NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

September 30, 2020

Ms. Jennifer Sterling, Chair
NERC Member Representatives Committee

Dear Jennifer:

I invite the Member Representatives Committee (MRC) to provide policy input on two matters of particular interest to the NERC Board of Trustees (Board) as it prepares for its November 4-5, 2020, meetings, which will occur via teleconference due to the coronavirus (COVID-19) pandemic. In addition, policy input is requested on any items on the preliminary agendas for the quarterly Board, Board Committees, and MRC meetings. The preliminary agendas are included in the MRC Informational Session agenda package (see Item 2) and are attached hereto (**Attachment A**). The MRC's November agenda includes an opportunity for MRC members to provide additional input to the Board on the final agenda and materials. **As a reminder, please include a summary of your comments in your response (i.e., a bulleted list of key points) for NERC to compile into a single summary document to be provided to the Board for reference, together with the full set of comments.**

Framework to Address Known and Emerging Reliability and Security Risks
The ERO's mission requires establishing a consistent framework to identify, prioritize, as well as address known and emerging reliability and security risks. The *Framework to Address Known and Emerging Reliability and Security Risks* (Whitepaper) (**Attachment B**), which has been reviewed by the Reliability and Security Technical Committee (RSTC) and Reliability Issues Steering Committee (RISC), identifies the policies, procedures, and programs developed by the ERO Enterprise to support its mission. They are incorporated into an iterative six-step risk management framework, along with an operational model between the RISC and RSTC. The the next step is to classify mitigation of risks to Bulk Electric System (BES) reliability and security according to the likelihood of the risk occurring, and the severity from its impact. The ERO's policies, procedures, and programs are mapped to target risk mitigation against severity and likelihood. Further, the Whitepaper reviews how resilience is an important component of reliability risk management. Finally, the whitepaper considers the application of ERO policies, procedures, and programs, within the time required to apply the mitigation against the risk's likelihood and severity.

NERC plans to request Board endorsement of the Whitepaper at the Board's open conference call in December. **Before considering the Whitepaper for endorsement, the Board requests MRC policy input on the following:**

1. **Are there any ERO policies, procedures, and/or programs that are missing or need amplification?**

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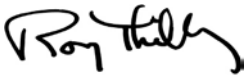
2. **Does the iterative six-step risk management framework provide a sound basis for risk identification and mitigation?**
3. **Are there any significant steps missing from the iterative risk management framework? If so, what steps do you propose adding?**
4. **Are there any missing key elements in the RSTC/RISC triage approach? If so, what key elements do you propose adding?**
5. **Is the multi-dimensional model shown in Figure 4 of the Whitepaper complete?**

Top Priorities for NERC Over the Next Three Years

NERC regularly reviews its strategic plan and evaluates its work objectives. It is important that industry stakeholders provide input on key priorities for the Electric Reliability Organization to ensure that NERC is focusing on the most important activities. **Therefore, the Board requests MRC policy input on what the three most important reliability and security matters are that you believe NERC should address over the next three years.**

Written comments in response to the input requested above, the preliminary agenda topics, and on other matters that you wish to bring to the Board's attention are due by **October 21, 2020,** to Kristin Iwanechko, MRC Secretary (Kristin.Iwanechko@nerc.net). The formal agenda packages for the Board, Board Committees, and MRC meetings will be available on October 22, 2020, and the presentations will be available on October 29, 2020. The Board looks forward to your input and discussion of these matters during the November 2020 meetings.

Thank You,



Roy Thilly, Chair
NERC Board of Trustees

cc: NERC Board of Trustees
Member Representatives Committee

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Member Representatives Committee (MRC)

Pre-Meeting and Informational Webinar

October 7, 2020

RELIABILITY | RESILIENCE | SECURITY




Objectives – Pre-Meeting and Informational Session

- Review schedule and preliminary agenda topics for:
  - November 4 Board Committee (open) meetings
  - November 5 MRC meeting
  - November 5 Board of Trustees meeting
- Review policy input letter topics
- Receive updates on emerging and informational issues

Schedule of Quarterly NERC Conference Calls

Wednesday, November 4, 2020	
11:00 a.m.-11:45 a.m.	Finance and Audit Committee Meeting —**Open**
12:15-1:00 p.m.	Corporate Governance and Human Resources Committee Meeting—**Open**
1:30-2:30 p.m.	Compliance Committee Meeting—**Open**
3:00-4:30 p.m.	Technology and Security Committee Meeting—**Open**
Thursday, November 5, 2020	
11:00 a.m.-1:00 p.m.	Member Representatives Committee Meeting—**Open**
2:00 p.m.-4:00 p.m.	Board of Trustees Meeting—**Open**

Finance and Audit Committee
11:00 a.m. – 11:45 a.m., November 4

- Third Quarter Statement of Activities
  - NERC Summary of Results as of September 30, 2020
  - Combined ERO Enterprise Summary of Results as of September 30, 2020
  - Regional Entity Variance Reports as of September 30, 2020
- 2021 Business Plan and Budget Status Update
- Review 2022 Business Plan and Budget Schedule

Corporate Governance and Human Resources Committee
12:15 p.m. – 1:00 p.m., November 4

- 2020 ERO Work Plan Priorities Update
- Approve Board Self-Assessment and MRC Assessment of Board of Trustees Effectiveness Survey
- Human Resources and Staffing Update

Compliance Committee
1:30 p.m. – 2:30 p.m., November 4

- Follow-up Regarding Action Items from Prior Meeting
- 2021 Compliance Monitoring and Enforcement Program Implementation Plan Update
- Facility Ratings Activities Update
- Compliance Monitoring and Enforcement Program Quarterly Report

Technology and Security Committee
3:00 p.m. – 4:30 p.m., November 4

- E-ISAC Operations Update
- ERO Enterprise Business Technology Projects Update
- ERO Enterprise Align Project Update
- ERO Enterprise Secure Evidence Locker Update

Member Representatives Committee
11:00 a.m. - 1:00 p.m., November 5

- Election of MRC Officers for 2021
- General Updates and Reports
  - Board of Trustees Nominating Committee Update
  - Business Plan and Budget Input Group Update
  - Regulatory Update
- Policy and Discussion Items
  - Approve MRC Governance Guidelines
  - Responses to the Board's Request for Policy Input
    - Framework to Address Known and Emerging Reliability and Security Risks
    - Top Priorities for NERC Over the Next Three Years
  - Additional Policy Discussion of Key Items from Board Committee Meetings
  - MRC Input and Advice on Board Agenda Items and Accompanying Materials

Member Representatives Committee
11:00 a.m. - 1:00 p.m., November 5

- Technical Updates
  - Update on FERC Reliability Matters
  - Hurricane Laura Restoration Efforts
  - Supply Chain NERC Alert Update

Board of Trustees
2:00 p.m. - 4:00 p.m., November 5

- Report on October 30, 2020 NERC Trustees and Regional Entity Board Officers Annual Meeting and Board of Trustees Closed Meeting
- Board Committee Reports
  - Accept Third Quarter Unaudited Financial Statements
- Standards Quarterly Report and Actions
  - Adopt Project 2019-03 Cyber Security Supply Chain Risks
  - Adopt Project 2015-09 Establish and Communicate System Operating Limits
  - Approve 2021-2023 Reliability Standards Development Plan

Board of Trustees
2:00 p.m. - 4:00 p.m., November 5

- Other Matters and Reports
  - Discuss Policy Input and Member Representatives Committee Meeting
  - Approve 2021 ERO Enterprise Work Plan Priorities
  - Cold Weather Preparedness Update
  - 2020/21 Winter Reliability Assessment Preview
  - 2020 Long-Term Reliability Assessment Preview
  - Reliability and Security Technical Committee and Reliability Issues Steering Committee Joint Presentation
- Committee, Forum, and Group Reports

October 7 – MRC Informational Session

- Schedule and Preliminary Agenda Topics for the August 2020 Board, Board Committees, and MRC Meetings
- Overview of Policy Input Letter
  - Framework to Address Known and Emerging Reliability and Security Risks
  - Top Priorities for NERC Over the Next Three Years
- 2021 ERO Enterprise Work Plan Priorities

Upcoming Dates

- **September 30:** Policy input letter issued
- **October 21:** Written comments due on policy input topics and preliminary agenda topics
- **October 22:** Board and MRC agenda packages and policy input letter comments posted
- **October 29:** Board and MRC presentations posted

Questions and Answers

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Framework to Address Known and Emerging Reliability and Security Risks

September 2020

This document outlines a risk framework for the ERO and details how such a framework provides an important extension of the ERO's core activities. The ERO mission[1] requires establishing a consistent framework to identify, prioritize and address known and emerging reliability and security risks. To support its mission the ERO has developed policies, procedures and programs which are identified and briefly described in Section I. These policies, procedures and programs have been incorporated into an iterative six-step risk management framework outlined in Section II. Mitigation of risks to Bulk Electric System (BES) reliability can be classified according to the likelihood of the risk occurring and the severity of its impact. Section III addresses how the ERO's policies, procedures and programs identified in Section II map into the risk likelihood and severity space**.** Resilience is an important component of reliability risk management and is discussed in Section IV. Section V cover the application of ERO Policies, Procedures and Programs, within time required to apply the mitigation and the likelihood and severity.

I. ERO Policies, Procedures and Programs

The ERO's mission ultimately exists to serve the public interest, and it must serve that interest by developing and using the ERO Policies, Procedures and Programs to monitor and mitigate risks to the BES, balancing their use by considering what is possible against what is reasonable and necessary. Further, ensuring reliability and security also require improving the resilience of the BES by building the robustness to withstand unexpected events, supporting controlled degradation when an event is beyond design basis (providing an Adequate Level of Reliability), and supporting restoration following an event.

The ERO identifies risk both in a leading and lagging manner. The ERO scans the horizon for emerging risks such as grid transformation and critical infrastructure interdependencies (leading). At the same time, the ERO is gathering data and information on the performance of the existing bulk power system to uncover unexpected risks such as large quantities of photovoltaic generation ceasing to operate under certain system conditions (lagging). In addition, the ERO annually releases its State of Reliability Report that documents the annual system performance in a comparative fashion. The ERO's Policies, Procedures and Programs are then used to address mitigation of these identified risks.

Five of NERC's most significant reliability risk mitigation activities are Reliability Standards, Assurance and Enforcement activities; Reliability Guidelines; Technical Engagement; Reliability and Risk Assessments; and Alerts:

1. **Reliability Standards, Assurance, and Enforcement** processes are the common way to address reliability and security risks when addressing sustained risks with moderate impacts which are

[1] Electric Reliability Organization (ERO) consists of NERC and the 6 Regional Reliability Organizations. The ERO's mission is to assure the reliability and security of the North American bulk electric system (BES). The ERO is supported by subject matter expertise from the owners and operators of the bulk electric system. In the United States the ERO is authorized the Energy Policy Act of 2003 and overseen by FERC.

likely (e.g., inaccurate planning models), and high impacts, whether likely or unlikely (e.g., vegetation management and geomagnetic disturbances). Standards provide the greatest degree of certainty for risk mitigation. Following NERC and Regional Reliability Standards should not be seen as a burden but rather an outcome of good reliability performance, with that desired outcome on each individual system contributing to the reliability of the entire interconnection, and ultimately, the North American BES.

