

April 5, 2022

Mr. Roy Jones, Chair  
NERC Member Representatives Committee

Dear Roy:

I invite the Member Representatives Committee (MRC) to provide policy input on a matter of particular interest to the NERC Board of Trustees (Board) as it prepares for its May 11-12, 2022, meetings in Arlington, VA. 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 1) and are attached hereto (**Attachment A**). The MRC's May 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.**

### **Strengthening Industry Action to Address Emerging Risks**

NERC and the Regional Entities (collectively, the ERO Enterprise) continuously collaborate with industry to identify risks to the bulk power system (BPS) and deploy mitigation strategies in support of its mission to assure the effective and efficient reduction of risks to the reliability and security of the grid. Currently, industry is facing risks to reliability that are emerging quickly and requiring an accelerated response, such as the impacts of environmental conditions (including extreme weather) on resource energy availability and the integration of large amounts of inverter-based resources. As emerging risks are identified, the ERO Enterprise uses a mix of mitigation activities, balanced against both the effective and efficient use of resources and the potential risk impact and likelihood. These mitigation activities include, but are not limited to, NERC Alerts, Reliability Guidelines, Reliability Standards, compliance guidance, lessons learned, site visits, and technical tutorials, conferences, and workshops. Recent experience has shown that the mix of mitigation activities without required industry actions do not sustain long-term mitigation of emerging risks and require additional actions, including Reliability Standards or Level 3 Alerts to address to risks.

For example, as further described in the [MRC Informational Session agenda package](#) (see Item 2a), the integration of inverter-based resources is accelerating and significant amounts of these resources cease or reduce energy production during system faults just when needed to support the reliability and resilience of the BPS. In an effort to address this emerging risk, since 2017 the ERO Enterprise has engaged industry using the following: (1) technical content and analysis through the Reliability and Security Technical Committee's Inverter-Based Resource Performance Subcommittee; (2) disturbance reports from over ten

3353 Peachtree Road NE  
Suite 600, North Tower  
Atlanta, GA 30326  
404-446-2560 | [www.nerc.com](http://www.nerc.com)

events involving widespread loss of solar photovoltaic resources; (3) two Level 2 NERC Alerts; (4) multiple Reliability Guidelines; (5) Institute of Electrical and Electronic Engineers (IEEE) engagement as they developed Standards 1547 and 2800 to improve interconnection and performance; and (6) a Compliance Monitoring and Enforcement Program (CMEP) Practice Guide. The ERO Enterprise has also recommended improvements to FERC generator interconnection procedures and agreements. Further, industry submitted two Standard Authorization Requests which were rejected by the Standards Committee in 2018.

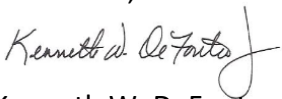
After deploying these mitigation approaches, the risk of unreliable performance from BPS-connected inverter-based resources remains high, as we continue to see hundreds to thousands of megawatts generated by inverter-based resources come off line during faults on the system. The ERO Enterprise remains concerned with BPS performance, modeling, planning and study approaches, and is urging immediate industry action to address this quickly emerging risk to reliability and resilience of the BPS.

**The Board requests MRC policy input on the following:**

- 1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**
- 2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

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 **April 27, 2022**, to Kristin Iwanechko, MRC Secretary ([Kristin.Iwanechko@nerc.net](mailto:Kristin.Iwanechko@nerc.net)). The formal agenda packages for the Board, Board Committees, and MRC meetings will be available on April 28, 2022, and the presentations will be available on May 5, 2022. The Board looks forward to your input and discussion of these matters during the May 2022 meetings.

Thank You,



Kenneth W. DeFontes, Jr., 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  
April 12, 2022

**RELIABILITY | RESILIENCE | SECURITY**



- Review schedule and preliminary agenda topics for the May 2022 Board, Board Committees, and MRC meetings
- Review policy input letter topic
  - Strengthening Industry Action to Address Emerging Risks

- **April 5:** Policy input letter issued
- **April 27:** Written comments due on policy input topics and preliminary agenda topics
- **April 28:** Board and MRC agenda packages and policy input letter comments posted
- **May 5:** Board and MRC presentations posted
- **May 11-12:** Board Committee, Board, and MRC open meetings

# Schedule of May 11-12 Board and MRC Open Meetings

| Wednesday, May 11, 2022 |   |
|-------------------------|---|
| 8:45 a.m.-9:45 a.m.     | Finance and Audit Committee Meeting— <u>Open</u>                        |
| 10:00 a.m.-11:00 a.m.   | Technology and Security Committee Meeting— <u>Open</u>                  |
| 11:15 a.m.-12:00 p.m.   | Corporate Governance and Human Resources Committee Meeting— <u>Open</u> |
| 1:00 p.m.-4:00 p.m.     | Member Representatives Committee Meeting — <u>Open</u>                  |
| Thursday, May 12, 2022  |   |
| 8:30 a.m.-12:00 p.m.    | Board of Trustees Meeting— <u>Open</u>                                  |

- Review First Quarter Calendar of FAC Responsibilities
  - 2021 Financial Statement Audit Results
  - First Quarter Statement of Activities
    - NERC Summary of Results as of March 31, 2022
    - Total ERO Enterprise Summary of Results as of March 31, 2022
    - Regional Entity Variance Reports as of March 31, 2022
- 2023 Business Plan and Budget Update

- E-ISAC Operations Update
- ERO Enterprise Align Project Update



- Approve Proposed Amendment to Nominating Committee Mandate
- Review Board Committees' Self-Assessment Surveys Results
- Human Resources and Staffing Update

- Future Meetings
- General Updates and Reports
  - Board of Trustees Nominating Committee Update
  - Business Plan and Budget Input Group Update
  - Regulatory Update
- Policy and Discussion Items
  - Responses to the Board's Request for Policy Input
    - Strengthening Industry Action to Address Emerging Risks
  - Additional Policy Discussion of Key Items from Board Committee Meetings
  - MRC Input and Advice on Board Agenda Items and Accompanying Materials

- **Technical Updates**
  - FERC Reliability Matters
  - Bulk Power System Situation Awareness
  - Update and Next Steps on Energy Availability SAR
  - Coordination and Engagement with Organizations Across the Reliability Ecosystem

- Committee Membership and Charter Amendments
- Governance Documents Amendments
- Report on the April 14, May 9, and May 12, 2022 Closed Meetings
- Board Committee Reports
  - Approve Proposed Amendment to Nominating Committee Mandate
  - Accept 2021 Financial Statement Audit Results
  - Accept First Quarter Statement of Activities
- Standards Quarterly Report and Actions
  - Adopt Regional Reliability Standard FAC-501-WECC-3-Transmission Maintenance
  - Adopt Project 2016-02 Modifications to CIP Standards
  - Adopt Project 2020-05 Modifications to FAC-001 and FAC-002
  - Adopt Project 2020-03 Supply Chain Low Impact Revisions

- **Standards Quarterly Report and Actions (cont.)**
  - Cold Weather Standard Development Update
  - Standards Process Improvement Opportunities
  - Critical Infrastructure Protection Board Resolution Update
- **Other Matters and Reports**
  - Discuss Policy Input and MRC Meeting
  - Approve Quebec Memorandum of Understanding Amendments
  - 2022 Summer Reliability Assessment Preview
  - 2022 State of Reliability Report Preview
  - 2022 ERO Enterprise Reliability Indicators Update
- **Committee, Forum, and Group Reports**



# Questions and Answers

## MEMORANDUM

**TO:** Ken DeFontes, Chair  
NERC Board of Trustees

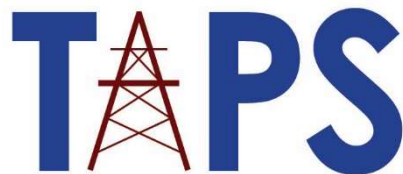
**FROM:** John McCaffrey, Senior Regulatory Counsel, American Public Power Association  
John Di Stasio, President, Large Public Power Council  
Terry Huval, Executive Director, Transmission Access Policy Study Group

**DATE:** April 27, 2022

**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 Ken DeFontes' April 5, 2022, letter requesting policy input in advance of the May 11-12, 2022, NERC Board of Trustees meetings.



