UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference	)	Docket No. AD22-10-000

COMMENTS OF THE ELECTRIC POWER SUPPLY ASSOCIATION

Pursuant to the Commission's November 22, 2022 Notice Inviting Post Technical Conference Comments,[1] the Electric Power Supply Association ("EPSA")[2] hereby submits these comments on the Commission's November 10, 2022 Annual Reliability Technical Conference ("Technical Conference"). As the conference discussion indicated, the Bulk Power System ("BPS") continues to undergo tremendous changes. NERC President and CEO Jim Robb noted in his testimony that as the energy transition continues, "BPS reliability risks are numerous, complex, and interrelated. The ERO Enterprise is particularly focused on addressing risks associated with (i) grid transformation, (ii) extreme weather, and (iii) security threats."[3] Given these concerns, it is critical that markets send appropriate price signals to ensure that the resources needed to preserve reliability are provided with an opportunity to recover the costs needed to continue operating. In order to achieve this goal, the Commission should take measures to encourage and approve the development of market designs that align market participants' incentives with the optimal and lowest cost

[1] Notice Inviting Post-Technical Conference Comments, *Reliability Technical Conference,* Docket AD22-10-000, (issued November 22, 2022).

[2] EPSA is the national trade association representing competitive power suppliers in the U.S. EPSA members provide reliable and competitively priced electricity from environmentally responsible facilities using a diverse mix of fuels and technologies. EPSA seeks to bring the benefits of competition to all power customers. This pleading represents the position of EPSA as an organization, but not necessarily the views of any particular member with respect to any issue.

[3] Speaker Comments of Jim Robb, NERC, Panel 1, (November 8, 2022), p. 1, ("Robb Speaker Comments").

reliability outcomes, which is best achieved through competition. In addition, given increasingly common extreme long-duration weather events and impacts from climate change, the Commission should take measures to ensure that planning parameters are adequately assessing the risks posed to the system. The Commission should also continue to encourage enhanced gas-electric coordination and enact policies that incent all BPS participants to make voluntary cybersecurity enhancements.

I. COMMENTS

A. Markets Need to Send Adequate Signals to Flexible Resources

While Mr. Robb's remarks – and the Technical Conference as a whole – included many important topics and discussion points, one anecdote helps to crystalize just how much the BPS has and will continue to change. In responding to a question from now Acting Chairman Willie Phillips, Mr. Robb noted that at some point in the future, solar resources and how they handle minor disturbances may become the largest contingency for which grid operators need to prepare. As Mr. Robb outlined, inverter-based resources frequently react to minor disturbances on the grid by tripping offline en masse, turning small events into much larger interruptions.[4]

This response is not only indicative of the staggering degree to which NERC is expecting solar resources to grow, but also further illustrates the need to preserve flexible resources to backup non-dispatchable, inverter-based resources. Mr. Robb's testimony buttresses this fact, noting that "[n]atural gas – a dispatchable, flexible resource – plays a critical role as a balancing and energy firming resource supporting widespread deployment

[4] Technical Conference Transcript, Docket AD22-10-000, (Posted January 17, 2023), pp. 84-85, ("Transcript").

of variable resources essential to achieving clean energy goals."[5] This is consistent with previous NERC warnings, which provided that until storage technology is fully developed and deployed at scale, natural gas-fired generation will remain a necessary balancing resource to provide increasing flexibility needs required for reliable operations.[6] Mr. Robb had previously noted the critical importance of system predictability;[7] given the rapid growth of inverter-based resources, designing markets that properly incentivize flexible resources is of paramount importance. As flexibility continues to benefit the currently transitioning system, the Commission should encourage ISOs/RTOs to design technology-neutral products that would compensate for the provision of this product/service. Additionally, in order to ensure the optimal and lowest cost set of resources is procured to meet the identified flexibility need(s) (the bulk of which will likely be required to cover long-duration events), grid operators must be able to determine how much of the identified service will be needed – and possibly where – to avoid reliability challenges.

B. Properly Designed Markets Will Ensure an Orderly Transition

Heightening the challenges posed by inverter-based resources, with the passage of the Inflation Reduction Act of 2022 ("the IRA"), the pace of the energy transition may soon accelerate. As noted in the testimony of Mark Ahlstrom, "The IRA provides a path to 75% reductions in emissions over the coming decades with massive deployment of wind, solar and storage resources along with long-term resource diversity that will include nuclear energy and other carbon-free resources."[8] NERC itself is expecting a drastic change in the

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5 Robb Speaker Comments, p. 1.