As a matter of public policy, Reliability Standards should credibly address primary risks that are sustained, high impact and likely. Establishing a baseline of Reliability Standards assures accountability for the public's benefit when minimum expectations of performance or behavior are not met. The public expects a regulator to enforce accountability on at least those actions related to sustained, high impact, and likely risks within its scope of oversight.

A key factor in the success of compliance monitoring and enforcement of mandatory standards rests on a common understanding among industry and the ERO as set forth in the ERO's Compliance Monitoring and Enforcement Program (CMEP) which details how compliance will be monitored and enforced. Implementation Guidance is developed by industry and/or vetted through pre-qualified organizations to show examples of compliant implementations. These vetted examples can then be submitted to the ERO for endorsement, and, if endorsed, the ERO would give the example deference during CMEP activities with consideration of facts and circumstances.

Annual risk elements associated with the Reliability Standards are documented annually in the ERO CMEP Implementation Plan, which provides guidance to industry on North American-wide and regional risks that the ERO's Reliability Assurance and Enforcement staff will be focusing on addressing in the coming year.

2. **Reliability Guidelines** are the common approach to use when addressing moderate impact sustained risks that are unlikely, and low impact sustained risks that are unlikely or likely (such as reduced or lack of equipment maintenance resulting in the loss of an individual element which is a low impact to BPS reliability, while the probability of failure increases over time). Reliability Guidelines are also used for those issues that are or are not in the ERO's jurisdiction, but are practices that improve reliability. Guidelines provide three advantages:

   - Together with a strong minimum baseline fabric of standards, guidelines can be a strong and timely way to address risk.
   - Reliability Guidelines enable the ERO to highlight expectations or priorities on appropriate practices for a given subject area.
   - Reliability Guidelines may also be used to establish performance expectations for emerging risks rather than or prior to codifying those expectations into Reliability Standards.

3. **Technical Engagement** can be used to address sustained risks or one-and-done activities with low impacts, whether likely or unlikely. Activities here include webinars, site visits, presentation and reports, workshops, conferences and technical meetings. This includes not only activities of the ERO, but the ERO supporting industry engagement through the reliability ecosystem, such as the North American Transmission and Generation Forums, professional organizations, researchers, and government. Technical engagement also serves to promote future sustained

risk mitigation and support for using Reliability Guidelines, industry notices, newsletters, bulletins, or Reliability Standards.

4. **Reliability and Risk Assessments** coupled with the biennial report outlining the Reliability Issues Steering Committee's (RISC) findings identifies risks, whether likely or unlikely. Generally, these activities are used to inform and influence policymakers, industry leaders, and the general public about the impact of important public and energy policy issues impacting BPS reliability.

5. **Alerts** are used for sharing information, especially time-sensitive information, to request action or direct action. They can also serve as a more nimble, foundational activity for other ERO Policies, Procedures and Programs. As part of its normal course of business, NERC often either discovers, identifies, or is provided with information that is critical to ensuring the reliability of the bulk power system in North America. In order to effectively disseminate this information, NERC utilizes email-based "alerts" designed to provide concise, actionable information to the electricity industry. As defined in its Rules of Procedure, NERC alerts are divided into three distinct levels, as follows:

   - **Level 1 Industry Advisory**: Purely informational, intended to alert registered entities to issues or potential problems. A response to NERC is not necessary.
   - **Level 2 Recommendation to Industry**: Recommends specific action be taken by registered entities. A response from recipients, as defined in the alert, is required.
   - **Level 3 Essential Action**: Identifies actions deemed to be "essential" to bulk power system reliability and requires NERC Board of Trustees' approval prior to issuance. Like recommendations, essential actions also require recipients to respond as defined in the alert.

   Since Level 2 and Level 3 alerts require acknowledgement of receipt and response to the alerts, they are used in higher risk impact situations than Level 1 alerts, which are purely informational.

II. ERO Iterative Risk Management Framework

During the last ten years, the ERO has expanded its implementation of risk-based approaches across its program areas. During this transition, the ERO has continued to lead industry in reliability, resilience, and security initiatives to identify known and emerging risks, and to engage industry in a collaborative approach to mitigating that risk. The primary reliability, resilience, and security activity for risk mitigation the ERO currently deploys includes, but is not limited to: outreach events such as webinars and conferences, Reliability Guidelines, Alerts, Reliability Standard development, registration and certification, and compliance monitoring and enforcement. In addition, the ERO can engage Forums such as the North American Transmission Forum (NATF) and the North American Generator Forum (NAGF), as well as the industry trade associations, industry groups such as the Energy Systems Integration Group (ESIG), and research organizations such as the Electric Power Research Institute and the Power Systems Engineering Research Center (PSERC) to assist with development of best practices, increased awareness, Implementation Guidance, and other solutions used to address identified risks.

Additionally, a set of industry indicators has been developed to measure reliability and security. These indicators need further refinement, maturation and linkage to industry performance as they are key to evaluating the effectiveness of mitigation efforts, identifying the residual risk that remains, and considering whether the remaining risk is at acceptable levels.

This framework is meant to guide the ERO in the prioritization of risks and provide guidance on the application of ERO Policies, Procedures, and Programs, to inform resource allocation and project prioritization in the mitigation of those risks. Additionally, the framework accommodates measuring residual risk after mitigation is in place, enabling the ERO to evaluate the success of its efforts in mitigating risk, which provides a necessary feedback for future prioritization, mitigation efforts, and program improvements.

The successful reduction of risk is a collaborative process between the ERO, industry, and the technical committees including the Reliability and Security Technical Committee (RSTC) and RISC. The framework provides a transparent process using industry experts in parallel with ERO experts throughout the process, from risk identification, deployment of mitigation strategies, to monitoring the success of these mitigations.

Six specific steps have been identified, consistent with risk management frameworks used by other organizations and industries: 1) Risk Identification; 2) Risk Prioritization; 3) Mitigation Identification and Evaluation; 4) Deployment; 5) Measurement of Success; and 6) Monitoring.

1. **Risk Identification and Validation:** As mentioned above, the ERO identifies risks using both leading and lagging approaches. The RISC biennial report and Long-Term and Seasonal Reliability Assessments (leading) have successfully brought together industry experts to identify and prioritize emerging risks, as well as suggest mitigation activities. A partnership between the ERO leadership and both the RISC and RSTC enables input from the ERO program areas, industry Forums and trade associations to provide additional context in risk identification.

   In addition, the ERO and industry subject matter experts continuously work together identifying and validating risks to the reliable and secure operation of the bulk power system based on analysis of ongoing performance of the system (lagging). Validation of the magnitude and priority of the risk includes working with NERC Committees, and socializing it with Forums, government and research organizations.

   The ERO has a number of ways that it identifies risks:

   - ERO stakeholder supported technical organizations, industry forums, and associated subject matter experts
   - Focused Compliance monitoring activities
   - Reliability and Risk Assessments
   - Events Analysis
   - State of Reliability Report, including the analysis of Availability Data Systems (BASS, TADS, GADS, DADS, MIDAS, etc.)
   - Frequency Response, Inertia, and other essential reliability service measurements
   - Interconnection simulation base case quality and fidelity metrics
   - Reliability Issues Steering Committee (RISC) Biennial Risk Report
   - Regional Risk Assessments

- Communication with external parties, such as DOE, DHS, Natural Resources Canada, CEA and EPRI
- Shared public and/or government intelligence with special emphasis on cyber security.

2. **Risk Prioritization:** Prioritizing risks is accomplished through an analysis of their exposure, scope, and duration as well as impact and likelihood. The primary sources of data used to support this analysis come from the Risk Identification step. Deciding if the risk requires near-term mitigation or continued monitoring is informed by technical expertise. Depending on the complexity of the risk, new models, algorithms and processes may need to be developed to better understand the potential impacts of the risk, which is necessary to develop risk mitigation tactics. The process would be consistent with other risk management frameworks used by other industries, and was recently successfully tested in collaboration with industry through a survey issued by the RISC, based upon the risks that group prioritized in early 2019.

   The ERO risk registry will be developed encompassing prior RISC report findings ongoing technical committee activities, and risks being monitored. Work plans of the technical committees will then be periodically reviewed to ensure that ongoing activities are tied to identified risks in the risk registry. Further, if new risks emerge they can be added to the registry, and if it is deemed that the risks are sufficiently mitigated, they will be moved to the monitored portion of the risk registry. As the RSTC develops its annual work plan and following the publication of the biennial ERO Reliability Risk Priorities Report, the risk registry is reviewed by the RISC and the RSTC to evaluate how completed work addressed these identified risks, whether any new risks have been identified by either committee that need to be added to the risk register, and documenting monitored risks which require no additional mitigation.

3. **Remediation and Mitigation Identification and Evaluation:** The right mix of mitigation activities is balanced against both the effective and efficient use of resources and the potential risk impact and likelihood. Determining the best mix depends on a number of factors, such as:

   - What is the potential impact or severity of the risk?
   - How probable is the risk? Is it sustained, decreasing or growing?
   - Is the risk here today or anticipated in the next 3-5 years?
   - How pervasive is the risk?
   - Is mitigation expected to be a one-time action, or ongoing?
   - Have we had experience with events being exacerbated by the risks, or there is no experience, but the probability is growing (i.e. cyber or physical security)?
   - Have previous mitigation efforts been deployed? If so, were they effective? Why or why not?
   - What is an acceptable residual risk level after mitigating activities have been deployed?
   - Is the risk man-made or by natural causes?

   Input from, and allocation of, subject matter expertise through multiple sources is part of this consideration, including resources within the ERO and its stakeholders (such as standing technical committees and their subgroups, or standard drafting teams), and external parties, such as the North American Transmission and Generation Forums (NATF and NAGF), North American Energy

Standards Board (NAESB), the Institute of Electrical and Electronic Engineers (IEEE), and EPRI, to name a few. Coordination is key to avoid duplication and provide supportive, rather than conflicting actions.

Once a risk to the BES has been prioritized according to its impact and likelihood, the ERO, NERC Committees, Forums, and industry subject matter experts recommend potential mitigations and assess their anticipated effectiveness. Examples of mitigation efforts include, but not limited to:

- Reliability Standards, with Compliance and Enforcement for risks that are:
  - Sustained, moderate to severe impact, and likely
  - Sustained, severe impact, and unlikely
  - Focused monitoring based on risk, and in response to major events
- Reliability Guidelines for risks that are:
  - Sustained, low to moderate impact, and likely
- Lessons Learned for risks that are:
  - Sustained, low impact, and likely
- Assist Visits for risks that are:
  - Compliance-related
  - Focused on a very specific situation or configuration
  - Generally on specific industry or entity practices or conditions
- Analysis of Major Events for risks that are:
  - Identified after a Major Event (e.g., Category 3 or higher)
  - Discreet/one-time, severe impact, unlikely
  - identified through recommended reliability improvements or best practices and lessons learned
- Analysis of "Off-Normal" Events for risks that are
  - Identified after an unusual operational condition has occurred and likely not a categorized event.
  - Discreet/one-time, moderate impact, unlikely
  - Identified through recommended reliability improvements or best practices and lessons learned
- Advisories, Recommendations or Essential Actions[2]

[2] LEVEL 1 (Advisories) – purely informational, intended to advise certain segments of the owners, operators and users of the Bulk Power System of findings and lessons learned; LEVEL 2 (Recommendations) – specific actions that NERC is recommending be considered on a particular topic by certain segments of owners, operators, and users of the Bulk Power System according to each entity's facts and circumstances; LEVEL 3 (Essential Actions) – specific actions that NERC has determined are essential for certain segments of owners, operators, or users of the Bulk Power System to take to ensure the reliability of the Bulk Power System. Such Essential Actions require NERC Board approval before issuance.