## NERC Board of Trustees Policy Input - Q2 2022

Electricity Canada appreciates this opportunity to provide policy input to the NERC Member Representatives Committee (“MRC”) and Board of Trustees (“Board”).

### Summary of Key Points:

#### *Question 1:*

- Stakeholder feedback from this policy input letter should be considered along with that from the Q4 2021 policy input letter.
- The ERO Enterprise and industry should work closely on, and share the outcomes of, analysis on emerging risks and threats.
- NERC staff, RSTC and RISC committee members could be deployed to assess emerging risks and develop timelines over which mitigating actions should occur. For some risks, prompt outreach to executives of industry segments that might be affected may be warranted.
- Efforts could be made to close gaps in reliability guidelines using standards.
- Where there are identified reliability gaps outside of NERC’s scope, there could be proactive engagement with other regulators and industry partners.
- NERC should continue to review the current standards development process to find areas where changes could be made, without forgoing the ANSI accreditation process.
- NERC may wish to consider encouraging utilities to pursue early implementation of an approved standard in advance of it coming into effect, and also work to enable this.

#### *Question 2:*

- Efforts could be made to accelerate the creation, adoption or modification of industry standards related to inverter-based resources, while still ensuring an ANSI accredited process.
- Data monitoring and acquisition is crucial when integrating inverter-based resources.
- The ERO Enterprise and industry could work together to address the need for ancillary services.
- Level 3 NERC Alerts could potentially be appropriate tools to drive action on inverter-based resource risks. NERC should clearly communicate the process and the need for such an Alert, if that is a direction pursued.

### Strengthening Industry Action to Address Emerging Risks

Electricity Canada appreciates NERC’s focus on ensuring appropriate tools are available to, and deployed by, industry to help effectively manage emerging BPS reliability risks that may require an accelerated response.

In this rapidly evolving reliability landscape, the entire reliability community must continue to adapt and work together to respond to emerging risks requiring swift response. While this policy input letter is focussed on enabling industry action, Electricity Canada recommends that NERC connect feedback







received on this letter with that provided by Electricity Canada and other stakeholders from the Q4 2021 policy input letter on ‘*Opportunities for Improving ERO Enterprise Agility*’.<sup>1</sup> This can help ensure efforts to manage risks within this reliability environment are complementary.

**Question 1: How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

In the face of geopolitical risks, climate change, supply chain issues, changing technologies, new policy demands, and an evolving resource mix, information exchange is crucial.

The ERO Enterprise and industry should work closely on, and share the outcomes of, analysis on emerging risks and threats. This includes sharing analyses on climate change and extreme weather. Additionally, information exchange on cyber threats and other risks that may affect BPS reliability, such as qualified labor shortages, employee mobility and remote work may be advantageous.

Information exchange can help us learn from each other, ensure a robust picture of the security and reliability landscape which includes regionally specific considerations, and help drive better decision making and outcomes. Exchanging information can also help to avoid duplication of efforts, and ensure that NERC and industry focus on their areas of expertise.

Further, as emerging risks are identified, NERC could utilize staff, RSTC and RISC committee members to assess emerging risks and develop the timelines over which mitigating actions should occur. This can help ensure that NERC and industry are focussed on what matters most for BPS reliability, and is within NERC’s jurisdiction. For some fast-developing risks, prompt outreach to executives of industry segments that might be affected may be warranted in certain cases. This can help raise awareness beyond an operational level.

Efforts could also be made to close gaps in reliability guidelines using standards. Where guidelines have proven insufficient to address risks, a standards development process could be initiated for areas within NERC’s scope. Ensuring industry groups like EPRI or IEEE participate on standards drafting teams could augment technical expertise, and serve to avoid overlap between parallel efforts.

Where there are identified reliability gaps outside of NERC’s scope, there could be proactive engagement with other regulators and industry partners to close those gaps. Finally, NERC should continue to review the current standards development process to find areas where changes could be made or where steps could potentially be eliminated, without forgoing the ANSI accreditation process that forms the foundation for sound standards making.

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<sup>1</sup> [Policy Input – Board of Trustees Meeting – November 4, 2021](#). “NERC Board of Trustees Policy Input – Canadian Electricity Association”. Page 17-18.





NERC may also wish to encourage utilities to pursue early implementation of an approved standard in advance of it coming into effect. NERC and other regulators can help to enable this by working to assist with any needed coordination, or to ensure there is not an unnecessary duplicate compliance burden if a utility is complying early with an approved standard meant to replace an existing one. Earlier implementation could allow high-risk areas or entities to more rapidly address the identified risk the standard serves to mitigate, and could also provide an opportunity for early feedback and learnings on issues like compliance, costs, and potential future changes to the standard.

**Question 2: Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

Electricity Canada agrees that it is important that appropriate actions be taken to address known reliability gaps with BPS-connected inverter-based resources.

That said, Electricity Canada recognizes that the speed of integration of inverter-based resources is happening faster than the typical speed of standards adoption. As such, efforts could be made to accelerate the creation, adoption or modification of industry standards, while still ensuring an ANSI accredited process.

Second, it is worth considering that data monitoring and acquisition is crucial when integrating inverter-based resources, and that the impact of distributed inverter-based resources (“DER”) on the BPS should not be underestimated. System operation with large amount of DER can be challenging if there is a lack of data. Such resources can hide real (gross) load, and data is often not available. This represents an operational reliability risk, and a challenge when analyzing past events.

Third, the ERO Enterprise and industry could work together to address the growing need of ancillary services. With the decrease in the number of synchronous machines on the system in many cases, ancillary services such as frequency response tend to become critical. Inverter-based resources could have the ability to offer such services if design and technical requirements are planned accordingly.

Finally, Level 3 NERC Alerts could potentially be appropriate tools to drive action on inverter-based resource risks. Electricity Canada recommends that NERC clearly communicate the process and the need for such an Alert with relevant stakeholders, if that is a direction pursued.

## **Consultations**

Electricity Canada acknowledges the comments made by Edison Elizeh in his role as representative of the Portion of Sector 4 representing Federal Utilities and Federal PMAs. Particularly, there is support for the comments made for Question One.





Electricity Canada appreciates the ongoing stakeholder engagement regarding this evolving issue, and looks forward to further discussion at the upcoming NERC Board meeting in May.

**Dated:** April 27, 2022

**Contact:**

Francis Bradley  
President & CEO  
Electricity Canada  
Bradley@electricity.ca





Edison Electric  
INSTITUTE

*Power by Association*

## **Policy Input for the NERC Board of Trustees Provided by the Edison Electric Institute April 27, 2022**

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 May 11 – 12, 2022, 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 Technical Committee.

In the April 5, 2022, policy input letter, NERC Board of Trustees Chair, Kenneth W. DeFontes, Jr., seeks stakeholder input on how the ERO Enterprise and industry can address emerging risks to the reliability and resilience of the BPS. EEI offers the following input.

### **I. SUMMARY OF COMMENTS**

- EEI supports strengthening the partnership between the ERO Enterprise, industry, and government agencies with a focus on prioritizing emerging and escalating risks to reliability that avoids duplicating efforts.
- Reliability Guidelines (Guidelines) can be more effective with refinements to ensure their recommendations are clear and effective, not duplicative of other existing Guidelines, follow a common template, and are easy to find on the NERC website.
- If existing processes need enhancement, including the standards development process, EEI is eager to work collaboratively with NERC to develop agile and constructive recommendations.
- To ensure the highest priority risks are adequately addressed, EEI recommends that the ERO Enterprise ensure that the Compliance Monitoring and Enforcement Program matures to implement a risk-based approach.
- EEI supports Compliance Guidance transparency and the consistent application of the principles established in the Compliance Guidance Policy to ensure Compliance Guidance does not interpret or create new requirements.

## **II. COMMENTS**

The Board of Trustees seeks policy input on how the ERO Enterprise, and industry can address emerging risks to the reliability and resilience of the BPS.

Given the dynamic nature of the grid and evolving and expanded threats to reliability, EEI members constantly seek ways to adapt to and address these challenges in an efficient and agile manner. As discussed below, prioritization, partnerships, and processes are and will continue to be critical to enhancing reliability and resilience.

