UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference) Docket No. AD18-11-000

Panel III – "Managing the New Grid"

Statement of Roy Jones
On Behalf of the Large Public Power Council

I. Introduction and General Comments

A. ElectriCities of North Carolina and the Large Public Power Council

My name is Roy Jones and I am Chief Executive Officer of ElectriCities of North Carolina ("ElectriCities"). I appreciate the opportunity to appear before the Commission today as ElectriCities' representative, and on behalf of the Large Public Power Council ("LPPC").

ElectriCities is a membership organization that serves 89 public power communities in North Carolina, South Carolina and Virginia. ElectriCities also provides management services to North Carolina's two municipal power agencies – North Carolina Municipal Power Agency Number 1 and North Carolina Eastern Municipal Power Agency.

LPPC is an association of the 26 largest state-owned and municipal utilities in the nation and represents the larger, asset-owning members of the public power sector.[1] LPPC members are also members of the American Public Power Association ("APPA") and own approximately 90% of the transmission assets owned by non-federal public power entities. LPPC members are

[1] LPPC's members are: Austin Energy, Chelan County Public Utility District No. 1, Clark Public Utilities, Colorado Springs Utilities, CPS Energy (San Antonio), ElectriCities of North Carolina, Grand River Dam Authority, Grant County Public Utility District, IID Energy (Imperial Irrigation District), JEA (Jacksonville, FL), Long Island Power Authority, Los Angeles Department of Water and Power, Lower Colorado River Authority, MEAG Power, Nebraska Public Power District, New York Power Authority, Omaha Public Power District, Orlando Utilities Commission, Platte River Power Authority, Puerto Rico Electric Power Authority, Sacramento Municipal Utility District, Salt River Project, Santee Cooper, Seattle City Light, Snohomish County Public Utility District No. 1, and Tacoma Public Utilities.

located throughout the nation, both within and outside RTO boundaries, and they are subject to the Commission's electric reliability authority under Federal Power Act ("FPA") section 215.

With its membership spread across the nation, the generating resource base of the LPPC members is highly diverse, reflecting different capabilities that are a function of geography and varied state and local energy policies. The range of resources available to the LPPC membership includes a heavy concentration of hydroelectric facilities in the Pacific Northwest, substantial renewable investment throughout the nation, particularly in states such as California and New York, and a range of traditional thermal-based resources spread throughout the country.

B. General Comments

LPPC members are united in their commitment to a diverse generating resource base that includes a substantial level of renewable resources of various types. However, the extent of renewable penetration among members varies widely, as does the nature of the resources under their control and contract. The members have different perspectives on the nature of the challenge to a reliable and resilient grid that the integration of renewable resources at various levels poses.

In facing the challenge of an increasingly diverse resource base, LPPC members agree that FERC and NERC are better advised to focus on securing the necessary reliability attributes of generation than they are to focus on fuel type (e.g., coal, gas, nuclear, hydro, wind or solar). Policies promoting or mandating certain needed generation characteristics should be agnostic as to fuel type. This view was a core feature of LPPC's input in response to the Department of Energy's ("DOE") Notice of Proposed Rulemaking in Docket No. RM18-1.

With respect to the effect of the nation's changing resource mix on the level and sufficiency of Essential Reliability Services ("ERS"), I would like again to emphasize the

importance of being fuel agnostic. This is the way these related issues have been approached by NERC's ERS Working Group ("ERSWG"), the work of which came to fruition in its December 2016 Whitepaper.[2] LPPC followed and supports the good work done at NERC in developing metrics to track the availability of ERS as the nation's generating resource mix evolves.

There are things that must still be done to ensure an adequate level of ERS as the nation's resource mix continues to evolve. As I describe more fully below, these resources include: (1) frequency response; (2) ramping/balancing capability needed to compensate for the variable nature of intermittent generation; and (3) voltage support (reactive power). As to frequency response, though FERC recently required that all new generation must provide primary frequency response as a condition of interconnection, the level of interconnection-wide frequency support must be monitored carefully to ensure it does not deteriorate.

As to ramping capability, challenges vary substantially with the varied level of renewable penetration across the nation. In ISO/RTO markets with a high level of renewable penetration, the challenge has grown dramatically, and is greater than anticipated even two years ago. LPPC vigorously supports efforts to value ramping capability appropriately and implement market solutions encouraging the development and maintenance of adequate resources.

With that said, LPPC does not at this time see the need for new reliability standards addressed to these issues. I believe that careful monitoring by NERC and the development of market-based solutions in ISO/RTO markets is an appropriate response to the ERS challenge at this time.

[2] NERC, Essential Reliability Services Whitepaper on Sufficiency Guidelines (Dec. 2016), *available at* https://www.nerc.com/comm/Other/essntlrlbltysrvcstskfrcDL/ERSWG_Sufficiency_Guideline_Report.pdf ("ERSWG Whitepaper").