- Alerts[3]
- Technical Conferences and Workshops

4. **Mitigation Deployment**: Mitigation projects will be deployed by the ERO and/or industry stakeholder groups, as determined by the "Mitigation Identification and Evaluation" step. A specific mitigation plan would involve a suitable mix of the ERO policies, procedures and programs discussed in Section I.

   From time-to-time, the Federal Energy Regulatory Commission (FERC) may order the development of Reliability Standards, which can occur in this step.

5. **Measurement of Success:** Once a set of solutions has been deployed, the effectiveness of the mitigation must be measured to determine if the residual risk has been reduced to an acceptable level. Effectively, if the desired level of risk mitigation is not met, the risk is fed back to Step 1, enabling a new prioritization of risks, factoring in historic mitigation, ensuring resource allocation is adapted to the changing risk landscape. This step also informs future mitigation efforts, as industry and the ERO learn from the effectiveness of mitigation mixes for reducing risk.

6. **Monitor Residual Risk:** Once the level of residual risk is at an acceptable level, the risk is monitored through ongoing performance measures to ensure that risk remains at acceptable risk levels. The residual risk should be monitored for progress and to ensure that the mitigations that are in place continue to address the risk (Step 5). At times, mitigations need to be deployed on a periodic basis (e.g. annual workshops, Reliability Guideline updates, etc.) to ensure continued success (Step 4). If the risk levels heighten, or increased mitigation efforts are necessary due to the changing nature of the bulk power system, the risk can be fed back (Step 1) for prioritization and the development of additional mitigation approaches.

Figure 1 provides a pictorial flow chart of the ERO's risk management process.

[3] ALERT 1: Industry Action Requested: Fast moving or recently detected, impacts moderate, ALERT 2: Industry Action Required: Fast moving or recently detected, impacts moderate to severe, ALERT 3: Industry Action Mandatory: Fast moving or recently detected, impacts moderate to severe.

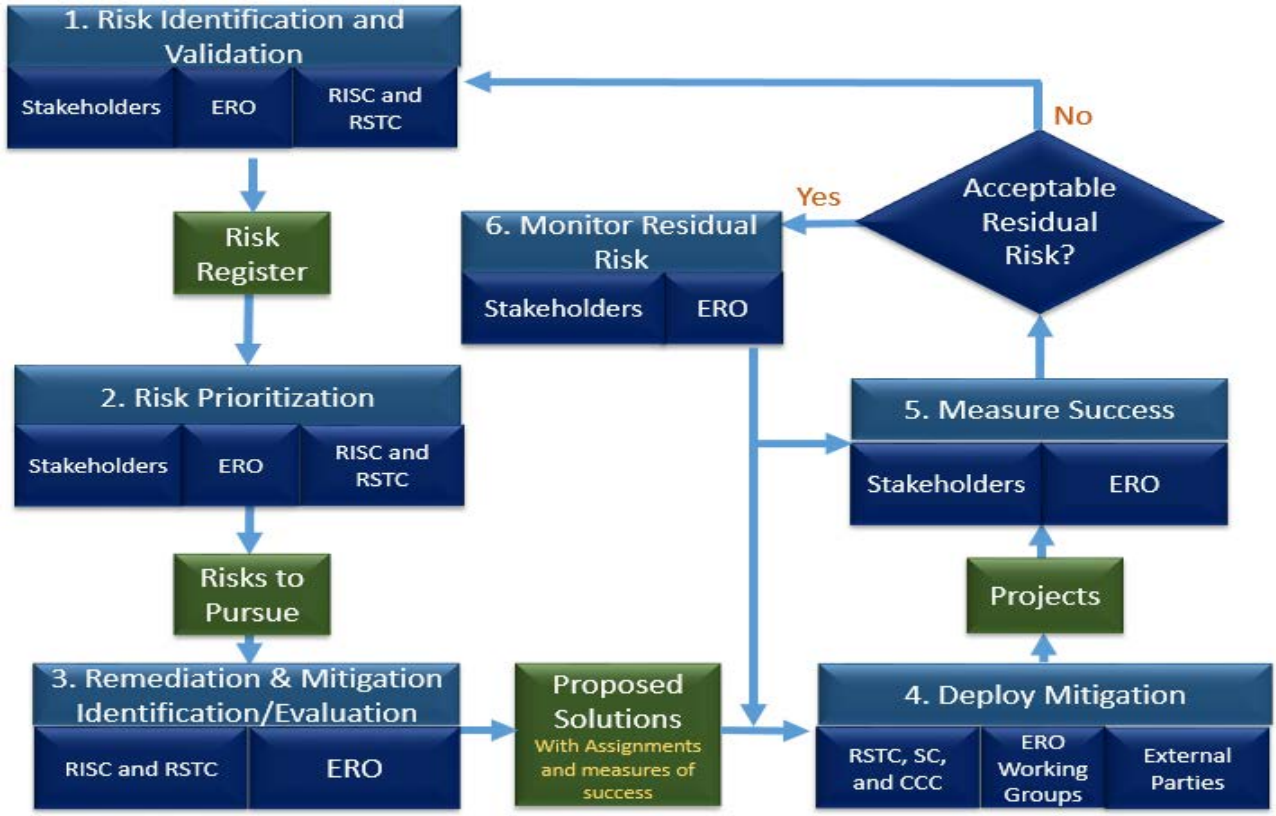


Figure 1: ERO Risk Management Process

In order to coordinate risk mitigation, the RISC and RSTC triage risk mitigations together as called for in the iterative RISC Framework process. The touch points are discussed in Figure 2.

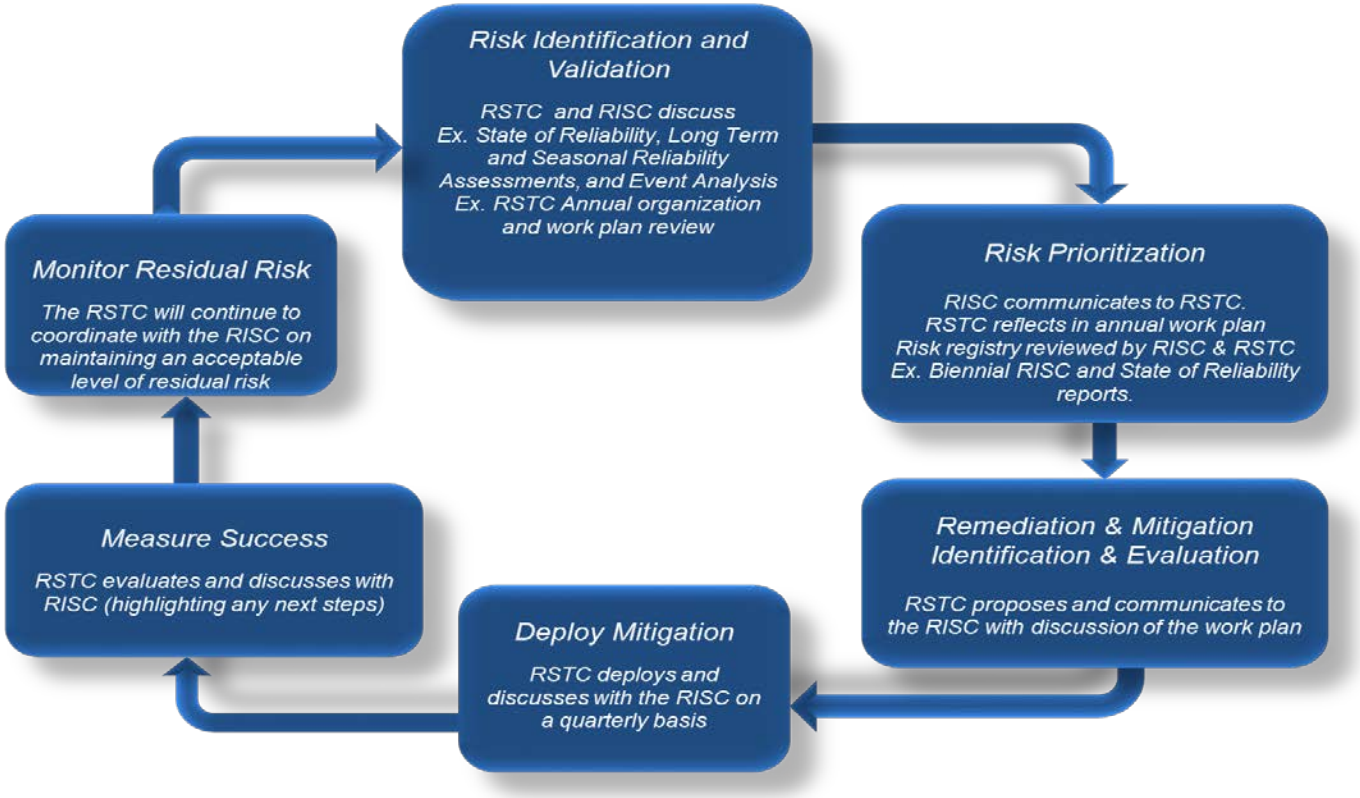


Figure 2: RSTC/RISC Coordination within the Risk Framework

1. **Risk Identification and Validation** is completed by the RSTC and RISC as they review the annual State of Reliability Report, Long-Term and Seasonal Reliability Assessments, Event Analysis records and with a joint review the biennial RISC Report incorporating prioritized risks into the RSTC's subgroup's work plans. Further, the RSTC coordinates with the RISC on long-term risks and mitigations. In this way, risks determined by monitoring the ongoing performance of the bulk power system and those identified by scanning the horizon.
2. **Reliability Risk Prioritization** is completed collaboratively between the RSTC and RISC on an annual basis. Ongoing activities are calibrated, and newly identified risks are prioritized.
3. **Remediation & Mitigation Identification & Evaluation** activities to address the risks are assigned to the appropriate RSTC subgroups accounting for changing needs across the BPS. They create the ERO Policies, Procedures and Programs to address the risks. Frequent communications ensures coordination of ongoing risk prioritization. RSTC will provide updates to the RISC on the subgroup activities being taken on a quarterly basis.
4. **Deploy Mitigations** by putting ERO Policies, Procedures and Programs into effect.
5. **Measure Success** of the strategies/plans which are jointly evaluated for effectiveness, highlighting next steps. RSTC will provide updates to the RISC on the actions being taken on a quarterly basis.
6. **Residual Risk** is monitored in coordination between the RSTC coordinates and RISC towards maintaining an acceptable level of residual risk.