### **Priorities and activities should be risk-based.**

With new, emerging, and/or escalating risks to BPS reliability, taking full advantage of the Framework to Address Known and Emerging Reliability and Security Risks (Framework) should ensure that these risks are resourced, prioritized and addressed appropriately. Given that the Framework has been in effect for just over a year, any new or perceived gaps in the Framework should be addressed through updates or revisions to the Framework rather than through the development of a new process.

Naturally, every risk cannot be addressed simultaneously. To that end, the Reliability Issues Steering Committee (RISC) and Reliability Security and Technical Committee (RSTC) standing committees are charged with identifying, prioritizing, and mitigating risks and are integral to a disciplined and efficient process for addressing new or emerging risks. NERC should amplify the use of these committees and the industry expertise within their membership to prioritize and address risks to the BPS.

More broadly, the rapidly changing grid and emerging risks to the BPS are stretching critical and limited resources, especially subject matter experts. To ensure the highest priority risks are adequately addressed, it is imperative that the Compliance Monitoring and Enforcement Program continue to mature and implement a risk-based approach. This approach will provide increased agility for the entirety of the reliability ecosystem to allow critical subject matter experts and resources to focus on the highest and most important reliability and security issues.

### **Enhancing the ERO Enterprise/stakeholder partnership and processes will aid in addressing reliable operation of the grid.**

Some of today's challenges facing industry cross multiple jurisdictions or currently only impact certain regions or impact regions differently (weather, fuel assurance, etc.). Coordination and collaboration with industry and the appropriate governmental authorities at the outset will generate better results in solving emerging risks that cross multiple jurisdictions. Additionally, there are other groups working on these same issues, such as Federal agencies, EPRI, NATF and the

IEEE; NERC should find ways to be synergistic and collaborative to avoid duplicating efforts.

EEI members value the NERC committees and processes that allow for stakeholder collaboration and input. Stakeholder input is a key component to the success of these committees and working groups. While developing problem statements, receiving industry feedback, and allowing for adequate discussion can take time, this upfront committee work ensures timely project success. Partnering to refine and improve existing processes in lieu of creating new processes is worthy of exploring and may be a more effective and agile means to address reliable operation of the BPS.

For example, Guidelines have been used for a number of years and have proven to be effective. However, current Guidelines can exceed 60 pages and, consequently, may not provide clear prioritization, information on the recommended actions to be taken, and applicability or who should take the action. EEI recommends that the ERO Enterprise, working through the RSTC and industry, review and update the Guidelines to ensure the recommendations and expectations are clear and effective, are not duplicative with other existing NERC tools, follow a common template, do not conflict with existing published documents, identify applicability or who should take the action, and are easily accessible on the NERC website.

EEI supports improving the effectiveness and agility of NERC while ensuring the continued use of foundational, time-tested, and FERC-endorsed processes that reflect the statutory obligations for standards development. However, agility cannot be done to the detriment of the transparency, engagement, and collaboration that is critical between all involved parties to ensure both stakeholders and NERC have the same understanding of the issues, risks, gaps, and priorities. A common understanding is vital to successfully solving complex problems effectively and efficiently. While NERC is looking to be more agile, truncating the standards development process and creating a more abbreviated timeline that removes opportunities for collaboration with stakeholders for developing standards could create greater inefficiencies by shifting discussion and deliberation to FERC, thereby extending the FERC approval process and delaying the implementation of standards, which would actually decrease agility.

For example, in early 2022, NERC made the decision to remove restrictions on the dissemination of critical compliance information from the NERC CIP-014 Physical Security Standard. Because NERC did not provide a meaningful opportunity for industry to collaborate with the ERO Enterprise and discuss the proposed modification, including its impacts on reliability and security, industry had to voice its concerns through the FERC rulemaking process, which has further delayed resolution of how to protect critical compliance information.

To support an effective and efficient standards process, a clearly identified and prioritized problem with appropriate technical justification is essential. The Standards Authorization Request (SAR) is the vehicle to provide this critical information, and industry has proven the current standards process is efficient, effective, and flexible enough to address the issue quickly when the problem statement and reliability gap in a SAR is clear and well understood. For example, the NERC Standard, CIP-014, written by industry to address Physical Security risks was developed in less than sixty days. Similarly, the Supply Chain Standard, CIP-013, was developed by industry in approximately 6 months. Continuing a collaborative process will ensure industry and NERC are aligned and working on the most important issues in the most effective, efficient, and agile way.

Additionally, one of the proposed suggestions, by way of example, for improved agility is to remove the final ballot from the standards drafting process. As described in the NERC Rules of Procedure, the final ballot is a very short ten-day timeframe but more importantly provides a valuable mechanism for a standards drafting team to make non-substantive revisions. This allows for “correcting the spelling of a word, adding an obviously missing word, or rephrasing a Requirement for improved clarity.”<sup>1</sup> The final ballot was recently used for changes to FAC-001 for this very reason. Absent the option for the final ballot, the longer duration of the additional ballot would have been necessary. Any changes to the standards process must consider the potential for introducing new inefficiencies. EEI members look forward to partnering with the ERO Enterprise to discuss ways to improve process agility while balancing the need for a successful, transparent, and open stakeholder process.

### **Analysis and coordination are needed to address inverter-based resource performance.**

Integration of inverter-based resources is increasing. However, it is not clear how many of these resources are being connected at the local distribution level which is a state jurisdictional issue. Additionally, some legacy inverter-based resources are not able to support NERC’s implied performance expectations during a fault. EEI encourages NERC to conduct an analysis to determine whether it is NERC registered entities that need to follow the guidance developed by NERC or whether the issue exists with those entities that own local distribution facilities. This analysis will be instrumental in identifying the source of the concern. Outreach and coordination with states, FERC, and developers/vendors are additional actions that will be beneficial, and in some cases necessary, to help address many of challenges identified with inverter-based resources.

NERC’s recent recommendation to identify improvements for inverter-based information in FERC generator interconnection procedures and agreements should

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<sup>1</sup> See NERC Rules of Procedure, Appendix 3A, Standards Process Manual at 20.

yield benefits but modifying and implementing revised agreements and procedures through the FERC regulatory approval process will take time.

Additionally, it is important to underscore that Standard 2800 developed by the Institute of Electrical and Electronic Engineers (IEEE) to improve interconnection and performance of inverter-based resources has not yet been published. Similar to Reliability Standards, it will take a period of time after the standard is implemented before we can determine if IEEE Standard 2800 will be effective.

Continuing prioritization, partnerships, and robust processes will ensure industry and NERC are aligned and working on the most important issues in the most effective and efficient way to enhance grid reliability and resilience.

### **III. OTHER POLICY INPUT**

In 2015, industry and the ERO Enterprise collaborated to establish the Compliance Guidance Policy. It includes Implementation Guidance to assist registered entities with the implementation of standards and CMEP Practice Guides for the ERO Enterprise to provide direction to ERO Enterprise CMEP staff on executing compliance and enforcement activities. Principles for guidance include, among other things, that Guidance documents cannot change the scope or purpose of the requirements of a standard and that Guidance should be developed collaboratively and posted on the NERC website for transparency.

However, recent CMEP Practice Guides appear to deviate from the Compliance Guidance Policy and change the scope of standards. For example, the CIP-014 CMEP Practice Guide dated November 18, 2021, and published January 13, 2022, requires registered entities to perform a dynamic stability analysis to demonstrate compliance, which is not a requirement in the standard. Already, Regional Entities are using the CIP-014 CMEP Practice Guide to identify retroactive potential non-compliance if an entity has not previously conducted a dynamic stability analysis prior to January 2022. In addition, the CIP-014 CMEP Practice Guide appears to conflict with ERO Enterprise endorsed Implementation Guidance that was publicly posted on May 4, 2017, that includes stability analysis as one method for complying with standard. It appears the prior ERO-endorsed guidance is not being considered, and auditors are assigning precedence to the new CIP-014 CMEP Practice Guide. These examples illustrate that partnership and transparent, wide-spread communications and collaboration with stakeholders on such an important change to expectations is critical.