II. Specific Comments on ERS Trends and Challenges

A. Frequency Response Support

LPPC supports the work that has been undertaken at NERC to develop metrics for monitoring frequency support. LPPC also supports the action that FERC has taken specifically with respect to frequency response in requiring that all new generating facilities maintain equipment capable providing primary frequency response as a condition of interconnection.

Concern over the adequacy of frequency response in light of the changing resource mix goes back to the mid-1990s. In 2014, NERC established the Essential Reliability Services Task Force (later renamed the Essential Reliability Services Working Group, or ERSWG). The work of the ERSWG underscored concern but not alarm, as the industry has grappled with the implementation of NERC Reliability Standard BAL-003-1.1. In December 2016, the ERSWG issued a whitepaper setting out guidelines for measuring the adequacy of ERS, including frequency response. The whitepaper recommended forward-looking plans for evaluating and addressing the impact of a changing resource mix on frequency support.[3]

Closely related to these developments, NERC Reliability Standard BAL-003-1.1 requires Balancing Authorities ("BAs") to assure sufficient frequency response capability to meet their frequency response obligations.[4] The standard does not include requirements applicable directly to Generation Owners or Operators. For that reason, earlier this year in Order No. 842, FERC modified the Large and Small Generator Interconnection Procedures of the *pro forma* Open Access Transmission Tariff to require that newly interconnecting generators maintain and operate equipment capable of providing primary frequency response as a condition of

[3] *Id*.

[4] *Frequency Response and Frequency Bias Setting Reliability Standard*, Order No. 794, 146 FERC ¶ 61,024 (2014). Reliability Standard BAL-003-1.1 is subject to some adjustment in the context of an outstanding Standard Authorization Request to look at specifications for generator and system performance.

interconnection.[5] LPPC supported the NOPR leading to this rule, in comments filed jointly with APPA and the Transmission Access Policy Study Group ("TAPS").[6] These public power entities commented that the new rule would help assure that primary frequency response will not degrade in the coming years.

Order No. 842 does not apply to existing generation. Expressing support for this limitation, the public power entities noted that FERC itself recognized that frequency response in the Eastern and Western interconnections remained adequate.[7] FERC further said it would wait for further input from NERC in response to the Commission's earlier direction in Order No. 794 (accepting BAL-003-1.1) that NERC provide by July 2018 an update on the adequacy of frequency response capability.[8]

NERC's June 29, 2018 filing (Docket No. RM13-11) supports the conclusion that frequency response support remains stable. NERC reports that for 2017, BAs have the resources to meet their Frequency Response Obligations in Texas and the Western Interconnection, and this is generally true in Eastern Interconnection, with minor exceptions involving small BAs. While it is probably early to tell how significant an impact FERC's modification of the Generator Interconnection Procedures has had, there likely has been some effect, and NERC says that it will continue to monitor this situation. This is consistent with the review of frequency response performance included in NERC's 2018 State of Reliability Report.[9]

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[5] *Essential Reliability Services for the Evolving Bulk-Power System – Primary Frequency Response,* Order No. 842, 162 FERC ¶ 61,128 (2018).

[6] *See* APPA, LPPC and TAPS Comments, Docket No. RM16-6 (filed Apr. 25, 2016).

[7] Order 842 at P 19.

[8] *Id*., PP 144-45.

[9] NERC, State of Reliability Report – 2018 (Jun. 2018), *available at* https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC_2018_SOR_06202018_Final.pdf.

With that, we do not see the need for further FERC action or directives at this time. While the industry is obviously in transition, it appears that FERC's recent action, and NERC's ongoing monitoring of the situation give us the luxury of assessing developments before more dramatic action.

B. Ramping

Greater levels of non-dispatchable renewable power increase the need for generation with flexible ramping capability. These needs are acute in regions with high renewable penetration, the leading states among which include California and New York. California's dramatic "duck curve" detailing system peaks in morning and evening hours, while an increasing concentration of solar power peaks mid-day, underscores the need for fast-start ramping capability to follow load when intermittent generation falls off.

The last few years have seen these trends accelerate, as the effect of additional utility-scale renewable development has been amplified by solar-based distributed energy resources ("DERs"). The California Public Utilities Commission is projecting that investor-owned utilities in California will hit their mandatory 2030 50% renewable requirement as soon as 2020.[10] The California Independent System Operator ("CAISO") further anticipates that approximately 4,000 MW of additional transmission-connected renewables will be added to the grid by 2020 and an additional 10,000-15,000 MW will be connected by 2030.[11] By 2019, behind-the-meter solar PV is projected to be over 10,000 MW, increasing to just below 12,000 MW by 2020.[12] The CAISO

[10] CPUC, Renewables Portfolio Standard Annual Report, at 1, 12 (Nov. 2017), *available at* http://www.cpuc.ca.gov/uploadedFiles/CPUC_Website/Content/Utilities_and_Industries/Energy/Reports_and_White_Papers/Nov%202017%20-%20RPS%20Annual%20Report.pdf.