III. Risk Mitigation from Likelihood and Severity Perspective

From a likelihood and impact perspective, the ERO Policies, Procedures, and Programs above overlap based on the specifics of each risk being mitigated. In addition, there are a host of additional activities that work together to manage risks, such as engagement with the reliability ecosystem, (e.g. Forums, professional organizations (IEEE-PES, CIGRE, etc.), and government). A combination can be used towards gaining industry action, setting the stage for standards as well as addressing a risk while a standard is being developed. Likelihood and impact have a bearing when a Reliability Standard is required. Figure 3 provides an illustration that is representative of the principles:

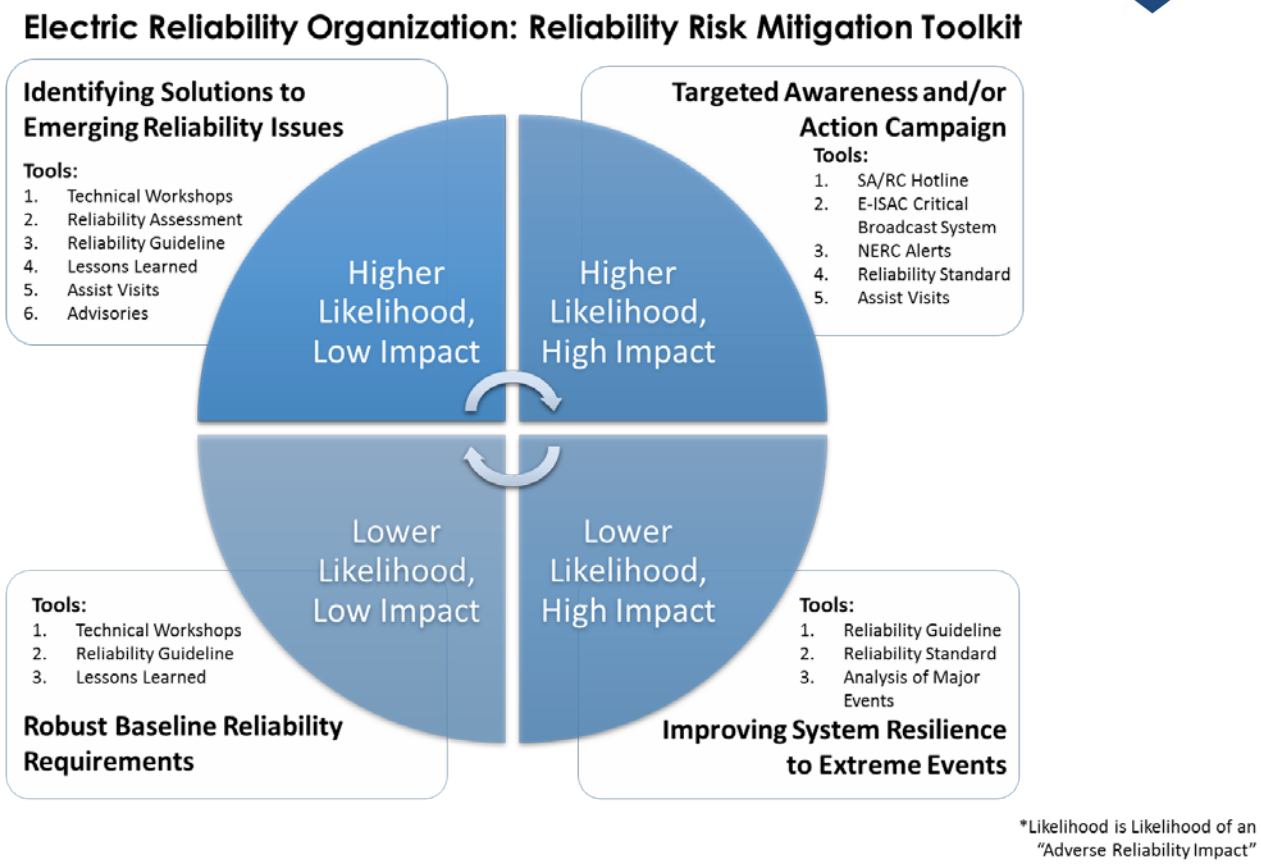


Figure 3: ERO Reliability Risk Mitigation Portfolio

IV. Resilience Impact on Risk Management

In August 2017, the Department of Energy (DOE) issued a Staff Report to the Secretary on Electricity Markets and Reliability (DOE Grid Report) regarding reliability and resilience in light of the changing energy environment. One recommendation in the DOE Grid Report stated that NERC should consider adding resilience to its mission and broadening its scope to address resilience. In response to the DOE report and NERC assessments, the NERC Board of Trustees (NERC Board) directed the Reliability Issues Steering Committee (RISC) to develop a model for resilience and examine resilience in today's environment.

In accordance with the NERC Board's directive, the RISC worked with NERC stakeholders to reexamine the meaning of resilience in today's changing environment and how resilience impacts NERC activities. Meanwhile, the DOE and FERC have continued evaluating the relationship of resilience and reliability.

NERC has developed, filed with FERC, and later updated a definition of the adequate level of reliability (ALR) along with a technical report to guide Reliability Standards development, Reliability Assessments, guideline development, data collection, system analysis and standing committee work. In particular, the ALR, or design basis of the system, is defined as the state that design, planning, and operation the BES will achieve when five ALR performance objectives are met.[4] Each objective addresses Reliable Operation of the BES over four time frames:

[4] **The ALR Performance Objectives are as follows:**

1. The BES does not experience instability, uncontrolled separation, Cascading, or voltage collapse under normal operating conditions and when subject to predefined Disturbances.

1. **Steady state:** the period before a disturbance and after restoration has achieved normal operating conditions
2. **Transient:** the transitional period after a disturbance and during high-speed automatic actions in response
3. **Operations response:** the period after the disturbance where some automatic actions occur and operators act to respond
4. **Recovery and system restoration:** the time period after a widespread outage through initial restoration rebounding to a sustainable operating state and recovery to a new steady state

In November of 2018, the NERC Board accepted the RISC's Report, titled "Reliability Issues Steering Committee Resilience Report." This report summarizes the results of the RISC's examination of resilience, including the RISC Resilience Model.

V. Incorporating Risk Adds a Critical Dimension to the ERO's Mission

Application of ERO Policies, Procedures and Programs provides a multi-dimensional approach to address risks. Namely, some of these approaches can be put in place swiftly, while others require industry collaborative action which can take more time. Further, there are time considerations on the speed of the ERO Policies, Procedures and Programs deployment, as well as the speed at which a risk should be addressed. Figure 4 provides a risk time horizon perspective.

The ERO Policies, Procedures and Programs deployed are largely dependent on the likelihood that a given risk would impact reliability. For example, reliability issues that have occurred are generally more likely than those that have not occurred, and risks/issues that have occurred are generally more likely to occur again.

Therefore, the ERO Policies, Procedures and Programs used to mitigate risks that have occurred may be different than those used to mitigate longer-term issue that haven't impacted reliability yet. For instance, after analysis of major and/or off-normal events, depending on the potential impacts and reoccurrence likelihood, strong action can be taken by the ERO with nearly immediate response by issuing up to three levels of NERC Alerts, Assist Visits, followed by Reliability Guidelines, technical conferences, and enhancement of Reliability Standards.

Generally, industry action to address medium to high impact and likelihood risks employs Reliability Standards which provide the highest certainty of risk mitigation. Following Reliability Standards is mandatory and provides a high value by creating comfort and certainty for interconnected organizations

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2. BES frequency is maintained within defined parameters under normal operating conditions and when subject to predefined Disturbances.
3. BES voltage is maintained within defined parameters under normal operating conditions and when subject to predefined Disturbances.
4. Adverse Reliability Impacts on the BES following low probability Disturbances (e.g., multiple contingences, unplanned and uncontrolled equipment outages, cyber security events, and malicious acts) are managed.
5. Restoration of the BES after major system Disturbances that result in blackouts and widespread outages of BES elements is performed in a coordinated and controlled manner.

The ALR also lists two assessment objectives for purposes of assessing risks to reliability:

1. BES transmission capability is assessed to determine availability to meet anticipated BES demands during normal operating conditions and when subject to predefined Disturbances.
2. Resource capability is assessed to determine availability to the Bulk Electric System to meet anticipated BES demands during normal operating conditions and when subject to predefined Disturbances.

of expectations and roles, ensuring that the adequate level of reliability will be maintained. In the end, following the Reliability Standards is an outcome of good industry reliability performance.

High-Impact, Low-Frequency-type risks generally do not have a historical record of technical information. Longer-term risks can be difficult to quantify—therefore, much of the work the ERO can do is to assemble industry experts and stakeholders to agree on and validate what the reliability risk is and how it should be considered and addressed within the ERO Policies, Procedures and Programs, including the full reliability ecosystem. These risks require more collaborative effort and more time towards developing technical references, convening industry stakeholders, and conducting independent reliability assessments to determine the best way to mitigate the risk.

The ERO's risk-based approach is fundamental to the success of its mission to ensure the reliability and security of the BES in North America.