Another example of a CMEP Practice Guide that appears to set a new expectation for industry is the Application of the Bulk Electric System Definition to Battery Energy Storage Systems (BESS) and Hybrid Resources that was published on February 2, 2021. Figures included in the BESS CMEP Practice Guide include facilities that are assumed to be part of the Bulk Electric System. However,



including elements or facilities in this manner is inconsistent with how an entity, whether a registered entity or a Regional Entity, determines that an element qualifies as part of the Bulk Electric System as described in NERC Rules of Procedure 5B and the 5C Exception Process and in FERC Order Nos. 773 and 773-A. EEI recommends that NERC should refrain from using the BESS CMEP Practice Guide to determine whether a BESS hybrid generation resource is part of the Bulk Electric System in place of the Rules of Procedure 5C Exception Process. As we have noted throughout our policy input, the grid is indeed changing, and use of BESS and hybrid resources are a part of this change. Whether they should be part of the Bulk Electric System is an open question and should be addressed through revisions to the Bulk Electric System definition using the appropriate NERC and corresponding FERC regulatory approval processes.

Compliance Guidance is a valuable tool, and EEI supports continued transparency to ensure that the ERO Enterprise continues to follow the principles established rather than interpreting or creating new requirements. It would be helpful for CMEP Practice Guides to clearly align with the principles established in Compliance Guidance Policy so that all of industry is aware of changes prior to publication. If the CMEP Practice Guides set new expectations that contradict prior guidance, EEI recommends that NERC and the Regional Entities conduct outreach and partner with industry to ensure widespread awareness of new expectations while allowing for a reasonable implementation period. Finally, EEI suggests that NERC establishes a process for addressing conflicts between Implementation Guidance and CMEP Practice Guides.

Thank you for the opportunity to provide policy input.

**TO:** Kenneth W. DeFontes, Jr., Chair  
NERC Board of Trustees

**FROM:** Edison G. Elizeh  
Federal Utility/Federal PMA Portion Sector 4

**DATE:** April 27, 2021

**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 April 5, 2022 letter to Mr. Roy Jones, Chair NERC Member Representative Committee, requesting input on certain policy issues. The Federal PMAs appreciate the opportunity to provide comments on the policy input of particular interest to the NERC Board of Trustees (Board) for their May 2022 meeting.

- The Federal PMAs have no further input on the Board and MRC's agenda. The items listed in draft agenda adequately represent the issues the Board and MRC need to discuss and approve.
- Federal PMAs share the concerns the Board and NERC Management and Staff have regarding these emerging risks. The ERO Enterprise should take a much more active role developing an educational program to discuss and share information regarding these emerging risks and to facilitate discussions among the industry and regulatory bodies to overcome the barriers resulting from multiple federal, state, and local jurisdictions. The next best thing the ERO Enterprise can do is to have in place appropriate standards that are technically sound, clearly written, implementable, and enforceable and have regulatory support across all jurisdictions. Furthermore, these standards need to apply to the components/sectors of the industry who are in the best position to address the particular risk and not to put the burden on a particular sector that has no direct control over the issue.
- The Federal PMAs have put forward some specific recommendations to be considered for Inverter Based Resources in response to the Board's questions.

The following are more specific responses to questions asked by the Board in the Policy Input Letter;

- 1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

The Federal PMAs believe there are a number of rapidly emerging risks to the power system that the industry, the ERO, and the appropriate regulatory bodies need to address. We have communicated these risks in the response to the Q4, 2021 policy input request. The Federal PMAs worked with members of the Reliability Issues Steering Committee (RISC) that resulted in publication of the 2021 RISC report. And have been working with members of the Reliability & Security Technical Committee (RSTC) in prioritizing and road mapping of addressing these risks and assigning them to the appropriate committees and work groups. The Federal PMAs will continue to work collaboratively with the ERO Enterprise to address the fast emerging risks and recommend best course of action to mitigate the identified risks.

The Federal PMAs recommend that one of the first things to do is to establish a common understanding of the elements of risk, then determining the right venue to assign that risk to, including identifying the right industry component/sector associated with it. For example; should it ultimately be assigned to the Generator owners /operators (GO/GOP), or to the Transmission Owners/Operators (TO/TOP), or to the Balancing Authorities (BA), or assigned to the Load Responsible Entities /Load Serving Entities (LRE/LSE)? The next important step by the ERO is to address these risks with appropriate standards that are technically sound, clearly written, implementable, and enforceable. Furthermore, these standards need to apply to the component/sector who are in the best position to address the particular need. i.e no reason to develop standards on resource adequacy that applies to the GO/GOP or TO/TOP or BAs when the LRE/LSE determine what type of generation resources to construct and acquire with its fuel type, and what type of transmission service arrangement they construct and acquire for service to their load.

The ERO should also encourage federal regulators, state regulatory bodies & local government to adopt or modify their rules and tariffs, as appropriate, to support and align specific efforts that address the emerging risks. It has been recognized of the jurisdictional challenges the industry faces between federal and state agencies and local government. The ERO is uniquely positioned to help address these challenges,, given its mission to maintain a reliable and secure system and that it was established by federal statute, to provide information and to educate regulators, elected officials (federal, state, and local), equipment manufacturers, and the general public about these emerging risks and what is needed in order to address them. These are key stakeholders and their well-informed participation is essential to successfully meet these risks and overcome the current jurisdictional barriers that might be out there.

Lastly, the ERO should streamline its standards development process so that new standards that are needed to address these emerging risks can be developed and implemented in a timely manner.

**2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

The Federal PMAs recommend that the Inverter Based Resources Performance Subcommittee (IRPS) continue to work closely with the industry, developers, and equipment manufacturers to improve the reliability performance of the inverter-based resources (IBR). The IRPS recommended that Electro Magnetic Transient (EMT) modelling, properly performed as part of interconnection studies, would identify the majority of the problems associated with IBRs. And a team to draft a Standards Authorization Request (SAR) was created and their recent recommendation is to add specific EMT modelling requirements to current standards (FAC-002, MOD-032, and TPL-001 standards).

One very important thing that should be included in the standards is a requirement for IBRs to confirm through actual system tests that the controls on the resources are functioning as intended and to not simply rely on modeling alone.

Unfortunately utilization of current standards brings other issues that are worth noting as part of the response to this question.

- The IRPS recommended that EMT modelling, properly performed as part of interconnection studies, would identify the majority of the problems associated with IBRs. Part of the recommendation is to add specific EMT data for modelling requirements in MOD-032 standard. Such action might be inappropriate. Perhaps a new standard for EMT models should be considered. Current MOD-032 is for the powerflow, short-circuit, and dynamic studies with modeling of a single-phase equivalent of a 3-phase network to analyze overload, and static and dynamic voltage response. EMT studies model a full 3-phase network which is completely a different model for a different purpose from everything else collected under MOD-032. Also MOD-032 assumes the TO/TOP does an annual collection of the modeling data and not sure if this on-time data collection effort for the interconnection study passes the regional entity requirements. Perhaps a new standard for EMT models should be considered.
- NERC should continue expediting the work plan of IRPS in publishing a guide on performing EMT studies with common models and techniques for IBRs. But revisions to existing standards that govern frequency and voltage ride-through or disturbance ride-through capabilities (like PRC-024) will be more effective in improving IBR performance. Assigning more responsibility to the appropriate entities, like generator owners and operators, will improve enforceability of the desired IBR performance requirements. Perhaps even requiring an IBR project developer either to self-certify or seek a third party certification of the requirement imposed via the new standards. As other industry changes like IEEE-p2800 and stricter Transmission Provider interconnection requirements become ubiquitous, IBR developers will organically improve their

performance. But those improvements could take several more years, as the industry changes proliferate down to the device manufacturer level.

- The Federal PMAs will continue discussing with IRPS Members & NERC Staff on these recommendations.

The Federal PMA support the comments provided by the Canadian Utilities in Sector 4 and 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

April 27, 2022

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The ISO/RTO Council<sup>1</sup> (IRC) offers the following input to the Member Representatives Committee (MRC) in response to Mr. Kenneth W. DeFontes, Jr.'s, letter dated April 5, 2022 on **Strengthening Industry Action to Address Emerging Risks**.

