

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Reliability Technical Conference

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Docket No. AD19-13-000

**Statement of Jack Cashin
on Behalf of the American Public Power Association**

Panel I: Status of the Electric Reliability Organization and Reliability

Thank you for the opportunity to participate in the 2019 Reliability Technical Conference. As the agenda for this year's conference shows, electric industry stakeholders, including the Commission, continue to face important questions about how best to protect and maintain the reliability of the Bulk Electric System (BES) in an evolving industry landscape, where technological changes can present both risks and opportunities. The North American Electric Reliability Corporation (NERC) and the Regional Entities play a central role in maintaining BES reliability, and I commend the Commission for convening this panel to explore how NERC and the Regional Entities, in coordination with industry stakeholders, can best accomplish this common mission.

I appreciate the chance to share the perspective of the American Public Power Association (APPA) on select panel issues. APPA is the national service organization representing the interests of the nation's 2,000 not-for-profit, community-owned electric utilities. Public power utilities account for 15 percent of all sales of electric energy (kilowatt-hours) to ultimate customers and collectively serve over 49 million people in every state except Hawaii. Ensuring reliability is a crucial aspect of public power utilities' service to their communities, so their role in providing funding and technical expertise to NERC and the Regional Entities is a significant consideration for public power utilities. As APPA's Director for Policy Analysis and Reliability Standards, I work closely with APPA's members, NERC, and other industry

stakeholders on issues related to the Reliability Standards.

While public power utilities vary greatly in size, the vast majority are relatively small. For example, 1,684 of the approximately 2,000 public power utilities in the United States have 10,000 meters or less, and 1,352 of these utilities have fewer than 4,000 meters. Approximately 250 public power utilities are registered entities subject to compliance with NERC mandatory Reliability Standards. Of the public power utilities that are NERC registered entities, 212 have fewer than 50,000 meters.

I look forward to discussing in depth the questions raised in the Commission's technical conference notice. In this written statement, I offer some key observations in response to each of the questions included in the notice. Certain of the issues that I will highlight were reflected in NERC's 2018 State of Reliability Report (the 2019 State of Reliability Report has just been finalized). APPA would also call attention to the NERC Reliability Issues Steering Committee's Electric Reliability Organization (ERO) Risk Reliability Priorities 2019 Report,¹ that also details trends and risks that NERC and Commission are seeking to address.

Before turning to the specific questions included in the notice, I would urge the Commission, NERC, and the industry's collaborative reliability regime, as an overarching priority, to maintain a focus on operational efficiency and effectiveness. In 2018, NERC initiated a process to identify and evaluate opportunities to improve ERO Enterprise effectiveness and efficiency, including the effectiveness and efficiency of NERC stakeholder engagement and the operations of the ERO Enterprise. APPA is encouraged that NERC continues to engage in this effort. In urging NERC to make operational efficiency and

¹ Available at: https://www.nerc.com/comm/RISC/Related%20Files%20DL/ERO-Reliability-_Risk_Priorities-Report_Board_Accepted_February_2018.pdf.

effectiveness a priority, however, I do not mean to suggest that NERC should simply concentrate on cost savings or cutting back on processes and procedures. Greater efficiency should not come at the expense of reduced effectiveness. For example, increased spending on the Electricity Information Sharing and Analysis Center (E-ISAC) can spur efficiencies that will provide increased security, resulting in fewer incidents and lower overall costs. Similarly, opportunities for robust stakeholder input and debate might be regarded, in some sense, as “inefficient,” but the end results of such subject matter expert-stakeholder-informed processes are likely to be more effective than decisions made without adequate stakeholder input.

a. What trends and risks from the State of Reliability Report does NERC consider to be the most significant challenges facing BES reliability? How should NERC prioritize these challenges to ensure reliability of the BES is maintained? How have these challenges affected NERC’s and Regional Entities’ resource requirements and allocations?