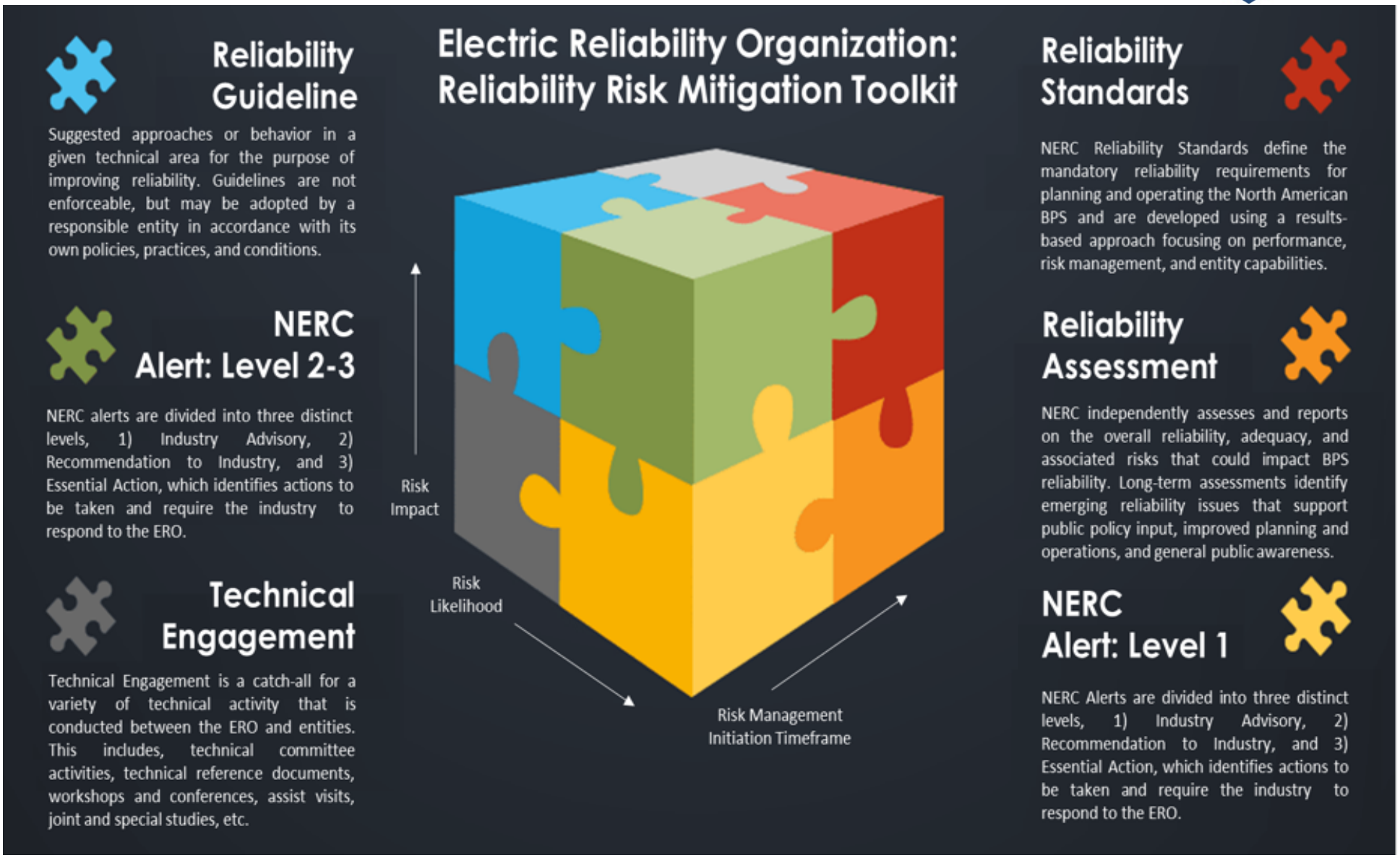

Figure 4: Risk Time Horizon

MEMORANDUM

TO: Roy Thilly, Chair
NERC Board of Trustees

FROM: Jack Cashin, Director, Policy Analysis and Reliability Standards, American Public Power Association
John Di Stasio, President, Large Public Power Council
Terry Huval, Executive Director, Transmission Access Policy Study Group

DATE: October 21, 2020

SUBJECT: Response to Request for Policy Input to NERC Board of Trustees

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The American Public Power Association, Large Public Power Council, and Transmission Access Policy Study Group concur with the Policy Input submitted today by the State/Municipal and Transmission Dependent Utility Sectors of the Member Representatives Committee, in response to NERC Board Chair Roy Thilly's September 30, 2020 letter requesting policy input in advance of the November 2020 NERC Board of Trustees meetings.

NERC Board of Trustees Policy Input – Canadian Electricity Association

The Canadian Electricity Association ("CEA") appreciates this opportunity to provide further policy input to the NERC Member Representatives Committee ("MRC") and Board of Trustees ("Board").

Summary of Key Points:

- Item 1: The Framework to Address Known and Emerging Reliability and Security Risks ('Whitepaper') provides a high level and comprehensive overview of the ERO Enterprise's approach to risk management.
    - NERC should ensure any framework to address risk allows appropriate flexibility in risk identification and management activities.
    - The Whitepaper could more clearly define where new or modified programs or efforts to implement any of the framework would be required, and the expected timelines and prioritization for doing so.
- Item 2: CEA encourages NERC to prioritize: actions to support utility response to the ongoing pandemic; budget efficiencies, and efficient and effective operations; and reviewing existing NERC documents and efforts, to see where it should continue to focus its efforts, or where efforts need to be modified to respond to new or changing issues.
- CEA is supportive of the policy input letter comments submitted by Lloyd Linke in his role as representative of the Portion of Sector 4 representing the Federal Utilities and Federal Power Marketing Administrations.

1. Framework to Address Known and Emerging Reliability and Security Risks

CEA appreciates the ongoing efforts in many NERC forums to better identify, prioritize, and address known and emerging reliability and security risks. Efforts to use risk-based approaches across ERO Enterprise program areas to help address reliability and security issues is positive, as it can help ensure that the most appropriate tools are used to address risks.

Overall, the Framework to Address Known and Emerging Reliability and Security Risks ('Whitepaper') provides a high level and comprehensive overview of the ERO Enterprise's approach to risk management. It fits well into the conversations happening on this topic in forums such as the RISC and RSTC.

CEA appreciates that the Whitepaper aims to define a consistent framework for NERC to identify, prioritize and address known and emerging reliability and security risks. This framework can enable all NERC stakeholders to better understand how NERC programs operate, and can help ensure more effective, consistent, unified, and well-defined efforts across the different NERC programs and committees that work in this space.

While a consistent framework is positive, CEA would also remind NERC to ensure that the framework allows for appropriate flexibility in risk identification and management activities. Different companies, regions or jurisdictions may experience risks differently, or have different ways to address risks that best

fit their unique realities and that best achieve the overall desired outcome of a more reliable, resilient and secure grid for everyone.

CEA would also appreciate if the Whitepaper more clearly defined where new or modified programs or efforts to implement any of the framework would be required, and the expected timelines and prioritization for doing so.

Finally, the opportunity for stakeholders to comment on the Whitepaper and have the comments reviewed by the NERC Board in advance of the document being brought for approval is welcome. It offers an opportunity for feedback to be more meaningfully incorporated into the Whitepaper and discussed by the Board.

CEA encourages NERC to carefully review stakeholder comments on this Whitepaper, and work to incorporate them where necessary.

2. Top Priorities for NERC Over the Next Three Years

CEA appreciates the opportunity to comment on NERC priorities over the next three years.

I. **COVID-19 Response**: Electricity companies have taken extraordinary efforts to ensure reliable power, and safe operations for their employees and the customers they serve, throughout this unprecedented pandemic.

   CEA members have appreciated NERC's efforts to help utilities respond to the COVID-19 pandemic, including working with Canadian regulators. The decisions by NERC to temporarily suspend or modify certain administrative and regulatory requirements so that utilities could stay focused on COVID-19 response, and the actions that mattered most to reliable and safe operations, have helped ensure that customers across North America can depend on reliable and secure electricity.

   The pandemic is not over yet, and the future remains uncertain. Regions across Canada and the U.S. are seeing resurgences in cases. Meanwhile, utilities have had to adapt to a new normal, and ensure pandemic protocols are part of all operations, including natural disaster response.

   As such, CEA would encourage NERC to stay focused on the efforts it can take to ensure utilities can continue to respond to the evolving pandemic and adjust to 'new normals'. This includes considering where the actions taken at the start of the pandemic regarding regulatory relief should be extended or become the norm, or where efforts could be taken to modify existing requirements so that they better fit with the actions utilities must take to ensure the safety of their employees and reliable power during the ongoing pandemic.

II. **Budget and Effective and Efficient Operations**: CEA has long advocated for reduced annual budget increases at NERC, and more effective, efficient, and focused operations. This imperative has become even more important during COVID-19 due to the uncertain conditions resulting from the pandemic, including decreased load in some cases or imperatives to provide financial relief to customers.

   As such, NERC's efforts to ensure an overall flat assessment and lower than projected budget increases for 2021 have been welcome.

As noted above, the pandemic is not over, and utilities are still expected to practice fiscal discipline and respond to evolving policy and customer demands. CEA reiterates the need for budget stabilization and a reduction of annual budget increases to ensure that NERC's operations are better aligned with the regulatory and fiscal realities faced by electric utilities. This is likely even more significant in the context that the financial impacts of COVID-19 may not be fully resolved in the short to medium term.

III. Priorities that Reflect Existing Plans:

CEA would urge NERC to review existing NERC documents and efforts, including RISC reports and the current ERO Enterprise Long Term Strategy, to see where it should continue to focus its efforts, or where efforts need to be modified to respond to new or changing issues.

Of particular interest to Canadians would be:

- Efforts to implement the revised E-ISAC strategic plan and improve its value proposition.
- Continued and strengthened North American reliability and security community engagement.
- Monitoring of NERC committees to ensure they are meeting goals and objectives and are operating efficiently, especially given the recent changes to NERC committee structure.

CEA thanks the Board for considering these comments. CEA and its members look forward to continuing the discussion going forward.

Dated: October 21, 2020

Contact:
Francis Bradley
President & CEO
Canadian Electricity Association
Bradley@electricity.ca

Edison Electric INSTITUTE

Power by Association

Policy Input for the NERC Board of Trustees Provided by the Edison Electric Institute October 21, 2020

On behalf of our member companies, the Edison Electric Institute (EEI) appreciates the opportunity to provide the following policy input for the NERC Board of Trustees to review in advance of the November 4-5, meetings. EEI perspectives on bulk-power system (BPS) reliability are formed by our CEO Policy Committee on Reliability, Security, and Business Continuity and the Reliability Executive Advisory Committee with the support of the Reliability Committee.

In the September 30, 2020, policy input letter, NERC Board of Trustees Chair, Roy Thilly, seeks stakeholder input on *The Framework to Address Known and Emerging Reliability and Security Risks* (Whitepaper) and the top priorities for NERC over the next three years. EEI offers the following input.

I. SUMMARY OF COMMENTS

The Framework to Address Known and Emerging Reliability and Security Risks (Whitepaper)

- EEI supports the Whitepaper and its goal of providing a documented, repeatable framework for the identification, prioritization, and mitigation of emerging reliability and security risks.
- EEI recommends clarifying the concepts of risk identification and risk validation, including addressing the need for a technical justification to support an identified risk
- EEI suggests that those who recommend mitigation adequately support the basis for selecting the particular approach to mitigation over the other available tools.

Top Priorities for NERC Over the Next Three Years

- Risk-based Focus in Standards, Compliance, and Enforcement
- Grid transformation and changing resource mix
- Cyber and Physical Security

Additional Input

- EEI applauds NERC for their recognition of existing risks and their continued efforts to protect Critical Electric Infrastructure Information (CEII) from disclosure as laid out in the Second Joint Staff White Paper on Notices of Penalty Pertaining to Violations of Critical Infrastructure

Protection Reliability Standards. Protecting CEII is a critical part of national security and the reliability and security of the energy grid.

- EEI appreciates NERC's establishment of a stakeholder security advisory committee that will provide valuable industry expertise to advise and support NERC management in its efforts to maintain the confidentiality, integrity, and security of sensitive industry information stored or otherwise processed by the ERO Enterprise.
- EEI supports NERC's decision to allow registered entities to manage certain sensitive information and evidence outside of the ERO SEL and/or registered entity SEL to address the differing registered entity risk tolerance levels and to mitigate industry-wide security risk and looks forward to further understanding the mechanics of this process.

II. COMMENTS

The Framework to Address Known and Emerging Reliability and Security Risks (Whitepaper)

The Board of Trustees seeks policy input on the Whitepaper, including whether there are missing policies, procedures, and/or programs, if the iterative six-step framework is sound, if there are missing steps in the framework, if there are missing elements from the RSTC/RISC triage, and if the model figure is complete.

EEI supports the Whitepaper and the approach for a documented, repeatable framework for the identification, prioritization, and mitigation of emerging reliability and security risks. The framework provides a good foundation for identifying, prioritizing, and addressing known and emerging risks to support the reliability and security of the BPS. As the framework is implemented, it will be important for NERC to have a feedback mechanism on the various steps to ensure the framework is working as intended. The continued use of the stakeholder driven process that capitalizes on the extensive knowledge and experience of the stakeholder community is essential to the effectiveness of this process.