Grid Transformation is happening and NERC needs to stay in front of the likelihood and impact to reliability that inverter-based (solar and wind) resources (IBRs) pose. The inability of IBRs to ride through faults has led to six (6) Major Events within a five (5) year period. Large scale IBR events (typically involving a loss of approximately 1,000 MWs or more) have occurred in both the Western and ERCOT interconnections to date. As IBR growth continues to impact the Bulk Power System (BPS), the risk of such events is increasing in the Eastern Interconnection as well.

## **Summary of IRC Comments**

The ISOs/RTO Council is supportive of NERC's efforts to reduce emerging risks to the BPS and particularly those associated with IBRs. NERC should make sure that standards directed towards IBR asset owners are issued promptly to address the risks they currently pose. Continuing to impose standards only on wide-area entities, such as Balancing Authorities and Planning Coordinators, will not completely eliminate the risk IBRs pose to the BPS. Moreover, NERC's primary tool to close IBR risks is hindered because the current Standard Development Process (SDP) is not keeping pace with emerging risks.<sup>2</sup> We offer some suggestions that NERC can use to expeditiously address emerging risks until standards can be developed.

### **1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

- Revise the Standard Grading Criteria to more heavily weight emerging risks
- Incorporate actionable timeframes into the Risk Framework
- Revise Standards Development Process to eliminate steps not needed to meet ANSI Principles
- Once developed, enable the implementation of Standards prior to the effective date
- Institutionalize a formal process to close gaps identified in Reliability Guidelines via Standards
- Industry organizations such as EPRI or IEEE should be invited to advise Standard Drafting Teams
- Proactively engage other regulators and industry partners to close reliability gaps outside NERC's Jurisdiction

### **2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

- Revise the Bulk Electric System (BES) Definition to incorporate smaller IBR resources (<75 MVA)
- Issue Level 3 NERC Alerts to drive action
- Engage industry organizations to close inverter-based resource reliability gaps

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<sup>1</sup> 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).

<sup>2</sup> We offered a number of recommendations to improve the SDP for NERC's consideration in our October 20, 2021 MRC Policy Input letter. <https://www.nerc.com/gov/bot/Agenda%20highlights%20and%20mintues%202013/Policy-Input-Package-November-2021-PUBLIC-POSTING.pdf>

## ***IRC Responses to Specific MRC Policy Input Questions***

### **1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

**Revise the Standard Grading Criteria to More Heavily Weight Emerging Risks:** Many of today's standards were developed prior to the influx of IBRs and the extreme weather conditions now experienced on the BPS. NERC needs to evolve existing standards to meet new and expected operating conditions. The IRC recommends that NERC direct the Periodic Review Standing Review Team to revise the standards grading criteria to focus on the emerging risks facing the grid today. NERC should engage the Reliability and Security Technical Committee (RSTC) and Reliability Issues Steering Committee (RISC) for technical and policy expertise.

**Incorporate Actionable Timeframes into the Risk Framework:**<sup>3</sup> Assign a triage team comprised of NERC staff and members of the RSTC and RISC committees to assess emerging risks to develop actionable timeframes. Continent-wide audit and data sources (TADS, GADS, DADS and Event Analysis) should be added to the Risk Framework to support the technical basis for NERC to initiate standards development projects.

**Revise Standards Development Process to Eliminate Steps Not Needed to Meet ANSI Principles:** ANSI's principles of openness, lack of dominance, balance, transparency, coordination and harmonization are not prescriptive as to how NERC meets them. NERC should assess each aspect of the SDP and formally eliminate steps that are not needed for accreditation. NERC should, in the interim, be allowed with Board approval, to address urgent reliability issues more quickly. One way to accomplish this would be to approve Standard Authorization Requests (SARs) brought forward by technical committees as necessary for reliability that receive RSTC endorsement prior to moving to the standards development process.

**Once Developed, Enable the Implementation of Standards Prior to the Effective Date:** After industry approves a standard and NERC submits it to FERC for approval, it may take up to 3-5 years for the standard to become fully effective. NERC should find ways to reduce reliability gaps sooner and take advantage of industry solutions by use of trial adaptations targeted towards entities that have greater risk or that can provide greater risk reduction. This should allow industry to voluntarily accelerate their ability to implement mitigating actions and be eligible to seek cost recovery.<sup>4</sup> Likewise, this would allow the ERO to assess industry's effectiveness in implementing new standards and provide feedback before facing the potential for compliance penalties once the new standards become mandatory.

**Institutionalize a Formal Process to Close Gaps Identified in Reliability Guidelines via Standards:** After an appropriate amount of time has been given for industry to respond to reliability guidelines issued following events or to address emerging risks, NERC should seek industry feedback to understand guidance adoption by asset owners and those that operate the system. Trending the frequency and impact of incidents related to the risk can help measure effectiveness. Remaining reliability gaps can then be identified and standards projects initiated to close those gaps. It is important that the Guidelines identify which functional entities are expected to perform what actions – much the same way as a formal reliability standard directs. This will provide visibility to which recommendations in the Guidelines need to progress to standards since mitigating actions are not always mutually

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<sup>3</sup> The Risk Framework refers to NERC's Framework to Address Known and Emerging risks.

<sup>4</sup> For an example of how this might be structured, see the [Implementation Plan for Project 2019-02: BCSI Access Management](#).



exclusive to a single functional entity. We believe NERC should make this a formal process so that industry understands if the risk is not reduced the Guidelines may initiate an expedited standard development project.

We recommend that NERC issue Board endorsed Guidelines at the quarterly Board meetings. This would raise the profile of the Guidelines related to emerging risks and ensure that industry understands the need to review and implement actions in the Guidelines as appropriate.

**Industry Organizations such as EPRI or IEEE Should be Invited to Advise Standard Drafting Teams:** We urge NERC to invite industry organizations such as EPRI or IEEE to participate as technical resources for certain Standard Drafting Teams. These organizations have the expertise that may be needed for particular drafting teams to avoid parallel efforts and can lead to faster and better risk mitigation solutions.

**Proactively Engage Other Regulators and Industry Partners to Close Reliability Gaps outside NERC's Jurisdiction:** The IRC encourages NERC to sponsor a forum for state regulators, federal agencies and other industry partners to ensure reliability gaps that cross jurisdictional lines are being discussed. NERC should provide regular updates on these engagements at the quarterly Board meetings.

**2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

With the number one reliability gap associated with IBRs being the need for fault ride-through capability, the IRC recommends the following:

**Revise the BES Definition to Incorporate Smaller IBR Resources (<75 MVA):** The current BES definition applies a threshold to IBR resources of 75 MVA, however a number of IBR resources fall below this level and are therefore not subject to current NERC standards such as PRC-024. The IRC is seeing these resources repeatedly tripping off-line needlessly. NERC should reduce the IBR threshold to enable NERC enforcement of current standards on existing and new generating resources.

**Issue Level 3 NERC Alerts to Drive Action:** The IRC supports NERC's utilization of Level 3 Alerts to drive the actions necessary to mitigate risk by requiring the installation of fault ride through (FRT) capability on IBRs. With the Board's approval, the alerts should identify the actions deemed to be essential to BPS reliability and the entities responsible for taking those actions. We encourage NERC to issue Level 3 Alerts as needed to close IBR reliability gaps until such time as a Ride-Through Standard can be developed.

**Engage Industry Organizations to Close IBR Reliability Gaps:** We recommend that NERC work with IEEE and other regulators and industry partners to require IBR Ride-Through Capability which may include a new NERC reliability standard and modifications to Federal Energy Regulatory Commission (FERC) Generator Interconnection Agreements.

***Conclusion***

The IRC appreciates the opportunity to provide policy input to the MRC for NERC's upcoming Board meeting. We believe the recommendations outlined here will enable NERC to improve processes and strengthen industry action to address emerging risks and IBR fault ride-through capability.