APPA believes that identifying cyber and physical security threats, and communicating defenses against those threats, should be a key priority for NERC, working through the E-ISAC. While it is encouraging that no reported cyber or physical security incidents resulted in a loss of load in 2018, it is essential to remain vigilant against these threats, and to ensure that industry stakeholders have access to reliable threat information and mitigation strategies.

APPA believes that flexible voluntary programs are generally the best way to promote physical and cyber security of the BES against continually evolving threats. APPA particularly supports NERC’s emphasis on promoting physical and cyber security through “effective information exchange between entities, the E-ISAC, and trusted partner organizations.”² Similarly, APPA believes overall BES reliability is promoted effectively through stakeholder engagement in standards development and related voluntary programs.

² NERC 2018 State of Reliability Report at p. viii (June 2018).

Utilities can address security threats with appropriate access to classified threat data and close collaboration with federal agencies and industry peers, such as through the Electricity Subsector Coordinating Council (ESCC) and E-ISAC. NERC's formal Alert process can quickly provide critical information and recommended actions related to any identified incident or threat. APPA supports E-ISAC enhancement that will improve security analytics with data from other credible sources. Moreover, APPA supports improved notification capabilities by the E-ISAC and Multi-State ISAC (MS-ISAC)³ to APPA member companies, as specifically recommended in the 2018 State of Reliability Report.⁴ APPA believes NERC and Regional Entities resources have been effective in their duties, however emerging reliability threats should continually be monitored to ensure sufficient attention and resources are available.

It is also important that NERC and the relevant ISACs be a key part of the regulatory coordination to ensure a holistic understanding of infrastructure and high-impact events that affect electric reliability. The collaborative structure of the ERO provides an informational bridge between stakeholders and FERC for such events. Coordination of electric industry stakeholders and all related agencies is required to respond to BES reliability and security events.

Continual improvement of the framework requirements of Critical Infrastructure Protection (CIP) Standards is key to grid security. Importantly, however, promoting cybersecurity under the CIP Standards does not necessarily involve adding more mandatory requirements. The CIP Standards provide a cyber security framework that establishes an internal process that allows entities to adapt quickly to the evolving threat landscape. Mandatory standard requirements cannot easily adapt to dynamic problems like cyber security threats, which

³ <https://www.cisecurity.org/press-release/nerc-partnership-to-strengthen-grids-cyber-physical-security/>

⁴ *Id.* at pp. viii-ix (recommending that the E-ISAC should “support American Public Power Association (APPA) and National Rural Electric Cooperative Association (NRECA) member participation.”).

operate within the backdrop of rapidly changing technology. Imposing mandatory standards to address specific threats or vulnerabilities can slow innovative approaches to cyber security among electric utilities. With mandatory standards, moreover, there can be a risk of implementing a “one size fits all” approach to security, when flexibility may be the best approach. NERC, industry, and the Commission have other tools, programs, and best practices they can use to meet evolving security risks.

An example of a NERC and industry effort to promote cyber security outside the mandatory Reliability Standards context is the 2018 white paper prepared by APPA and the National Rural Electric Cooperative Association (NRECA) at the request of the NERC Board of Trustees. The white paper describes best practices in managing cyber security supply chain risk for small registered entities.⁵ Additionally, APPA and NRECA both continue to extend and expand their efforts with the Department of Energy to customize cyber security programs to fit the needs of small and medium sized member companies. Similar to the efforts on supply chain risk management, these broader programs focus on flexible risk management best practices, rather than mandates. This flexibility is consistent with NERC’s risk-based approach to the Standards.

Finally, NERC’s 2018 State of Reliability Report suggested a number of ways that NERC could strengthen situational awareness capabilities, including implementation of the E-ISAC strategic plan.⁶ APPA concurs with these suggestions and supports industry review of planning practices and implementation of the E-ISAC strategic plan for situational awareness.

⁵ The whitepaper, *Managing Cyber Supply Chain Risk- Best Practices for Small Entities*, was filed in Commission Docket No. RM17-13-000 on May 11, 2018. APPA and NRECA were assisted in their development of the white paper by the Large Public Power Council and the Transmission Access Policy Study Group.