With respect to question 3 of the letter regarding missing steps in the framework, EEI recommends that step one, that includes the concepts of risk identification and risk validation, have separate descriptions and expectations for each of these concepts. In addition, the use of the concept "risk validation" needs an explanation similar to the concepts of risk identification, prioritization, and mitigation. For example, in the Whitepaper NERC describes that risk prioritization "is accomplished through an analysis of their exposure, scope, and duration as well as impact and likelihood." The risk validation step should have a similar description that explains the expectations (e.g., technical basis, data and

analysis, quantifiable gap) for how affirming the identified risk is to be accomplished.

Finally, once the ERO, NERC Committees, Forums, or industry subject matter experts identify a risk, it is critical that the corresponding recommendation for mitigation describe, explain, and provide support for the basis for selecting the particular approach to mitigation, whether the recommendation is a Reliability Standard, Reliability Guideline, Lessons Learned, etc. For example, EEI recommends that the Standards Authorization Request template be updated to require an explanation of whether and how the particular issue fits into the Reliability Standard mitigation tools.

Top Priorities for NERC Over the Next Three Years

The Board of Trustees seeks policy input on what the three most important reliability and security matters that NERC should address over the next three years.

1. Risk-based Focus in Standards, Compliance, and Enforcement

NERC should prioritize and enhance its goal of developing a risk-based focus for standards, compliance, and enforcement. We would be pleased to sit down with NERC to walk through examples where the expectation during compliance auditing and enforcement activities could more closely align with a risk-based approach.

In addition, the process for auditing CIP Standards should be refined to address the use of technologies such as cloud computing and virtualization and the use of third-party reviews and certifications for supply chain activities. These issues have been discussed over the past several years and now deserve priority, given the increased use of these technologies and their heightened attention in the regulatory space.

2. Grid Transformation and Changing Resource Mix

As the number of DERs on the system grows, EEI members have an obligation to ensure that the addition of DERs does not harm the security and reliability of the energy grid. A continued focus on this transformation is necessary to ensure we have the tools to plan, model, and operate the BPS reliably.

3. Cyber and Physical Security

Digital electric infrastructure is advancing rapidly with great benefits. At the same time, associated cybersecurity risks are proliferating. Threats to critical infrastructure are escalating, and attack vectors are changing. These changes create new challenges to protect electric infrastructure. NERC reliability standards, including the CIP Standards, are one of the tools to support security for the BPS. However, flexible security measures are equally important to ensure the energy grid remains secure and safe while leveraging these new technologies and enhancing the reliability and security of the BPS. The ERO should continue to focus on cyber and physical risks using all of it tools and working collaboratively with other governmental authorities to ensure timely information sharing.

Thank you for the opportunity to provide policy input.

TO: Roy Thilly, Chair
NERC Board of Trustees

FROM: Lloyd A, Linke
Federal Utility/Federal PMA Portion Sector 4

DATE: October 21, 2020

SUBJECT: Response to Request for Policy Input to NERC Board of Trustees

The Portion of Sector 4 representing the Federal Utilities and Federal Power Marketing Administrations (Federal PMAs), appreciate the opportunity to respond to your September 30, 2020 letter to Ms. Jennifer Sterling, Chair NERC Member Representative Committee, requesting input on certain policy issues. The Federal PMAs appreciates the opportunity to provide comments on the policy input of particular interest to the NERC Board of Trustees (Board) for their November 2020 meeting.

Summary of Key Points

- Ensure that the process identified in the whitepaper on The Framework to Address Known and Emerging Reliability and Security Risks is flexible enough to deal with new unexpected risks.
- Priorities for NERC in Next Three Years
    - Continue to monitor the impacts of COVID-19 pandemic on the reliability of the Bulk Electric System, BES, and the financial impact to the industry.
    - Provide timely and actionable classified and other critical threat and intelligence information to the industry
    - Monitor the effectiveness of the Reliability and Security Technical Committee, RSTC, to ensure the vision for the RSTC is met and it continues to provide and value to NERC and the industry.
    - The Federal PMAs are supportive of the policy input letter comments provide by the Canadian Electricity Association.

1. The Federal PMAs offers the following on the whitepaper on The Framework to Address Known and Emerging Reliability and Security Risks (Whitepaper)

In summary the Federal PMAs are in support of the Whitepaper and appreciate NERC's efforts to develop this process on addressing risks. Having a clear process on how to identify and address risks is something that the ERO Enterprise has needed to assist the RISC and other NERC committees. While this process establishes a sound basis for risk identification and mitigation, we want to ensure that it is flexible enough to deal with new unexpected risks that may develop, like the Blue Cut Fire bringing forward the issues associated with Distributed

Energy Resource. It was not clear how the process would deal with such an event in a timely manner.

2. Top Priorities for NERC Over the Next Three Years

- The Federal PMAs suggest that NERC should continue to monitor its response to the current COVID-19 pandemic. While the reliability of the BES is just as important during the pandemic, NERC should consider whether it can continue the suspension of some requirements or if they could be terminated, with minimal or no impact to the reliability of the BES. During this time of pandemic, while the industry is facing financial pressures, NERC and the ERO should continue efforts to control spending.

- The Federal PMAs appreciate NERC and the E-ISAC's efforts leverage classified and other critical threat and intelligence information (both nonpublic governmental and private sector) to provide information to the sector regarding security risks. The information needs to be timely and actionable for it to provide value to the industry. NERC and the E-ISAC needs to work with the industry to provide actionable information in a timely and manner. This may include encouraging the industry to increase the access classified information.

- The Federal PMA's support the change to the structure of the technical committees. The previous technical committees provided a valuable service to the industry and NERC and the new RSTC structure should help ensure the continued value to the industry and NERC. However, it is important to monitor the effectiveness of the new technical committee structure and ensure that the vison as described in the October 2019 Reliability and Security Technical Committee Proposal are met or whether additional fine tuning is required.

The Federal PMAs appreciate the opportunity to provide this policy input to the NERC Board of Trustees.

ISO/RTO Council's (IRC) Policy Input to Board of Trustees

October 21, 2020

The ISO/RTO Council[1] (IRC) appreciates the opportunity to respond to the Board's request for policy input. The IRC offers the following input to the Member Representatives Committee (MRC) in response to Ms. Jennifer Sterling's letter dated September 30, 2020, regarding the Framework to Address Known and Emerging Reliability and Security Risks and NERC's Top Priorities for Over the Next Three Years.

Summary Comments

The IRC generally supports the NERC Framework to Address Known and Emerging Reliability and Security Risks. The document indicates how NERC working with the RISC/RSTC and stakeholders collect, evaluate and then prioritizes risks that need to be mitigated or monitored; the MRC and stakeholders have been supportive of development of such a document. The IRC offers suggestions to NERC's Three-Year priorities as requested, below.

1. Framework to Address Known and Emerging Reliability and Security Risks?

We are generally supportive of the NERC Framework to Address Known and Emerging Reliability. The feedback incorporating metrics on the effectiveness of mitigation techniques must be an integral part of any proposed solution and will be a valuable tool to assess any needed changes in a proposed solution. However, we believe for solutions involving the need to revise or create a new standard, the Standards Committee should be part of that feedback loop since they are the oversight authority for the Standards Process and can provide reports regarding the standards development progress and alter the project priority if needed.

2. What the three most important reliability and security matters that you believe NERC should address over the next three years?

We offer the below list with regard to 3 year priorities:

- Continued evolution of the definition and standards for essential reliability services, including reserves, to ensure the reliable operation of a power system that has a high penetration of variable, energy limited resources, connected at either the transmission or distribution systems. Such standards should require an obligation for balancing authorities/reliability

[1] The IRC is comprised of the Alberta Electric System Operator (AESO), the California Independent System Operator Corporation (California ISO), Electric Reliability Council of Texas, Inc. (ERCOT), the Independent Electricity System Operator of Ontario, Inc., (IESO), ISO New England, Inc. (ISO-NE), Midcontinent Independent System Operator, Inc., (MISO), New York Independent System Operator, Inc. (NYISO), PJM Interconnection, L.L.C. (PJM), and Southwest Power Pool, Inc. (SPP).

entities to model future grid dynamics in order to establish both short term and long term situational awareness and requirements for reliability services, including reserves.

- Continued evolution of cyber security standards to focus on the highest risk areas, allow for maturity of processes and controls between standard iterations and streamline requirements, where appropriate, to reduce the cost of compliance. As a parallel effort, NERC should facilitate a lessons learned forum to confidentially discuss CIP compliance issues in order to facilitate industry-awareness of compliance exposure moving forward.
- Enhance information sharing and situational awareness regarding critical energy inputs (e.g. reliance on critical gas pipelines, LNG facilities, HVDC imports, etc.) for the Bulk Electric System. This is largely in-line with the E-ISAC Long-Term Strategic Plan presented last Quarter.

Conclusion

The IRC appreciates the opportunity to provide policy input to the MRC for NERC's upcoming Board meeting.

Additionally, given the current circumstances during COVID, we request NERC work with the Industry to coordinate the necessity of future WebEx's versus in-person meetings given travel budget limitations may continue into next year and possibly beyond.

Policy Input to the NERC Board of Trustees
November 5, 2020 Teleconference
Provided by the North American Generator Forum

The North American Generator Forum (NAGF) appreciates the opportunity to provide the following policy input for the NERC Member Representatives Committee ("MRC") and Board of Trustees ("Board") in response to BOT Chair Roy Thilly's letter dated September 30, 2020.

Summary

Item 1: Framework to Address Known and Emerging Reliability and Security Risks

Overall, the NAGF supports the Framework to Address Known and Emerging Reliability and Security Risks. The NAGF has identified some enhancements for consideration regarding the iterative six-step risk management framework.

Item 2: Top Priorities for NERC Over the Next Three Years

The NAGF identified the following three most important reliability and security matters for consideration:

- Grid Transformation and the impacts to Resource Adequacy
- Critical Infrastructure Interdependence and utilizing resource attributes to enhance Resilience
- Cyber and Physical Security

Discussion

Item 1: Framework to Address Known and Emerging Reliability and Security Risks

The Board requests MRC policy input on the following:

1. Are there any ERO policies, procedures, and/or programs that are missing or need amplification?

The NAGF has not identified any ERO policies, procedures, and/or programs that need to be included or need amplification.

2. Does the iterative six-step risk management framework provide a sound basis for risk identification and mitigation?

The NAGF agrees that the proposed iterative six-step risk management framework provides a sound basis for risk identification and mitigation. The proposed frame-work contains the necessary elements for a successful risk management program.

3. Are there any significant steps missing from the iterative risk management framework? If so, what steps do you propose adding?

Risk Identification and Validation

The NAGF agrees that it is important to include industry subject matter experts, including the NAGF and NATF, as part of the risk identification/prioritization process. Risk ownership needs to be defined during this phase.

Risk Prioritization

The NAGF believes that a robust risk identification and prioritization process is critical to the success of any risk management program. Incorporating the potential movement of a risk among the planning horizons (i.e. risk velocity) is an element that needs to be part of the risk prioritization phase.

The NAGF agrees that an ERO risk registry is necessary to house the identified risks along with associated ownership, prioritization, mitigation, and status information.

Remediation and Mitigation Identification and Evaluation

The NAGF believes that prior to the development of mitigation activities, the risk tolerance level needs to be defined for each risk and then remediation/mitigation plans can be developed accordingly.