**Policy Input to the NERC Board of Trustees  
May 12, 2022 Meeting  
Provided by the North American Generator Forum**

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The North American Generator Forum (NAGF) appreciates the opportunity to provide policy input for the NERC Member Representatives Committee (“MRC”) and Board of Trustees (“BOT”) in response to BOT Chair Kenneth W. DeFontes, Jr.’s letter dated April 5, 2022. The NAGF provides the following policy input in advance of the NERC BOT meeting.

**Summary**

**Item 1: How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

The NAGF believes that timely communication and engagement between the ERO Enterprise and industry are key to addressing fast emerging risks to the reliable operation of the Bulk Power System. As identified in our policy input for the November 4, 2021 NERC BOT Teleconference, the NAGF suggested that Reliability Guideline recommendations be prioritized and communicated to the correct audience as interim recommended actions while a Standard is developed or updated. Industry participation in both the Reliability Guideline recommendation development and standards process that follows is required to develop industry support.

**Item 2: Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

The NAGF recommends that NERC continue to advocate for and work with FERC to revise the Large Generator Interconnection Agreement (LGIA) and Small Generator Interconnection Agreement (SGIA) documents to incorporate

operational performance requirements and model analysis/verification for BPS-connected inverter-based resources (IBRs).

## **Discussion**

**The BOT requests MRC policy input on the following:**

**1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

The NAGF believes that timely communication and engagement between the ERO Enterprise and industry are key to addressing fast emerging risks to the reliable operation of the Bulk Power System. As identified in our policy input for the November 4, 2021 NERC BOT Teleconference, the NAGF suggested that Reliability Guideline recommendations be prioritized and communicated to the correct audience as interim recommended actions while a Standard is developed or updated. Industry participation in both the Reliability Guideline recommendation development and standards process that follows is required to develop industry support. This could provide a more efficient and effective manner of addressing risk quickly while still using the Standards Process to develop the final mandatory requirements.

The NAGF recommended that the Reliability Guideline Findings and Recommendation sections in the Executive Summary incorporate a new section titled **Essential Actions**. Under **Essential Actions**, list two to three actions that need immediate / short-term solutions to ensure reliability. Including affected industry sector representation in the Essential Actions creation process is essential to industry buy-in. Once the Essential Actions are finalized, the Working Group team along with ERO and Regional staff should conduct a WebEx to review the Essential Actions with industry, including how and why they were determined to be needed for reliability, and next steps. The Webinar will need to include both technical and compliance personnel to ensure the message is publicized to the correct audience. The Working Group would also submit the Essential Actions in a SAR to start the process for developing the Essential Actions into enforceable Standard requirements

**2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

The NAGF recommends that NERC continue to advocate for and work with FERC to revise the Large Generator Interconnection Agreement (LGIA) and Small Generator Interconnection Agreement (SGIA) documents to incorporate operational performance requirements and model analysis/verification for BPS-connected inverter-based resources (IBRs). Fast tracking this effort will ensure future BPS-connected IBRs respond to system events as desired.



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

## MEMORANDUM

To: NERC's Member Representative Committee (MRC)  
From: New York State Reliability Council (NYSRC)  
Date: April 27, 2022  
Re: Request for Policy Input on Strengthening Industry Action to Address Emerging Risks

The New York State Reliability Council (NYSRC <https://www.nysrc.org/>) is pleased to respond to the subject request for input on risks to reliability that are emerging quickly and require an accelerated response, and with the integration of inverter-based resources (IBR). Please note that on January 25, 2022, NYSRC supplied related policy input to NERC Board of Trustees on the proposed SAR, "Fuel Assurance with Energy-Constrained Resources".

### **Background on the NYSRC**

The NYSRC was approved by the Federal Energy Regulatory Commission (FERC) at the same time as the formation of the New York State Independent System Operator (NYISO) to ensure that the reliability of New York State's bulk power system would be maintained in the transition to a fully competitive wholesale electricity market. The NYSRC has fulfilled this responsibility for more than 20 years. The NYSRC accomplishes this through the adoption of Reliability Rules that establish necessary requirements to protect the reliability of the state's bulk power system. These rules are more specific or more stringent than and are inclusive of NERC and NPCC Standards and are binding on the NYISO and its market participants.

NYSRC is actively involved in the subject matter, especially in the areas of assessing the impact on system reliability of increased penetration of renewable, intermittent resources and extreme weather. The NYSRC 2022 Goals document includes actions covering resource adequacy and transmission security, plus transmission operations and planning objectives covering these areas.

[https://www.nysrc.org/PDF/Documents/NYSRC%202022%20Goals%20%202022%20-%20EC%20Approved%2011-10-2021\[19222\].pdf](https://www.nysrc.org/PDF/Documents/NYSRC%202022%20Goals%20%202022%20-%20EC%20Approved%2011-10-2021[19222].pdf)

## **Response to Request for Policy Input**

The NYSRC offers the following responses to NERC's MRC request for policy input:

### **Q1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

#### **A1. NYSRC Response:**

- The NYSRC recognizes that the original "Fuel Assurance with Energy-Constrained Resources" SAR is currently planned to be divided into Operating and Planning time frame SARs. The NYSRC urges NERC to further divide the proposed SARs:
  - Into several SARs across subject matters where it would be more effective to assemble drafting teams of experts across the industry to establish new or amended NERC and RE reliability standards and directives.
  - During the drafting process, entities such as IEEE, EPRI, DOE and others should be consulted.
  - All current standards requirements should be reviewed to determine if amendments are necessary under the fast-emerging risks to reliable planning and operation of the BPS.

### **Q2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

#### **A2. NYSRC Response:**

- The NYSRC urges NERC to:
  - Continue support for the adoption of the IEEE Standards IEEE-2800/2800.1 by local TOs and other applicable jurisdictions.
  - Consider inclusion of IEEE Standards IEEE-2800/2800.1 by reference in NERC interconnection and related standards (e.g., FAC-001, FAC-002, MOD-026, MOD-027, TPL-001) as they may be amended from time to time.
  - Any new or amended Reliability Standards should address both IBR interconnection and performance assessment requirements.

The NYSRC notes the time criticality of the work that is needed in the next few years for a successful transition to a decarbonized electric grid and agrees with NERC in calling this transition the greatest risk to reliability in the next 10 years.

Respectfully submitted, New York State Reliability Council

April 26, 2022

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## Cooperative Sector Policy Input to the NERC Board of Trustees

The Cooperative Sector appreciates the opportunity to provide policy input to the NERC Board of Trustees (BOT) regarding strengthening industry action to address emerging risks.

### Summary of Policy Input

The Cooperative Sector continues to support efforts to address the challenges emerging risks while believing these risks can be managed utilizing the existing processes and procedures available in the ERO and stakeholders' construct.

### **Question 1 - How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

- In recently provided input on the NERC Business Plan Strategic Focus Areas for the 2023–2025 planning horizon, Cooperatives believe that NERC's new approach to extend the business planning cycle will give industry more opportunities to provide input into the business plan to assist NERC with addressing these reliability challenges while simultaneously providing more timely information to stakeholders for their own business planning needs. In addition, an essential element in the successful execution of the activities associated with the proposed NERC Business Plan is utilizing the collaborative stakeholder process which is the foundation for the partnership between NERC and the industry.
- Cooperatives believe that NERC already has a full suite of tools inclusive of section 1600 data requests, reliability guidelines, NERC Alerts, and Reliability Standards to address quickly emerging risks. While these tools provide various means to address quickly emerging risks and the Standards Processes Manual (SPM) already provides the ability to expedite the development of standards for certain circumstances, Cooperatives are eager to participate in the efforts of the task force described during the discussion on the Business Plan Strategic Focus Areas. If the task force determines there are potential opportunities for efficiencies within the standard development process, these changes should be carefully and deliberately implemented such that important safeguards for reliability and security are maintained with a process that is transparent and representation remains balanced while avoiding unintended consequences.
  - Examples of accelerated development were Reliability Standards CIP – 013 Cyber Security - Supply Chain Risk Management and CIP-014 - Physical Security. It was proven that when the stakeholders and the ERO are aligned grid issues can be addressed quickly.
  - Specifically, the SPM already provides the ability to expedite the development of standards for certain circumstances. For example, the SPM includes the following sections to address the various circumstances from which standards development activities could arise. These include:
    - Section 10.0: Processes for Developing a Reliability Standard Related to a Confidential Issue