[11] CAISO, "Renewable Integration", presented by Mark Rothleder, CAISO Vice President, Market Quality and Renewable Integration, at 5 (May 12, 2017), *available at* www.caiso.com/Documents/RenewableIntegrationUnlockingDividends.pdf.

[12] *Id.* at 6.

reported that at the end of 2016 the ramping capability needed to offset actual net load (*i.e.*, load less intermittent resources that serve load off-peak) in the three-hour period between roughly 3:00 and 6:00 p.m. was nearly 13,000 MW.[13]

The situation in California is not unique. New York State has also committed to a 50% renewable goal by 2030,[14] and the state has embarked on an aggressive program to develop DERs.[15] And outside ISO/RTO regions, in my home state of North Carolina, we are working with a meaningful if less aggressive renewable portfolio standard for investor-owned utilities of 12.5%.[16]

Certainly, measures are being debated and to some extent implemented in order to address these challenges. The outstanding question is whether they will be sufficient and timely. CAISO implemented a flexible ramping product following FERC approval in 2016,[17] and is now at work on a more aggressive Flexible Resource Adequacy Criteria and Must Offer Obligation.[18] In the meantime, the California Energy Commission reports that, for now, ramping capabilities offered by existing resources are adequate but associated with old and insufficiently flexible facilities.[19] For its part, the New York ISO is at work on a flexible ramping product designed to

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[13] *Id.* at 7.

[14] 2015 New York State Energy Plan, https://energyplan.ny.gov/; *"Governor Cuomo Unveils 20th Proposal of 2018 State of the State: New York's Clean Energy Jobs and Climate Agenda"* (Jan. 2, 2018), https://www.governor.ny.gov/news/governor-cuomo-unveils-20th-proposal-2018-state-state-new-yorks-clean-energy-jobs-and-climate.

[15] New York Dept. of Pub. Serv., Reforming the Energy Vision, "About the Initiative," http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument.

[16] North Carolina Utils. Comm'n, Renewable Energy and Energy Effeciency Portfolio Standard, http://www.ncuc.commerce.state.nc.us/reps/reps.htm.

[17] *Cal. Indep. Sys. Operator,* 156 FERC ¶ 61,226 (2016).

[18] CAISO, Flexible Resource Adequacy Criteria and Must Offer Obligation – Phase 2, Working Group Meeting Presentation (Jun. 18, 2018), *available at* http://www.caiso.com/Documents/Agenda-Presentation-FlexibleResourceAdequacyCriteria-MustOfferObligation-Phase2-Jun18-2018.pdf.

[19] Calif. Energy Comm'n, Tracking Progress – Resource Flexibility, at 6-7 (Dec. 2017), *available at* http://www.energy.ca.gov/renewables/tracking_progress/documents/resource_flexibility.pdf.

address current and anticipated ramping needs.[20] Outside ISO/RTO regions, where states maintain authority over resource adequacy and utility-owned generating facilities are generally included in rate base, this is an issue that must be watched, but does not directly implicate FERC-jurisdictional markets.

These efforts in ISO/RTO regions to ensure adequate ramping capability are important. LPPC strongly supports the development of market mechanisms in ISO/RTO regions in order to support additional ramping capability. Accelerating developments in the very recent past underscore the need for action to be taken quickly, and we urge the Commission to follow this matter closely.

C. Voltage Support

As emphasized in the ERSWG Whitepaper, voltage support and reactive power resource management is critical to grid reliability. Challenges differ from frequency response and ramping needs in that they tend to be local in nature and are often focused on sub-areas of a BA. Transmission Planners, Transmission Operators and Owners must coordinate their approach to ensure an adequate level of resources in needed locations. This is a BA-level issue, and while planners must have the assurance that all applicable NERC standards are honored, more stringent regional or local criteria may also be useful.

III. Conclusion

The nation's changing electric generation resource mix presents substantial opportunities and challenges. Maintaining system reliability in view of these changes must be a priority. As the industry grapples with these changes, a focus on resource reliability attributes, and not on

[20] NYISO, Market Design Concepts to Prepare for Significant Renewable Generation – Reserve Procurement for Resilience, Presented by Ethan D. Avallone, Sr. Market Design Specialist – Energy Market Div. (May 23, 2018), *available at* https://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2018-05-23/Reserve%20Procurement%20for%20Resilience%20May%20MIWG%20FINAL.pdf.

specific fuel resources, is appropriate, and consistent with the way NERC is carrying out its role in evaluating ERS. The need for adequate ramping capability in regions with substantial renewable penetration and DERs is considerable and should be watched closely. We must also keep in mind that additional NERC standards or requirements are not the solution to every challenge, and seem not to be called for in connection with ERS at this time.

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