⁶ See NERC 2018 State of Reliability Report at p. ix.

b. How should NERC address the risk of high-impact, low-frequency events such as gas pipeline contingencies and electromagnetic pulses? What additional steps, if any, should NERC be taking to address these types of threats?

High-impact, low-frequency events that impact electric reliability may be driven by factors that are beyond NERC's authority to address. Therefore, as an initial measure, NERC must assess how such potential events fit within its mission, responsibilities, and statutory authority in order to determine the steps, if any, NERC should be taking to address the risk of high-impact, low-frequency events.

With respect to the kinds of events cited in the questions, NERC surely would be involved in the regulatory coordination needed to address severe pipeline contingencies or EMP events, even where principal safety or reliability authority does not reside with NERC or the Commission. A severe gas pipeline contingency would require coordination with local authorities and the Pipeline and Hazardous Materials Safety Administration (PHMSA). Possible EMP events, as noted in a 2018 GAO Report, require significant ongoing coordination with the Department of Energy (DOE) and Department of Homeland Security (DHS).⁷ NERC should assist with regulatory coordination of a multi-layered approach to ensuring electric reliability through both system event mitigation, and preparedness for restoration and recovery from high-impact low-frequency events. NERC can also evaluate and communicate the potential impact on the electric grid from such events through reliability assessments.

EMPs and their potential impact on the electric grid are complex subjects that require ongoing study, as demonstrated by the 2019 EPRI report.⁸ For example, there are devices that block EMP effects, but, as the EPRI report details, blocking EMP current at one grid element on

⁷ See <https://www.gao.gov/assets/690/689921.pdf>.

https://www.eisac.com/cartella/Asset/00007593/EPRI_High-Altitude%20Electromagnetic%20Pulse%20and%20the%20Bulk%20Power%20System.pdf?parent=119202

an interconnected system only sends the current to other grid elements. APPA appreciates that NERC has convened a Task Force to further examine the findings from the EPRI report to determine potential next steps.

c. Over the past year, two Regional Entities have been disbanded and their responsibilities have been turned over to other Regional Entities. What, if any, additional changes, should NERC consider with respect to the Regional Entity structure?

The consolidation of the Regions has had positive impacts from an ERO efficiency and effectiveness standpoint, and we would expect those efficiencies to be reflected in prospective NERC budgets. The consolidation appears to be moving in parallel with the greater consistency and coordination between NERC and the Regions. At the same time, there are benefits to preserving geographic Regional Entities, as different areas of the country face their own regional challenges, and maintaining these entities allows for efficient consideration of such challenges.

APPA supports greater consistency and alignment among NERC and the Regional Entities and appreciates NERC's efforts in this regard. For example, NERC's Enterprise Program Alignment Process effort uses a risk-based approach for the Compliance Monitoring and Enforcement Program (CMEP), providing needed coordination among NERC, the regions, and registered entities leading to a more comprehensive system to manage and analyze information. APPA believes, however, that further alignment is needed between the Commission, NERC, and the Regional Entities on the risk-based compliance and enforcement framework.

d. How is NERC using its observations of BES performance, event analysis information, compliance monitoring program, and other data collection and analysis activities to assess and take action on the need to update NERC Reliability Standards to reflect the evolving BES?

APPA members have been engaged in and support the Standards Efficiency Review (SER), an effort to update the NERC Reliability Standards by increasing the efficiency and

effectiveness of the Standards. The three-phase approach of the SER has eliminated outdated requirements that unnecessarily taxed the resources of registered entities by focusing them on administrative requirements, rather than reliability. Much of the review and consolidation of the body of Standards in the SER process has necessarily been guided by information provided by NERC. This has informed decisions regarding which requirements are best retired (Phase I) or mapped to other mitigation tools (Phase II).

The CMEP will be improved by NERC's Alignment tool project currently underway. Registered entities are optimistic that the effort will provide data that will allow utilities to benchmark their reliability programs. Utilities believe that focusing on lessons learned and best practices from the other utilities can best improve their reliability programs. NERC registered public power entities have less confidence that new Standards or versions of Standards will improve their overall reliability.