- 10.1: Process for Developing Reliability Standards Responsive to Imminent, Confidential Issues
- 10.8: Process for Developing Reliability Standards Responsive to Nonimminent, Confidential Issues
- Section 16.0: Waiver - Importantly, Section 16 of the SPM authorizes the Standards Committee to waive any of the provisions contained in this manual for good cause shown, should the following circumstances arise:
  - *In response to a national emergency declared by the United States or Canadian government that involves the reliability of the Bulk Electric System or cyber attack on the Bulk Electric System;*
  - *Where necessary to meet regulatory deadlines;*
  - *Where necessary to meet deadlines imposed by the NERC Board of Trustees; or*
  - *Where the Standards Committee determines that a modification to a proposed Reliability Standard or its Requirement(s), a modification to a defined term, a modification to an Interpretation, or a modification to a Variance has already been vetted by the industry through the standards development process or is so insubstantial that developing the modification through the processes contained in this manual will add significant time delay.*
- Additionally, the NERC Alerts program, which is designed to provide concise, actionable information to the electricity industry is already designed to be a very flexible process. It allows alerts to be prioritized from a simple advisory to industry to essential action that must be taken by industry.
- In February 2021 the NERC Board accepted the Framework to Address Known and Emerging Reliability and Security Risks which was reviewed by the Reliability and Security Technical Committee (RSTC) and Reliability Issues Steering Committee (RISC). The framework identifies the policies, procedures, and programs developed by the ERO to support its mission and incorporates them into an iterative six-step risk management framework. The framework facilitates the ERO efforts to identify risk both in a leading and lagging manner. It further supports the important role that industry and the ERO technical committees have in communicating, identifying, and mitigating BPS risks. To ensure continued effectiveness of this framework, NERC should consider, with the support and collaboration of stakeholders, instituting a periodic evaluation of the framework to include an evaluation of the accuracy and success of the framework relative to risk identification and mitigation. Such an evaluation could include metrics or other key performance indicators of the process as well as the achievement of the intended results of mitigating activities.

**Question 2 - Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

- The Cooperative Sector believes that NERC is providing ample information to the industry as described in the April 12, 2022, MRC Informational Session to allow the industry to address the challenges associated with the integration inverter-based resources:
  - (1) technical content and analysis through the RSTC's Inverter-based Resource Performance Subcommittee (IRPS); (2) disturbance reports from over 10 events involving widespread loss of solar photovoltaic resources; (3) two Level 2 NERC Alerts; (4) multiple Reliability Guidelines; (5) Institute of Electrical and Electronic Engineers (IEEE) engagement as they developed Standards 1547 and 2800 to improve interconnection and performance; and (6) a Compliance Monitoring and Enforcement Program (CMEP) Practice Guide.
- Like the ERO, Cooperatives agree that generator interconnection agreements are the key to successfully managing the integration and reliable operation of the Bulk Electric System (BES). These agreements should be structured as described in the [NERC Multiple Solar PV Disturbances in CAISO](#) report recommendation which reinforces that significant updates and improvements are needed to FERC Generator Interconnection Agreements. This approach would provide the appropriate Registered Entities the necessary information to execute planning and real-time operating in the various horizons included in approved Reliability Standards.
- Cooperatives continue to believe there is a need for improved collaboration and participation with technical partners such as the NATF, NAGF, EPRI, CEATI, and the national labs. This type of collaboration will leverage expertise to provide additional exposure to and solutions for the security and reliability challenges facing the electric utility industry. Approaches to facilitate increased participation by smaller entities could provide overall benefits execute ERO Enterprise programs.
- Cooperatives support the need for enhanced data sharing between FERC and the ERO, between FERC and other agencies, between FERC and owners, users, and operators or between the ERO Enterprise and the industry. Incorporation of enhanced information sharing, whether regarding threat intelligence, supply chain risks, or data that would facilitate policy development relative to variable or distributed energy resources, would inject both efficiency and agility into ERO Enterprise programs. Moreover, this enhanced data sharing would not only benefit the industry's agility and efficiency, but would have several, other significant benefits such as the sharing of lessons learned and best practices, more timely sharing of threats and adverse operating experiences, and the potential for greater consistency and consensus across agencies and sectors.
- The Cooperative Sector also recognizes that inverter-based resources (IBR) represent a new technology whose behavior during grid disturbances is entirely based on programming logic versus the known mechanical and physical characteristics of synchronous generators. This software driven behavior creates unique integration challenges due to the volume of parameter settings that impact transient behavior as well as each manufacturer's capability to add functionality through innovative programming and firmware updates. IBR area penetration and legacy inertial generation also plays a factor as these inverters must respond in real-time in unison to appropriately maintain grid reliability during grid disturbances. Another challenge is that depending on vintages, IBRs have varied capabilities to respond to grid signals for generation adjustments. Successful integration of IBRs is a complex task. It must consider

programming logic that can quickly change IBRs transient behavior and response to grid disturbances. It is suggested for the ERO to facilitate knowledge of integrating this new technology via a conference between industry and manufacturers/software designers to discuss the nuances of non-inertia machines that operate in an environment where balanced load to generation is required to meet system reliability needs. Additionally, the Cooperative Sector encourages the ERO to work with industry to establish priorities for development of educational resources for this new technology and establish an IBR forum where collaboration can occur between industry and manufacturers on the challenges with IBR integration and acceptable methods to address them.

- The Cooperative Sector agrees that the NERC Standards Committee acted appropriately in 2018 when it rejected the Standards Authorization Requests (SARs) described in the April 2022 MRC Informational Session. Pursuant to Section 4.1 of the NERC SPM, Appendix 3A to the NERC Rules of Procedure, a [letter](#) was issued to the submitter of the SARs which is supportive of the issue already being addressed through IEEE Standard 1547-2018 and technical guidance developed by the NERC IRPS. Industry should be allowed to identify alternative methods other than mandatory Reliability Standards to address integration of inverter-based resources. If NERC chooses to revise the NERC Reliability Standards to address systemic issues with inverter-based resources as recommended in the [NERC Multiple Solar PV Disturbances in CAISO](#) report they should conform with Institute of IEEE Standard 1547-2018.
- More recently, the NERC Standards Committee has authorized projects to revise several NERC Reliability Standards to address systemic issues with inverter-based resources as recommended in the March 2020 [white paper](#) developed by the NERC Inverter-Based Resource Performance Task Force (IRPTF). Cooperatives agree that these revision efforts will ultimately result in the ERO and stakeholders being aligned in addressing this emerging risk by clarifying ambiguity in applicable requirements which will ultimately lead to improved coordination between the applicable NERC registered entities, improved modeling, model verification, studies, and real time monitoring more representative of actual system performance and response so that appropriate corrective actions can occur as needed under this targeted group of revised Standards.

As stated in previous policy input responses and in other public comment requests, the success of the industry and the ERO Enterprise is the fair and balanced sector representation and the opportunities for input and consensus-building provided by the current ERO Enterprise programs. The Cooperative Sector has always fully supported and will continue to support the fair and balanced sector approach taken by the ERO Enterprise as well as the opportunities for industry to leverage its technical expertise and achieve consensus through ERO Enterprise programs, such as standards development.

Submitted on behalf of the Cooperative Sector by:

Patti Metro

Senior Grid Operations & Reliability Director

Business & Technology Strategies | National Rural Electric Cooperative Association

m: 571.334.8890

email: [patti.metro@nreca.coop](mailto:patti.metro@nreca.coop)



## MEMORANDUM

**TO:** Ken DeFontes, Chair  
NERC Board of Trustees

**FROM:** John Haarlow  
Terry Huval  
John Twitty  
Brian Evans-Mongeon

**DATE:** April 27, 2022

**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 April 5, 2022 letter to MRC Chair Roy Jones in which the Board of Trustees (“Board”) requests MRC input on strengthening industry action to address emerging reliability risks. Specifically, the Board seeks the MRC’s views on two questions:

1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?
2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?

The SM-TDUs provide their response to these questions below. We look forward to discussing these issues and other agenda items during the meetings of the Board, Board committees, and the MRC on May 11-12, 2022.