6 North American Electric Reliability Corporation, *2021 Long-Term Reliability Assessment*, (December 2021), p. 6

7 Transcript, p. 51.

8 Speaker Comments of Mark Ahlstrom, NextEra Energy Resources, Panel 1, (November 3, 2022), p. 1.

resource mix, detailing that within the next 10 years, over 88 GW of generating capacity is confirmed for retirement through regional transmission planning and integrated processes.[9]

The scale of these legacy resources retiring, coupled with the mass integration of newer, non-dispatchable resources, will surely produce a BPS that performs very differently, and likely less predictably reliable, from that which system planners, stakeholders and consumers have long been accustomed. As Mr. Robb noted, we are replacing "well understood large central station generation" with new resources that have "very different operational risk characteristics."[10] All this is happening at a time when a greater share of the economy is electrifying, which further raises the stakes of preserving reliability of the electric system. These drastic changes will also produce a system where the vast majority of resources enters as price takers in capacity markets and zero *or negative* price bidders in the energy markets. This will have a drastic impact on natural gas-fired resources, which will likely still be needed to preserve reliability and will greatly alter the dynamics of the three markets operated by ISOs/RTOs – energy, capacity, and ancillary services. Given this new reality, a holistic approach will be needed when modernizing market mechanisms.

The best way to achieve an orderly, reliable transition would be for wholesale market design to address and incentivize clearly identified and measurable system needs and develop essential reliability services that can be bid on and procured through competitive markets. As each region may have its own unique characteristics, each RTO and ISO will likely need to identify the products and services that best suit its regional needs. Once these needs have been clearly identified and defined, the Commission should encourage

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[9] North American Electric Reliability Corporation, *2022 Long-Term Reliability Assessment*, (December 2022), p. 7.

[10] Transcript, p. 15.

ISOs/RTOs to design technology-neutral products that would compensate for the provision of each essential product or service that their regions require.

C. Increased Extreme Weather Events Highlight the Need for New Planning Parameters and Coordination

In addition, in an evolving grid, particularly one where extreme weather events and climate impacts are becoming more frequent,[11] the planning criteria and associated standards and requirements – as well as market design elements – may need to change. Given the present and possible future implications of the energy transition, grid operators must take both a current and forward look at the products and services needed as the grid continues to evolve. For example, resources that are currently providing significant quantities of natural gas-fired generation capacity will need to be retained for reliability, even though the utilization of these remaining gas resources will change substantially over time.

An examination of California's energy transition provides useful data to look ahead at hypothetical expected scenarios. Analysis performed by Energy and Environmental Economics ("E3") observed that in the 2020 California electric system, gas generation was utilized on a daily basis throughout the year to provide energy and essential grid services for reliability.[12] That same analysis found that in 2050 there will be many days in which no natural gas generation operates, and thus the fleetwide capacity factor is reduced to 11% in the High Electrification scenario – this represents a capacity factor decline from 21% in 2020

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[11] *FERC News Release,* "FERC, NERC to Open Joint Inquiry into Winter Storm Elliott," (December 28, 2022). NERC CEO and President Jim Robb stated: "This storm underscores the increasing frequency of significant extreme weather events (the fifth major winter event in the last 11 years)";

See also, Transcript, p. 16, Mr. Robb noted that "the weather conditions that the grid needs to operate under are becoming more extreme, and extreme doesn't mean infrequent. These weather systems appear to be what we term broader, deeper, longer. Broader in terms of the area of the country that's being affected by them. Deeper in terms of the extremity of temperature, either hotter than normal, or colder than normal, and of longer duration than we've seen in the past."

[12] Energy and Environmental Economics, *Long-Run Resource Adequacy under Deep Decarbonization Pathways for California*, (June 2019), p. 34.

to 12% in 2050.[13] While E3 projected that capacity factors significantly decline, the study found that California would likely need to retain at least 25 Gigawatts of nameplate gas generation capacity in order to maintain a reliable system.[14] In order to provide electric reliability, changes to the natural gas system, as discussed below, may be needed to allow the natural gas generators to operate more flexibly with intraday variations in output to be able to supplement the increased intermittent renewables on the system.

While California has its own unique characteristics and policy goals, given the incentives put into place by the IRA, it's not difficult to imagine a similar set of dynamics playing out across the rest of the country over the next few decades. To get ahead of the reliability issues that could arise from such a drastic shift, NERC, the ISOs/RTOs, or other designated reliability entities may need to reconsider reliability and planning criteria upon which current market design is based. In response, appropriate market design elements and procurement mechanisms may need to be adjusted and implemented to ensure adequate compensation for the resources required to meet the revised criteria. Importantly, the market and procurement reforms should take place within the context established by the appropriate reliability criteria to meet evolving conditions.