An important goal for managing reliability should be getting operators to take responsibility for managing their reliability outcomes and not just standards compliance. Outcome and risk-based evaluation tools, developed and managed by operators, will help move utilities into this environment. Significant progress has been made on the journey toward greater use of risk assessment as a tool to better manage reliability. But more could be done. The thoughtful use of Inherent Risk Assessments (IRA) and Internal Control Evaluations (ICE) should lead to more reliable operation while also increasing efficiency by focusing on the right things. FERC and NERC should continue to develop incentives for greater use of well-performed IRA and ICE.

e. What new steps is the Electricity Information Sharing and Analysis Center (EISAC) taking to further assist the industry to prepare for and respond to cyber and physical threats, vulnerabilities, and incidents? Are there additional actions the Commission could take to further encourage participation in E-ISAC's information sharing activities?

APPA encourages E-ISAC and MS-ISAC participation by its members, large and small.

We are pleased that these ISACs have a Memorandum of Understanding and offer APPA members a variety of programs that different-sized utilities can incorporate into their security regimes. Several APPA members are not NERC registered but follow E-ISAC and MS-ISAC information sharing and take an active interest in each ISACs' evolving programs with respect to security as it relates to reliability.

APPA would encourage the Commission to work with DOE and other government partners involved in industry-government collaborative efforts that benefit the ESCC. With respect to the E-ISAC's efforts to coordinate regulatory agencies and the electric industry, we encourage E-ISAC to develop a process for managing contacts similar to the NERC CMEP program for registered entity contacts.

f. In what ways can the Commission, NERC, and the Regional Entities work together to identify and address evolving threats to maintain and improve reliability and security of the BES? When should the Commission and/or NERC conclude that a new or modified standard is necessary to address an identified threat?

APPA appreciates the Commission's recognition of the need to work with industry and NERC to identify threats, so that appropriate mitigation efforts can be established to address those threats. As I indicated above, there is a need for government to share credible threat information in a timely manner. We encourage the Commission to continue to work within the partnership of government agencies that coordinate with the ESCC to identify and address threats and vulnerabilities.

A necessary prerequisite for assessing whether a new or modified standard may be needed is having sufficient information upon which to base this determination. While NERC has a long history that has included data collection, its collection of data as the ERO has only been for a decade. The collection of security information has even less history. APPA encourages NERC and the Commission to continue to build the repository of historic data with an eye

toward refining reliability measures. The story and conclusions from the data should be clear. APPA cautions against premature conclusions from immature data sets.

APPA believes that a threshold question in assessing whether to pursue a new or modified standard is whether there is national need to be addressed. Issues such as fuel security or renewable penetration can often be regional or sub-regional reliability risks. Consequently, national standards are not needed in these instances. Moreover, risks can often be mitigated through the application of lessons learned, information sharing and alerts, and adoption of best practices rather than through new or modified standards.

Beyond the specific Panel I questions, APPA would call attention to an issue that will likely be addressed during the Cloud and Virtualization panel that affects the supply chain issues I have discussed. Public power believes there is a significant opportunity for improvement in supply chain reliability management with more regulatory certainty with respect to vendors. Supply chain is a significant source of risk that is not easily managed under the current statutory framework, as the law does not extend to vendors that supply key products. APPA supports a vendor certification process that will appropriately call for vendors to bear responsibility for necessary security measures and will reduce the risk of unwitting procurement by registered entities that includes malware. Registered entities alone are not likely to be able to create a certification system. Though we are aware of related efforts in various quarters, it is likely that federal government involvement will be needed to drive this process forward. Various federal agencies, including DHS and DOE, will likely need to play a role as FERC likely would not be able to accomplish certification under its existing authority. We encourage FERC to actively engage its federal colleagues to assure a viable certification process is developed and implemented.

II. Conclusion

I appreciate the opportunity to provide this written statement for the record, and I look forward to discussing these and other issues at the technical conference.