### *Summary of Comments*

- Changes to the way Policy Guidance documents are developed and used may hold promise for better addressing fast emerging risks, particularly if the focus is on collaboration and information sharing instead of compliance. An assessment of NERC’s system for its library of documentation would also be valuable.
- It would be beneficial to streamline mitigation activities to apply cohesive strategies that focus on clearly defined risks. Layers of guidelines, alerts, requirements, etc. can water down their overall effectiveness and spread industry resources too thin.
- The SM-TDUs welcome the opportunity to participate in the recently announced initiative to consider changes to the NERC Standards Development Process and Manual, but we caution against deviations from the ANSI process.

- The ERO processes in place to respond to inverter-based resource (“IBR”) challenges are generally adequate, particularly the work of the Inverter-Based Resource Performance Subcommittee (“IRPS”) under the Reliability and Security Technical Committee (“RSTC”), although more robust information sharing, outreach, and education on important issues may be worthwhile. The SM-TDUs would support more vigorous actions if the data show meaningful reliability risks.
- Greater clarity is needed regarding how the term “BPS-connected” is defined and interpreted.

### *Responses to Specific Questions*

#### **1. How can the ERO Enterprise and industry work together to address fast emerging risks to the reliable operation of the BPS with more effective and certain outcomes across North America?**

The SM-TDUs have previously expressed their agreement that ERO agility is important given the rapid changes in the electricity sector and the challenges that such changes can pose for the reliability of the BPS. We note that the SM-TDUs offered their perspectives on promoting nimbleness and agility in response to the Board’s request for policy input in advance of the November 3-4, 2021, Board meetings (“November Policy Input”). Much of that input, we believe, is also germane to the Board’s questions here.

The April 5 policy input letter points to mitigation activities that the ERO Enterprise uses in response to emerging risks, including NERC Alerts, Reliability Guidelines, Reliability Standards, compliance guidance, lessons learned, site visits, and technical tutorials, conferences, and workshops. The Board suggests, however, that mitigation activities “without required industry actions do not sustain long-term mitigation of emerging risks and require additional actions, including Reliability Standards or Level 3 Alerts to address [these] risks.”

The SM-TDUs recognize that required industry actions may be necessary in some circumstances to address emerging risks. We question, however, the premise that the perceived ineffectiveness of certain mitigation activities necessarily points to a conclusion that mandatory industry actions are required. The SM-TDUs believe, for example, that changes to the way Policy Guidance documents are developed and used may hold promise for better addressing fast emerging risks. Policy Guidance is essentially a form of information sharing, and when dealing with rapid change, such information sharing is extremely beneficial and constitutes a best practice. But information sharing and collaboration generally work best for the industry when it is distinct from enforcement, as with the E-ISAC. Policy Guidance in the form of Practice Guides that are regarded as instruction to auditors on the handling of audits is likely to be less beneficial as a form of information sharing and collaboration. As industry has previously suggested, there might be room for another kind of guidance on emerging risks where information could be presented, discussed, and shared collaboratively.

ERO and industry collaboration on emerging risks may also be improved through a “less is more” approach to mitigation activities. In the SM-TDUs’ experience, layers of guidelines, alerts, requirements, etc. can water down their overall effectiveness and spread industry resources too thin. To effectively pursue a more streamlined approach to risk mitigation activities, it is important to establish clear definitions of the emerging risks to be addressed and a cohesive strategy to stay

ahead of the curve with mitigation activities. As the SM-TDUs observed in the November Policy Input, NERC's "Framework to Address Known and Emerging Reliability and Security Risks" ("Risk Framework") generally provides a good foundation for addressing known and emerging risks to support the continued reliability and security for the transforming BPS. Ensuring that risks are not too broadly defined, however, (e.g., "changing resource mix") is essential to developing an effective plan to respond. Clearly defining risks also allows the industry to recognize appropriate distinctions between particular challenges. Once an issue is identified as an emerging and high risk, there needs to be a strategic approach to addressing the risk to allow for a cohesive and effective response. The Risk Registry is a valuable new tool in this effort, and can best be honed through further collaboration to maximize its effectiveness. It is also important to recognize that, at some point, an emerging risk is no longer "emerging" because the ERO and industry are responding with specific mitigation activities.

Based upon informal surveys conducted within various industry sectors, the SM-TDUs also believe that the ERO should consider continuing review of the various guidance documents and assess whether improvements could be made to its system for its library of documentation. Members suggest that materials can be difficult to find and cross-reference to other specific needs. Revamping the reference library system should give the entire industry an opportunity to identify specific documents that would best aid and enhance their performance. The SM-TDUs applaud NERC's efforts to clarify the purpose of existing guidance and believe continuing this effort with an emphasis on cross-referencing could be valuable. The ability to cross-reference technical documents, guides, and other reference materials to applicable standards and other NERC based programs would be helpful.

With respect to addressing fast emerging risks through the Standards process, the SM-TDUs welcome the opportunity to participate in the recently announced initiative of the NERC Standards group to engage an industry-based study team to consider changes to the NERC Standards Development Process and Manual. We agree that efforts to accelerate the pace of Standards development could be useful and responsive to the needs of the industry (ERO, regulatory agencies, and registered entities). One way to promote process efficiency would be for NERC to seek feedback early on in the Standards development process, including through webinars. Improving the timing of webinars is key, especially before the final standard language is developed so the industry can ask questions and provide input early on in the draft stage around the scope and intent of the standard.

The SM-TDUs urge caution, however, regarding the prospect of deviating from the ANSI process in some circumstances to address emerging risks. As the SM-TDUs observed in the November Policy Input, the ANSI process helps ensure appropriate subject matter expert participation in Standards development, and, moreover, the collaborative ANSI process promotes consensus and buy-in from impacted stakeholders, which helps avoid litigation and other challenges to Standards. We believe that the ANSI process still provides assurances that standards and related operating performance requirements are well vetted and crafted in a manner that demonstrates how seriously we take our responsibility in maintaining and operating the electric grid. As the SM-TDUs observed in the November Policy Input, moreover, industry has shown it can act quickly on standards when a problem is clearly identified with technical analysis and supporting data.

**2. Specifically for the inverter-based resource challenges, what other actions should the ERO Enterprise take to ensure known reliability gaps with BPS-connected inverter-based resource performance are addressed?**

The SM-TDUs generally believe that the ERO processes in place to identify and respond to inverter-based resource challenges are adequate. The IRPS under the RSTC (recently redesignated as a formal subcommittee) is actively addressing the reliability gaps with BPS-connected IBRs and has identified a number of actions in its work plan. The SM-TDUs support the IRPS' and RSTC's efforts and believe IBR challenges should be addressed and vetted through these two technical groups, including the seven current standards in the Standard Authorization Request phase or under development that address IBR risks.

The ERO and the industry now have significant experience and data concerning IBR performance, as well as potential risk factors, that can help inform a response. The SM-TDUs are aware, for example, of NERC concerns about the extent to which IBRs are following NERC's guidance. Consistent with the SM-TDUs' response to Question No. 1 above, more robust information sharing, outreach, and education on important issues (e.g., the importance of parameter checks) may be worthwhile. If the data nonetheless show meaningful risks to reliability in connection with IBRs, the industry could support broader efforts, including NERC's recommendations to adopt NERC Reliability Guidelines, FERC interconnection procedures and agreement improvement, and updated or new standards. NERC's authority does not extend to most developers or manufacturers of IBR technology, but they need to be part of the solution. Accordingly, NERC should continue to coordinate with the Institute of Electrical and Electronics Engineers on standards it is developing (which NERC has done and should continue to do) and also coordinate with FERC to update the pro forma interconnection requirements.

Finally, the development of strategies to respond to IBR reliability challenges would benefit from greater clarity as to how the term "BPS-connected" is defined and interpreted. The scope of the ERO's authority under section 215 of the Federal Power Act is generally limited to the BPS, which does not include distribution facilities. The term "BPS-connected" is potentially very broad, and a common understanding of which actions can – and which actions cannot – be taken under existing authority to address IBR reliability challenges would help facilitate the identification of responses to these challenges.