Input from the NERC resources, stakeholders, industry experts, and external parties such as the NAGF are important to help ensure the success of remediation/mitigation activities.

Mitigation Deployment

The NAGF agrees with the plan for deploying mitigation activities through the ERO and/or industry stakeholder groups.

Measure of Success

The NAGF agrees with the need to evaluate the effectiveness of mitigation activities against the defined risk tolerance/residual risk. The NAGF believes the Trades and Forums working together could provide measures and evaluations of the effectiveness.

Monitor Residual Risk

The NAGF agrees with the need to periodically monitor identified risks that achieve an acceptable risk level.

4. Are there any missing key elements in the RSTC/RISC triage approach? If so, what key elements do you propose adding?

The NAGF agrees with the key elements of the RSTC/RISC triage approach.

5. Is the multi-dimensional model shown in Figure 4 of the Whitepaper complete?

The NAGF believes that the Whitepaper Figure 4 – Risk Time Horizon is complete and correctly captures the deployment of ERO Policies, Procedures, and Programs for the risk time horizon.

Item 2: Top Priorities for NERC Over the Next Three Years

The Board requests MRC policy input on the following:

1. Identify the three most important reliability and security matters that you believe NERC should address over the next three years.

The NAGF identified the following three most important reliability and security matters for consideration:

- Grid Transformation and the impacts to Resource Adequacy
  - As the resource mix changes due to technology, economics and policy, the industry will need to place a greater emphasis on securing resource adequacy
- Critical Infrastructure Interdependence and utilizing resource attributes to enhance Resilience
  - The change in resource technology may better support islanding and micro grids which would enhance resilience
- Cyber and Physical Security
  - As both resources and system operations becomes more control system based, ensuring physical and cyber security grows in importance

New York Reliability Council
c/o Paul Gioia, Esq.
Whiteman Osterman & Hanna LLP
One Commerce Plaza- 99 Washington Av.
Albany, NY 12260

TO: Roy Thilly, Chair NERC Board of Trustees

FROM: **Mayer Sasson – Chair New York State Reliability Council Executive Committee**

DATE: **October 20, 2020**

SUBJECT: Response to Request for Policy Input to the NERC Board of Trustees

The New York State Reliability Council, L.L.C. ("NYSRC")[1] is a NERC member and a member of sector 10 - Independent System Operator/Regional Transmission Organization and votes on standards related matters in Registered Ballot Body segment 9 – Regional Organization. The NYSRC tailors its New York rules specifically so as not to conflict with the mandatory requirements of NERC or the regional Criteria of the Northeast Power Coordination Council, Inc. (NPCC). Many of the NPCC Criteria address resilience.

The NYSRC appreciates the opportunity to provide these comments in response to the request in your letter to Ms. Jennifer Sterling dated September 30, 2020. These comments apply specifically to the ERO's establishment of a consistent framework to identify, prioritize, as well as address known and emerging reliability and security risks. The Framework we have been asked to revise addresses "*Known and Emerging Reliability and Security Risks (Whitepaper) (Attachment B)*",

[1] NYSRC is a FERC sanctioned, not-for-profit entity, organized as a Delaware limited liability company, whose mission is to promote and preserve the reliability of electric service on the New York State Power System by developing, maintaining, and, from time-to-time, updating the Reliability Rules which shall be complied with by the New York Independent System Operator ("NYISO") and all entities engaging in electric transmission, ancillary services, energy and power transactions on the New York State Power System.

Are there any ERO policies, procedures, and/or programs that are missing or need amplification?

Response: The NYSRC recommends that there be greater policy level recognition by the Board of Trustees on the impact of renewable generating resources on resource adequacy planning. Specifically, the NYSRC is concerned about the impact on installed reserve margin as a result of the increasing level of renewable generation penetration. The NYSRC has noted that there are diminishing returns in terms of contribution to meeting system peak demand as the penetration of renewables increases. We recommend that the NERC Board of Trustees and NERC Reliability Assessment Staff take note of the work the NYSRC has done in this area in its report titled " The Impacts of High Intermittent Renewable Resources- On the Installed Reserve Margin for New York"

In our study we note the following:
"The study shows that to meet the resource adequacy criterion, the installed capacity quantity for New York State will need to increase by 24.3 percentage points, from the 2020 IRM Study preliminary base case value of 118.6% to 142.9%. The increase in the installed capacity requirement is driven primarily by the intermittent characteristics of weather-dependent resources. The amount of the increase is predominantly a result of the lower availability of intermittent generators, which reduces the average availability of NYCA suppliers."-page 3

We believe that the consequences are significant in terms of the amount of nameplate capacity that must be installed to retain the one day in ten-year Loss of Load Expectation Criteria required in the NPCC region and in general use throughout North America..

This issue in our opinion deserves a high priority in the NERC BOTs efforts to keep NERC and its resource assessments program ahead of the curve on a North America wide basis.

Does the iterative six-step risk management framework provide a sound basis for risk identification and mitigation?

Response: The NYSRC believes find the s six-step risk management framework provides a sound basis to risk identification and mitigation.

Are there any significant steps missing from the iterative risk management framework? If so, what steps do you propose adding?

Response: There are no significant steps missing from the iterative risk management framework.

Are there any missing key elements in the RSTC/RISC triage approach? If so, what key elements do you propose adding?

Response: There are no missing key elements in the RSTC/RISC triage approach.

Is the multi-dimensional model shown in Figure 4 of the Whitepaper complete?

Response: NYSRC supports the multi-dimensional model shown in Figure 4 of the Whitepaper.

NPCC, Inc.
NORTHEAST POWER COORDINATING COUNCIL, INC.
1040 AVE. OF THE AMERICAS, NEW YORK, NY 10018 (212) 840-1070 FAX (212) 302-2782

Policy Input
From a Northeastern North American Reliability Perspective
By the NPCC Board of Directors

1. Framework to Address Known and Emerging Reliability and Security Risks

- The NPCC Board supports the proposed six-step management risk framework that includes the identification, prioritization, and addressing of known and emerging reliability and security risks.
- The NPCC Board recommends augmenting the explanation of the Reliability Standards, Assurance, and Enforcement process to summarize the Compliance Oversight Process that identifies high risk areas for registered entities' that focuses on improving their individual performance.
- To further enhance the framework, the NPCC Board recommends expanding the communications feedback loop to more explicitly include industry stakeholders not directly involved in either the RISC or RSTC efforts.
- The NPCC Board also suggests the inclusion of cost-effectiveness analysis to the framework when considering the type and/or depth of remediation and mitigation of identified risks.
- The NPCC Board also recommends increased coordination of the identified risk mitigation activities with Canadian entities and other industry partners.
- The NPCC Board also suggests that the appropriate ERO committees work to develop risk metrics for transmission security and energy sufficiency, and to examine the risk balance provided by the current definition of an *adequate level of reliability* to re-affirm the industry's risk appetite and risk tolerance.

2. Top Priorities for NERC Over the Next Three Years

- The NPCC Board recommends that NERC focus its future efforts on 1) enhancing system resilience and assuring energy sufficiency; 2) reliably integrating the resources brought forward by societal de-carbonization objectives, including distributed energy resources; and 3) addressing cyber and physical threats.

For submittal to the November 5, 2020
NERC MRC and BOT Meetings
Affirmed by the NPCC Board of Directors
October 20, 2020

Cooperative Sector Policy Input to the NERC Board of Trustees
October 21, 2020

The Cooperative Sector appreciates the opportunity to provide policy input to the NERC Board of Trustees (BOT) for policy issues that will be discussed at the November 4/5 NERC MRC, BOT and BOT Committee meetings.

Summary of Policy Input

- *The Cooperative Sector commends NERC for developing the Framework to Address Known and Emerging Reliability and Security Risks.*
- *The Cooperative Sector provides several recommendations to consider addressing in the framework:*
  - *Provide additional explanation on how NERC utilizes data and information gathered as a result of compliance monitoring and enforcement activities;*
  - *NERC should consider developing criteria and other more detailed processes for use in determining risk severity, likelihood, and mitigation activity effectiveness; and*
  - *As experience is gained with the risk framework and associated processes, the ERO Enterprise should consider several potential areas for enhancement.*
- *The Cooperative Sector identifies the following as the three most important reliability and security matters that NERC should address over the next 3 years:*
  - *Changing resource mix and grid evolution*
  - *Evolving cyber and physical security threat landscape, with emphasis on cyber*
  - *Critical infrastructure interdependencies (including telecommunications, generation fuel, finance, transportation and water)*

Framework to Address Known and Emerging Reliability and Security Risks

1. Are there any ERO policies, procedures, and/or programs that are missing or need amplification?
   - The Cooperative Sector sees the overall risk framework presented in the whitepaper to be fairly robust and complete. We ask that NERC consider adding a paragraph to section I(1) (pg. 2 of the Whitepaper) to describe how the ERO enterprise utilizes data and information gathered as a result of compliance monitoring and enforcement activities in the overall risk framework, e.g., how data that is identified through audits and self-certifications, or other compliance monitoring activities contributes to the overall risk identification and prioritization process.

2. Does the iterative six-step risk management framework provide a sound basis for risk identification and mitigation?
   - The Cooperative Sector believes that the iterative six-step process provides a sound basis for risk identification and mitigation. However, to better promote consistency and the ability to trend risk-related observations and mitigation activity effectiveness over time, NERC should consider developing criteria and other more detailed processes for use in determining risk severity, likelihood, and mitigation activity effectiveness. The proposed framework relies heavily on the membership and expertise of its participants, e.g., the RSTC and the RISC. Both are committees with membership that changes over time, and risk identification and prioritization efforts include elements of subjectivity, which can make risk trending difficult. The addition of documented criteria and processes would address these realities and provide significant benefits for risk trending over time.

3. Are there any significant steps missing from the iterative risk management framework? If so, what steps do you propose adding?
    - The Cooperative Sector has not identified any significant steps that are missing, but we recommend that as experience is gained with the risk framework and associated processes, the ERO Enterprise consider the following potential areas for enhancement:
        - Additional clarity regarding how identified risks will be managed through the risk registry versus other methods (potentially through a heat map);
        - Addition of roles and responsibilities for the management of the risk registry and decision making regarding acceptable residual risk and appropriate mitigation activities; and
        - Additional clarity regarding how the ERO enterprise integrates into the risk framework its ongoing engagement with stakeholders, such as the ESCC, NATF, NAGF, EPRI, government partners, and trade organizations, as well as stakeholder involvement outside of these groups.

4. Are there any missing key elements in the RSTC/RISC triage approach? If so, what key elements do you propose adding?
    - The Cooperative Sector recommends revising section II(1), the risk identification and validation activities section (pg. 4 of the whitepaper), to more clearly describe how the holistic review of the identified risks, risk register, and the inherent risk identified, and overall risk register maintenance is performed when the inherent nature of an identified risk changes over time.

5. Is the multi-dimensional model shown in Figure 4 of the whitepaper complete?
    - The Cooperative Sector views the multi-dimensional model as a well-designed representation of the differing risk characteristics and potential responses. However, there is concern that, where extremely valuable tools like assist visits and "Technical Engagement" are applicable across the risk spectrum (high impact and low impact), the figure may not fully represent such value. To ensure that these critical elements are recognized, when using the model, we request that NERC consider clarifying that the tools are agile and cumulative e.g., listed tools may be applicable and available to address issues across the risk spectrum.

