organization

Table B.1: Existing Participation Models

[10] Sectors 1-3, 5-9, and 11-12 have two voting members each. Sector 4 has four voting members and Sector 10 has three voting members.

Table B.1: Existing Participation Models			
	RISC	**CIPC**	**OC/PC**
	Pool of Experts	**Regional Entity Representation**	**Balanced Sectors**
			Regional Entity State Government Officers
Non-Voting Members		Identified list of organizations	Government representatives (including Canada) Secretary Chair and Vice Chair of the subcommittees

Appendix C: Reliability and Security Technical Committee Member Definitions

Table C.1: RSTC Members		
Name	**Definition**	**Members**
Voting Members		
1. Investor-Owned Utility	This Sector includes any investor-owned entity with substantial business interest in ownership and/or operation in any of the asset categories of generation, transmission, or distribution. This Sector also includes organizations that represent the interests of such entities.	2
2. State/Municipal Utility	This Sector includes any entity owned by or subject to the governmental authority of a state or municipality, that is engaged in the generation, delivery, and/or sale of electric power to end-use customers primarily within the political boundaries of the state or municipality; and any entity, whose members are municipalities, formed under state law for the purpose of generating, transmitting, or purchasing electricity for sale at wholesale to their members. This Sector also includes organizations that represent the interests of such entities.	2
3. Cooperative Utility	This Sector includes any non-governmental entity that is incorporated under the laws of the state in which it operates, is owned by and provides electric service to end-use customers at cost, and is governed by a board of directors that is elected by the membership of the entity; and any non-governmental entity owned by and which provides generation and/or transmission service to such entities. This Sector also includes organizations that represent the interests of such entities.	2
4. Federal or Provincial Utility/Federal Power Marketing Administration	This Sector includes any U.S. federal, Canadian provincial, or Mexican entity that owns and/or operates electric facilities in any of the asset categories of generation, transmission, or distribution; or that functions as a power marketer or power marketing administrator. This Sector also includes organizations that represent the interests of such entities.	2
5. Transmission dependent Utility	This Sector includes any entity with a regulatory, contractual, or other legal obligation to serve wholesale aggregators or customers or end-use customers and that depends primarily on the transmission systems of third parties to provide this service. This Sector also includes organizations that represent the interests of such entities.	2
6. Merchant Electricity Generator	This Sector includes any entity that owns or operates an electricity generating facility that is not included in an investor-owned utility's rate base and that does not otherwise fall within any of Sectors (i) through (v). This Sector includes but is not limited to cogenerators, small power producers, and all other non-utility electricity producers such as exempt wholesale generators who sell electricity at wholesale. This Sector also includes organizations that represent the interests of such entities.	2
7. Electricity Marketer	This Sector includes any entity that is engaged in the activity of buying and selling of wholesale electric power in North America on a physical	2

Table C.1: RSTC Members		
Name	**Definition**	**Members**
	or financial basis. This Sector also includes organizations that represent the interests of such entities.	
8. Large End-User Electricity Customer	This Sector includes any entity in North America with at least one service delivery taken at 50 kV or higher (radial supply or facilities dedicated to serve customers) that is not purchased for resale; and any single end-use customer with an average aggregated service load (not purchased for resale) of at least 50,000 MWh annually, excluding cogeneration or other back feed to the serving utility. This Sector also includes organizations that represent the interests of such entities.	2
9. Small End User	This Sector includes any person or entity within North America that takes service below 50 kV; and any single end- use customer with an average aggregated service load (not purchased for resale) of less than 50,000 MWh annually, excluding cogeneration or other back feed to the serving utility. This Sector also includes organizations (including state consumer advocates) that represent the interests of such entities	2
10. Independent System Operator/Regional Transmission Organization	This Sector includes any entity authorized by the Commission to function as an independent transmission system operator, a Regional transmission organization, or a similar organization; comparable entities in Canada and Mexico; and the Electric Reliability Council of Texas or its successor. This Sector also includes organizations that represent the interests of such entities.	2
12. State Government	This Sector includes any state government department or agency in the United States having a regulatory and/or policy interest in the Bulk Electric System (BES).	2
Officers	Chair and Vice Chair	2
At Large	Entities that collectively meet the following general criteria for balanced representation: (i) geographic diversity from all U.S. interconnections and ERO Enterprise Regional Entities, (ii) high-level understanding and perspective on reliability risks based on experience at an organization in the electricity sector, (iii) operations, planning and/or cybersecurity experience and expertise from an organization in the electricity sector. Excludes Regional Entity staff.	10
Non-Voting Members		
Government Representatives	This Sector includes any federal, state, or provincial government department or agency in North America having a regulatory and/or policy interest in wholesale electricity. Entities with regulatory oversight over the Corporation or any Regional Entity, including U.S., Canadian, and Mexican federal agencies and any provincial entity in Canada having statutory oversight over the Corporation or a Regional Entity with respect to the approval and/or enforcement of Reliability Standards, may be non-voting members of this Sector.	
	United States Federal Government	2
	Canadian Federal Government	1
	Provincial Government	1
Secretary	The committee secretary is a NERC staff member appointed by NERC management and will be seated at the committee table	1

Appendix D: Reliability and Security Technical Committee Timeline

The SET developed a timeline to facilitate the transition from the existing committee structure to the RSTC. The NERC Board has requested that the SET provide a recommendation for the initial Chair and Vice Chair to serve two-year terms. To that end, NERC opened a nomination period from September 9-23, 2019 for the officer positions. The SET reviewed the nominations and selected a slate for recommendation to the Board for appointment at the November 5, 2019 Board meeting. The transition timeline is shown below:

- September 30, 2019 (8:00 – 5:00) – SET meeting in Chicago; recommended slate for Chair and Vice Chair and finalized charter.

- October 10, 2019 – MRC informational Session

- October 18, 2019 – Industry Webinar (11:00 am – 12:00 pm)

- November 5, 2019 – Board considers Proposal, Charter and Transition Plan; if approved, appoints Chair and Vice Chair.

- November 6, 2019 – Open Sector nomination period

- December 6, 2019 – Sector nomination period ends. NERC Staff will conduct Sector elections, if necessary, by December20, 2019.

- December 9, 2019–January 3, 2020 – Open At Large nomination period. NERC Staff/SET analyzes Sector reps for gaps to be filled by At Large members.

- January 6-15, 2020 – Nominating Subcomittee to develop slate of At Large nominees for presentation to the Board.

- February 6, 2020 – Board appoints RSTC members (Sector and At Large). Terms will expire in June of alternating years following the initial terms with the initial term being two or three years, and thereafter 2 year terms. RSTC members will be notified of their appointment by the Board.

- February 7–May 29, 2020 – RSTC develops transition plan and work plans for RSTC and subcommittees. Coordinate with committee and subcommittee leadership to ensure work plans are in place and on schedule.

- March 3-4, 2020 – Hold OC, PC, and CIPC meetings as scheduled. RSTC members will be encouraged to attend one or more sessions and will meet on March 4, 2020 for the inaugural RSTC meeting to establish the Nominating Subcommittee, Executive Committee, and perform other administrative items. RSTC will be operational to ensure smooth transition.

- June 2020 – OC, PC, and CIPC will meet for final work plan approvals and to complete any other approvals. These committees will be disbanded after this session. RSTC will hold initial regular meeting with subcommittee reports and other agenda items.