In addition to planning for the potentially worsening extreme weather events and climate impacts of the future, much can be done though markets to address the extreme events that the BPS will be grappling with in the near term. While EPSA is supportive of the work that NAESB is currently undertaking,[15] the recent events of Winter Storm Elliot

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13 *Id.*

14 *Id.*

15 In a joint letter dated July 29, 2022, then FERC Chairman Rich Glick and NERC CEO and President Jim Robb recommended that NAESB convene a forum a forum on gas electric harmonization, as outlined in one of the key recommendations from the FERC-NERC report on the February 2021 freeze in Texas and the South Central U.S. caused by Winter Storm Uri. NAESB convened the first of these meetings on August 30, 2022, and continues to regularly meet to address these issues.

demonstrate that even greater levels of gas-electric coordination may be necessary to preserve reliability. In particular, Storm Elliott clearly illustrated the need to further harmonize gas and electric protocols, as limited weekend scheduling opportunities injected increased procurement and purchasing risk into the gas markets to support gas-fired generation. The challenges related to the natural gas infrastructure and coordination with electricity markets will be further exacerbated as other industries electrify. EPSA is fully committed to continued engagement at NAESB and other forums to find solutions that better align the gas and electric industries and improve system reliability in both extreme and expected weather conditions.

D. Cybersecurity Will Remain a Critical Pillar of System Reliability

As the grid continues to evolve, the threats posed by cybersecurity attacks or breaches continue to increase. One way that cyber threats are mitigated is through bi-directional information sharing. EPSA members derive extensive benefits from being members of NERC's Electricity Information Sharing and Analysis Center ("E-ISAC"). As the primary security communications and collaboration channel for the electricity industry, the E-ISAC enhances the electric sector's ability to prepare for and respond to cyber and physical threats. In his testimony, Mr. Robb notes that the E-ISAC is expanding its membership to include gas utilities, providing them access to the E-ISAC Portal, cyber and physical security bulletins, CRISP, and other benefits.[16] EPSA is enthusiastically supportive of this critical measure. While the electric and gas sectors can benefit from enhanced operational coordination, these industries can also benefit from greater collaboration in addressing cyber and physical security threats.

[16] Robb Speaker Comments, p. 6.

Critical Infrastructure Protection ("CIP") Standards are another area where cyber and physical security concerns can be addressed. As now acting Chairman Phillips noted, these standards represent "a floor"[17] for what can be done to protect the BPS. EPSA has weighed in on multiple occasions[18] to support the Commission's efforts to extend cybersecurity incentives for measures that go beyond CIP requirements; however, EPSA has made clear that those incentives should be extended to *all* BPS stakeholders. As EPSA has previously noted, we recognize that incenting voluntary behavior may be more complicated for those entities that recover their costs through competitive markets rather than a guaranteed rate of return. While the Commission can offer a Return on Equity ("ROE") adder to cost-of-service entities, it has no such clear vehicle for providing independent power producers and competitive suppliers that operate in competitive markets with an opportunity to recover those costs or be offered incentives for security enhancements. With that said, single issue ratemaking may offer a pathway for the Commission to pursue.[19] Given the interconnected nature of the interstate electric system, it is only reasonable that all segments of the BPS should be incented to fortify their cybersecurity defenses to further strengthen the entirety of the system.

II. CONCLUSION

EPSA urges the Commission to ensure that markets are sending adequate price signals and procuring the products and services that best equip them to address both current and future reliability needs. The Commission should also ensure evolving reliability

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17 Transcript, p. 101.

18 Comments of the Electric Power Supply Association *Cybersecurity Incentives*, Docket RM21-3-000, (April 6, 2021),

Comments of the Electric Power Supply Association*, Cybersecurity Incentives*, Docket RM22-19-000, (November 7, 2022), ("2022 EPSA Cybersecurity Comments").

19 2022 EPSA Cybersecurity Comments, pp. 7-9*.* As EPSA noted in these comments, the Commission could achieve this policy through a formula rate or through FPA Section 205 filings.

needs are clearly articulated and addressed through market design and the development of new products or services that may be procured on a technology-neutral basis. EPSA also urges the Commission to examine existing reliability planning parameters and continue to advance gas-electric coordination discussions to better prepare for extreme weather events. It is also important that the Commission should extend voluntary cybersecurity incentives to all BPS participants.

Respectfully submitted,

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