

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference )

Docket No. AD14-9-000

WRITTEN STATEMENT OF ALLEN MOSHER ON BEHALF OF  
THE AMERICAN PUBLIC POWER ASSOCIATION

On behalf of the American Public Power Association (“APPA”), I want to thank the Commission for holding this reliability technical conference and in particular to express APPA’s support for the Commission’s continuing focus on emerging issues that may adversely affect the reliability and affordability of electricity service provided to the American public. Many of these issues range far beyond the Commission’s jurisdiction, to include broad considerations of energy and environmental policy. However, without this broad focus, the Commission is unlikely to be able to meet its many statutory mandates, which include ensuring just and reasonable wholesale rates, approval and enforcement of standards for reliable operation of the bulk-power system, and oversight of NERC’s obligation under section 215(g) of the Federal Power Act to conduct periodic assessments of the reliability and adequacy of the bulk-power system in North America.

I also want to thank the Commission for providing me the opportunity to speak at this Technical Conference. It is a daunting task to summarize the diverse experiences and views of the nation’s 2,000 public power utilities. For that reason, my comments and recommendations will necessarily be at a high level. Public power utilities are united by a common not-for-profit business model characterized by local control and a commitment to providing consumers in the states and communities they serve with reliable electricity service at reasonable rates, while

meeting community expectations for environmental stewardship. However, the reliability issues and concerns these public power systems face are often quite different and depend very much on the availability and cost-effectiveness of power supply options in each region, as well as the preferences of community leaders and customers to embrace new alternatives such as distributed energy resources.

Let me begin my substantive remarks with a personal anecdote. In the late 1970s, I spent a year living in India, in essence studying “why the lights go out” - which in India they did with remarkable frequency and regularity. From that research, I gained one pivotal insight, which is that Americans have no idea how incredibly reliable and resilient all of this nation’s critical infrastructures are. Telecom, water, transportation, health care and energy – they all work day in and day out. Electricity is no exception. Wide-area, extended outages are rare and even distribution outages are infrequent if unpleasant occurrences (although some of my neighbors in Bethesda may disagree). However, reliability is not a birthright; it’s a commitment that requires adaption to change. The task before us is to identify, properly characterize, and then mitigate the emerging risks to reliability we face.

In May 2014, the Executive Office of the President released a policy white paper titled “The All-of-the-Above Energy Strategy as a Path to Sustainable Economic Growth”<sup>1</sup> that highlights the profound transformation that the U.S. energy sector is undergoing, through increased production of oil and natural gas from shale plays, a decline in U.S. petroleum consumption, flat electricity consumption, increased electric generation from gas and renewables, particularly wind and solar, along with significant declines in coal generation. The cumulative effect of these changes has been a roughly twelve percent reduction in U.S. energy-

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<sup>1</sup> The White House; *The All-of-the-Above Energy Strategy as a Path to Sustainable Economic Growth*  
[http://www.whitehouse.gov/sites/default/files/docs/aota\\_energy\\_strategy\\_as\\_a\\_path\\_to\\_sustainable\\_economic\\_growth.pdf](http://www.whitehouse.gov/sites/default/files/docs/aota_energy_strategy_as_a_path_to_sustainable_economic_growth.pdf).

related CO<sub>2</sub> emissions since 2007. Further, flat economic growth along with substantial declines in natural gas prices have kept electricity price increases down throughout much of the nation and even fostered the expansion of industrial production in the United States, as companies with energy-intensive operations have returned home to the U.S. to take advantage of our relatively affordable energy prices. The U.S. may well see on the order of \$90 billion in new manufacturing investment in fertilizer, steel and plastics, all resulting from shale gas used as a production feedstock.

This is great news, but it may be short-lived, if the infrastructure challenges we face aren't addressed quickly through a balanced mix of new electric and gas infrastructure and rules that ensure safe and reliable operation of that infrastructure. Here are several challenges that fall within the Commission's jurisdiction or may affect how the Commission exercises that jurisdiction.

First, current best estimates, based on a variety of forecasts, are that between 50 and 73 GW of coal generation will be retired by 2020. In addition, 4.2 GW of nuclear capacity is projected to be retired by 2015. The May 2015 deadline for compliance with EPA's Mercury and Air Toxics Standards is certainly a triggering event, but factors such as low natural gas prices, the possible reinstatement of the Cross-State Air Pollution Rule deadlines, and California-specific regulations on once-through cooling have contributed to this trend. With EPA's issuance on June 2, 2014 of its proposed rule for CO<sub>2</sub> emissions for existing power plants,<sup>2</sup> there will be increasing pressures to retire additional conventional steam generation. The multi-state trading programs and energy conservation programs contemplated by EPA's proposed rule may delay the day of reckoning for some existing coal-fired plants. Nonetheless, it is difficult for APPA to

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<sup>2</sup> *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*  
<http://www2.epa.gov/sites/production/files/2014-05/documents/20140602proposal-cleanpowerplan.pdf>.

envision the construction of new, low emission, coal-based generation beyond current demonstration projects given the complexities, costs, and legal uncertainties associated with carbon capture and sequestration. The resulting loss of coal and nuclear generation due to all of these factors could lead to tighter reserve margins in some regions and will reduce the amount of “inertia” these very large machines provide to help ensure frequency stability.

Second, much of the retired coal and nuclear capacity is being replaced by natural gas-fired generation, which raises questions about the ability of natural gas pipelines and local distribution companies to meet the needs of the electricity sector, particularly during severe weather conditions. Many merchant generators, particularly in RTO/ISO regions, rely on interruptible natural gas transportation rather than firm contracts, which proved to be problematic during last winter’s “polar vortex” conditions. APPA supports the efforts directed by FERC to align the electric and gas scheduling days, but the more fundamental issue is whether an adequate combination of gas pipeline capacity, destination market gas storage, and electric generation with dual fuel capabilities is being constructed and maintained.