Top Priorities for NERC Over the Next Three Years

- What are the three most important reliability and security matters that NERC should address over the next 3 years?
    - Changing resource mix and grid evolution
    - Evolving cyber and physical security threat landscape, with emphasis on cyber
    - Critical infrastructure interdependencies (including telecommunications, generation fuel, finance, transportation and water)

Submitted on behalf of the Cooperative Sector by:
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NERC Board of Trustees
Teleconference
November 4-5, 2020
Policy Input of the Merchant Electricity Generator Sector

Sector 6, Merchant Electricity Generator Sector, takes this opportunity to provide policy input in advance of the upcoming North American Electric Reliability Corporation (NERC) Member Representatives Committee (MRC) and Board of Trustees (Board) meetings.

In a letter to MRC Chair Jennifer Sterling dated September 30, 2020, Board Chair Roy Thilly requested MRC input on two questions. Sector 6 makes the following comments in response.

Key Points

- The Merchant Electricity Generators support the Framework to Address Known and Emerging Reliability and Security Risks. The North American Generator Forum (NAGF) has identified some enhancements for consideration regarding the iterative six-step risk management framework in their input to the Board which we support and will not duplicate in our response.
- The Merchant Electricity Generators also support the NAGF input for the top priorities for consideration over the next three years. Once again we will not repeat their input.

Sincerely,
/s/
Sector 6 Merchant Electricity Generator Representatives:

Martin Sidor
NRG Energy, Inc.

Sean Cavote
PSEG

MEMORANDUM

TO: Roy Thilly, Chair
NERC Board of Trustees

FROM: Carol Chinn
William J. Gallagher
Roy Jones
John Twitty/Terry Huval

DATE: October 21, 2020

SUBJECT: Response to Request for Policy Input to NERC Board of Trustees

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The Sector 2 and 5 members of the NERC Member Representatives Committee (MRC), representing State/Municipal and Transmission Dependent Utilities (SM-TDUs), appreciate the opportunity to respond to your September 30, 2020 letter to Jennifer Sterling, Chair of the MRC that requested MRC member sectors to provide input on NERC's "Framework to Address Known and Emerging Reliability and Security Risks" whitepaper, as well as what should be three priorities for NERC to accomplish in the next three years. We look forward to discussing the policy input and other agenda items during the virtual meetings of the Board of Trustees (Board), Board committees, and the MRC, on November 4-5, 2020.

Summary of Comments

- **Risk Framework**
  - **SM-TDUs believe the Risk Framework steps are well formed and appreciate the effort.**
  - **The Framework needs more process and implementation detail.**
    - **Details regarding validation and addressing risk elements outside of the ERO's purview should be part of the Framework. Process transparency should be amplified.**
    - **A smaller triage group should be formed for risk validation and prioritization.**
- **NERC 3 Year Priorities**
  - **Improved Actionable Intelligence (E-ISAC strategic plan)**
  - **Standards Efficiency Review – Phase II**
  - **ERO Assisting with Engagement with Third Party Suppliers**

Risk Framework

The SM-TDUs appreciate the significant work that went into preparing the Risk Framework whitepaper that does a good job of beginning to lay out a process for addressing risks that face the security and reliability of the Bulk Electric System (BES). Further, the inclusion of the Reliability Issues Steering Committee (RISC) and RSTC in the process is appreciated. However, the process as laid out needs more detail on how the collaboration process with industry will work in practice and how priorities will be determined. Below the SM-TDU sectors offer comments on the Framework document and the Board's questions in the policy input letter. In doing so, the comments include recommendations on Framework areas where more detail on implementation of the process are offered.

Risk Framework Questions

1. Are there any ERO policies, procedures, and/or programs that are missing or need amplification?

Generally, the SM-TDUs believe that the Risk Framework paper process steps are well formed. However, what is not apparent from the process steps are specifics about how the collaborative process will work and decisions made, as the Framework steps are implemented. This is particularly true for the identification and prioritization steps.

For example, the RISC identified 10 risks in its 2019 report for either "management" or "monitoring." The Framework acknowledges collaboration with the RISC but does not offer specific details on how the 10 risks would be considered under the Framework and next steps decided. It would be helpful if the Framework paper detailed how management versus monitored risks would work within the Risk Framework process.

The Framework model appears to assume that all identified reliability and security risks will fall under the purview of the ERO and be completely mitigated by the ERO. This is simply not the case. Risks related to natural gas interdependency, electromagnetic pulse, and more recently telecommunication equipment and services, are just a few examples of issues that have several aspects that are not within the complete purview of the ERO to address or mitigate. SM-TDUs believe this is an important part of the process that needs to be detailed for the Framework to be effectively implemented.

Risk identification and validation needs to include a process that recognizes what is, and what is not, within the purview and control of NERC. Such recognition will help determine prioritization and the potential mitigations that the ERO can effectively pursue. Any ERO mitigation efforts that duplicates or works against mandates or guidelines outside of NERC's purview, would counterproductive and not be in the best interest of promoting grid reliability.

2. Does the iterative six-step risk management framework provide a sound basis for risk identification and mitigation?

As was characterized by NERC during the MRC pre-meeting webinar, the six-step risk management framework can be likened to the steps used by many risk-management processes.

Whether the basis is sound or not depends on the details associated with each step and how they are implemented. It is important for the process to be transparent. Stakeholders need to be engaged to identify on-the-ground operational risks and must be informed about risks from sources outside the industry.

All entities that engage with the ERO need to be aware of the risk process to understand what NERC is addressing and to what extent identified and validated risks present risk to the BES. The balance of the appropriate level of transparency will require the engagement of the ERO's counsel with stakeholders' counsel to determine the appropriate level of transparency for a given risk. In addition, direct engagement by the RISC is critical and appropriate RISC input should be obtained for leading risks. Further, the list of ways the ERO identifies risk on pages 4-5 of the Framework lays out a comprehensive list of ways that the ERO has established to identify risks.

As noted above, a place that SM-TDUs believe needs to be better detailed is once a risk is identified, to what degree is that risk the responsibility of the ERO before actual mitigation can be addressed. Identification, validation and prioritization all need to be considered as part of the process of determining to what extent and/or whether the risk is in the purview of the ERO. For example, is the scope of a security issue one of national security or is the security issue completely within the scope of the ERO to mitigate?

3. Are there any significant steps missing from the iterative risk management framework? If so, what steps do you propose adding?

The SM-TDUs do not believe there are steps missing but that there are process steps inclusive to the six steps, that need to be added and documented. Already mentioned are the validation/prioritization triage group, a process for distinguishing items outside of the ERO's purview and transparency considerations for each validated risk. Moreover, the MRC pre-meeting call identified the need for more detail on the formation and responsibilities for developing and maintaining the Risk Register, with which we agree.

4. Are there any missing key elements in the RSTC/RISC triage approach? If so, what key elements do you propose adding?

The SM-TDUs believe it would be useful for the process to include a specific smaller triage group that would be formed to initially evaluate, validate and prioritize risks. The group would both validate (or not) risks as they are presented and then prioritize validated risks. Validation and prioritization would be separate actions that could be done under the second step of the Framework steps. Rather than have risk consideration performed by 60 or more individuals (ERO Staff, RISC and RSTC), a smaller triage group would be more effective and efficient. Much like Standard Authorization Requests (SARs) can be offered by ERO Staff or the general public, the same would be true for risk consideration requests. SM-TDUs suggest the ERO Staff, RISC and RSTC each could select two members to serve on this validation group. The group then could add two subject matter experts (SMEs) for the particular risk under consideration. SM-TDUs believe these SMEs could come from Staff, the RISC or RSTC. Additionally, SMEs from the Standards Committee and the Compliance and Certification Committee (CCC) should be considered.

Especially when mitigation is under consideration, the CCC is a key group that should be included in the process. SM-TDUs believe it would be valuable to include the CCC with respect to mitigation decisions because this is an area that they have specific experience with and can provide

valuable input. The CCC will have the best grasp on what mitigation tools are in use today and can most efficiently recommend what tool(s) can best be used going forward. An example of a key area that has been discussed but not resolved, would be how low risk standard requirements can be moved to guidance (SER Phase II).

5. Is the multi-dimensional model shown in Figure 4 of the Whitepaper complete?

The Figure 4 model provides a conceptual view of when existing NERC tools will generally be employed based on risk timing and impact. For current purposes the model is generally complete. Currently, the model does not include dynamic forces outside of the ERO. As mentioned earlier there are risks that are not (completely) included in the purview of the Figure 4 model that can and will impact the timing and impact of risks. Going forward it should be noted the model leaves little room for change, or for new mitigation methods and for integration of mitigations shared with other industries.

NERC 3 Year Priorities

The Board requests policy input on the three most important reliability and security matters that NERC should address over the next three years. Chair Thilly put a finer point on the question during the MRC pre-meeting call saying that it would be the 3 issues that NERC should accomplish over the next three years. Below are 3 items (in no particular order) that the SM-TDU's believe NERC should address/accomplish over the next three years.

Improved Actionable Intelligence

Having actionable intelligence to ensure security is an issue that stakeholders believe needs to improve. Recent concerns such as the Executive Order on the Bulk Power System (BPS) and recent FERC Notice of Inquiries (NOIs) have highlighted this need.

The E-ISAC's revised business plan, as the SM-TDUs provided policy input in May 2020, is designed to improve the quality of the information provided to industry. SM-TDUs are encouraged by the plan as addressing this priority and look forward to its effective execution over the next three years.

Standards Efficiency Review

SM-TDUs believe that NERC should enhance staff resources on the Standards Efficiency Review (SER) project, including the review of the Critical Infrastructure Protection (CIP) standards. The Draft Standards Development Plan mentions Phase II and that it has been delayed by COVID-19. Stakeholders understand this delay, but still believe more could be done in the present that will provide significant efficiencies to improve ERO effectiveness over the next 3 years. Importantly, if NERC were to provide a comprehensive update of the achievements from the effort thus far and next steps, this would be valuable and appreciated by stakeholders.

A dedicated effort to transform standard requirements from administrative-based to results-based will allow registered entities and the ERO to increase focus on measurable security and reliability outcomes. Delaying the SER project also delays these efficiencies. SM-TDUs believe it is time to revitalize this work and that it should be accomplished as a priority as soon as possible.

ERO Assisting with Engagement with Third Party Suppliers

The risk associated with equipment and services from third parties has been highlighted by supply chain risk concerns. First, the risk was highlighted by the evolution of CIP-013. Registered

entities were concerned about their lack of leverage with suppliers, especially for smaller utilities. This concern became more complex when supply chain risk was associated with national adversaries. Cloud and virtualization technologies add another layer of complexity to the appropriate protocols for dealing with suppliers within the ERO regime. Stakeholders need NERC's assistance in bridging the gap with third parties to mitigate risk. Regardless of size, Registered Entities' leverage with suppliers is minimal, especially for smaller utilities, and ERO engagement and clarity will be key in alleviating the complexity of mitigating risks with third parties.