As discussed in the Post-Technical Conference Comments of APPA and American Municipal Power, Inc. in Docket No. AD14-8-000,<sup>3</sup> the answer is no, or at least not yet. The polar vortex did demonstrate to many in the northeast the complex nature of the problem. For example, during the polar vortex, PJM relied heavily on coal-fired generation that is slated to be retired due to EPA regulations. New England was critically dependent on dual fueled oil generation that might not have been available but for out-of-market payments to maintain oil inventories. And one APPA member found that local gas distribution line pressures were not sufficient to meet delivery demands imposed by gas generation that can’t be sited directly

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<sup>3</sup> *Post-Technical Conference Comments of the American Public Power Association and American Municipal Power, Inc.* filed in FERC Docket No. AD14-8-000: Winter 2013-2014 Operations and Market Performance in Regional Transmission Organizations and Independent System Operators. [http://elibrary.ferc.gov/idmws/file\\_list.asp?accession\\_num=20140515-5218](http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20140515-5218).

adjacent to a major pipeline or lateral. However, APPA and AMP are convinced that RTO capacity markets ultimately cannot be redesigned to procure an efficient and economical portfolio of generation resources, even if out-of-market fixes are developed to address some of these issues.

Third, to look for a silver lining, the retirement of some conventional steam generation does create an opportunity for investment in new combined cycle and combustion turbine capacity with improved heat rates and faster ramping capabilities. Sometimes called “flexible generation,” these new plants are essential tools for system operators that face the challenge of mirroring the variability and unpredictability of wind and solar generation. While modest amounts of renewable generation can present mild headaches for system operators, the Renewable Portfolios Standards adopted in states like California are already imposing unprecedented stresses on system operations and the conventional generation used to follow load and regulate the system.

Fourth, much of the most recent growth in renewable generation in states like California and Arizona is retail customer-owned or leased solar photo-voltaic (PV) arrays. The combination of federal solar investment tax credits and other tax incentives, coupled with questionable retail feed-in tariffs, and in some cases, FERC-jurisdictional demand response programs, has converted a good thing for the environment and consumers into a set of complex operational headaches for the electric distribution system, safety concerns for utility line workers, and cross-subsidies by non-PV retail customers. This last set of challenges can and should be addressed primarily by utilities at the state and local levels. FERC can, however, encourage distribution utilities to adopt interconnection standards for customer generation that help ensure the aggregate effect of customer generation does not have an adverse impact on the Bulk Electric System (BES).

Further, at high levels of penetration, such as those anticipated in California, the cumulative impact of distributed energy resources, combined with growth in utility-scale wind and renewable generation, and the retirement of conventional generation could lead to frequent problems with balancing load and generation in real time, as system operators send signals to ramp up and ramp down dispatchable generation to offset highly variable wind and solar PV output, while keeping BES voltage and frequency within defined limits.

Public expectations about reliability, including quality of service, are increasing even as we begin a substantial transformation in the relationships between retail customers and their local utilities, driven by widespread use of distributed generation, smart grid applications, and new potential avenues for energy conservation. The overwhelming majority of retail customers are not very interested in the particulars of how electricity is generated, transmitted and distributed to them – they just want it to be there 24/7 at a reasonable price. A smaller but significant and very vocal portion of the public, including retail customers, is intensely interested in our business, often due to environmental issues such as concerns about climate change and support for renewable energy.

APPA believes that its members are well positioned to respond to the challenges I outline above. For example, because public power utilities are vertically integrated and invest in power supply resources to meet the long term reliability needs of our customers, we are prepared to invest in new utility-scale generation resources that meet our customers' needs while developing programs that integrate customer-owned generation into our distribution systems. We also have a variety of programs to help our members educate their customers on energy efficiency and smart grids, all at a scale that makes sense for their communities.

APPA urges the Commission to do a couple things. First, give NERC a well-deserved pat on the back for addressing many of these issues in technical reports and special reliability assessments, which in recent years have addressed the reliability impacts of environmental regulations, increased reliance by electric utilities on natural gas, and the operational challenges presented by integration of variable energy resources. NERC has become an authoritative source on each of these issues.

Second, APPA again urges FERC to initiate a fundamental reassessment of its over-reliance on capacity markets in the three eastern RTO regions. As discussed in detail in our January 8, 2014 comments in Docket No. AD13-7-000,<sup>4</sup> *Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators*, the increasing penetration of distributed generation will make it increasingly difficult to estimate the actual capacity that must be procured through RTO-run centralized forward capacity markets. Further, the complexities of reliable system operations outlined above clearly show that all MWs of generating capacity are not alike – but procuring the required portfolio through an administrative auction, whether through tranches or other mechanisms, is highly problematic. In our view, a much better approach would be to rely on bilateral contracting and self-supply by load serving entities that can make their own decisions based on factors such as fuel diversity, environmental benefits and risks, as well as the policy directives of state authorities and preferences of local communities. RTO capacity markets should at most serve a residual capacity market function. If the Commission is unwilling to adopt these recommendations, we again urge the Commission to allow public power systems to self-supply the needs of their own loads in RTO regions, as they do elsewhere in the United States.

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<sup>4</sup> *Post-Technical Conference Comments of the American Public Power Association* filed in FERC Docket No. AD13-7-000: Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators, [http://elibrary.ferc.gov/idmws/file\\_list.asp?document\\_id=14175598](http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14175598).

To sum up, keeping the lights on isn't going to get any easier, but APPA will continue to work with the Commission, NERC and the industry to ensure that we do.

Respectfully submitted,

/s/ Allen Mosher

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