UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference	)	Docket Nos. AD15-7-000
	)	and RR15-2-000

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

PANEL I: 2015 STATE OF RELIABILITY REPORT

On behalf of the American Public Power Association ("APPA") and the nation's 2000 public power utilities, I want to thank the Commission for holding this reliability technical conference. While the Commission, NERC and the industry face a daunting set of emerging reliability challenges, the current state of reliability is robust, with positive trends pretty much across the board.

August 8 will mark the 10th anniversary of passage of the Energy Policy Act of 2005, which added section 215 to the Federal Power Act. A mere 16 pages of double-spaced text that built upon pre-existing voluntary relationships to create an independent, FERC-certified, but industry focused and collaborative Electric Reliability Organization that develops and enforces standards for the reliable planning and operation of the bulk power system and conducts periodic assessments of the current and future state of reliability in North America.

The Commission's role in this regulatory framework is critical. Backed by the Commission's oversight of NERC and the regions, its directives to develop and improve reliability standards, and its support for NERC's efforts to make its compliance and enforcement program more risk-based, we have made significant progress on the basic blocking and tackling required to ensure reliable operation and planning of the bulk power system.

Now I'm not declaring victory or mission accomplished, but NERC's 2015 State of Reliability Report supports the conclusion that we are achieving an Adequate Level of Reliability. In 2014, we saw no load loss due to cyber or physical security events, a decline in average transmission outage severity, decreases in unplanned transmission outages, stable frequency response, a downward trend in protections system misoperations, and declining use of Level 3 energy emergency alerts. Meanwhile, we're implementing a series of improvements to the quality and clarity of NERC's reliability standards, and new programs to right-size the NERC compliance registry and adopt risk-based approaches to compliance and enforcement.

NERC and the industry have collaborated on a set of increasingly sophisticated long term and seasonal reliability assessments, special assessments of emerging reliability issues including integration of variable energy resources and the impact of environmental regulations, as well as the various indices and performance metrics that underlay the State of Reliability Report. If you like data-driven analysis, this stuff is pretty cool – NERC is actually trying to measure industry performance, identify problems as they emerge and address them through research, industry advisories, education, and where necessary, new reliability standards. NERC staff works with its technical committees, the regions and other industry bodies such as the NATF to develop increasingly sophisticated guidance to the industry, in the form of lessons learned, webinars and industry advisories.

In terms of work that falls within the scope of blocking and tackling, I would encourage NERC and the Commission to complete the development and approval of the many system protection or PRC reliability standards that are now being revised. Unlike the Version 5 CIP standards, PRC revisions are coming out as a series of staged revisions and updates to existing relay maintenance and coordination requirements. As of last week there were five PRC

standards, revisions and interpretations with future enforcement dates, 17 others awaiting FERC action, 14 that have been approved by the NERC board that have yet to be filed with the Commission, plus four projects under current development. Managing the transition is going to be complicated.

Let me also touch on several emerging issues that could result in major state changes in how the bulk power system performs.

EPA Clean Power Plan

First and foremost, APPA is deeply concerned that the EPA Clean Power Plan could become a legal, administrative, and operational morass that could jeopardize bulk power reliability. APPA filed supplemental comments with the Commission on May 14 in Docket No. AD15-4-000, which I will not attempt to summarize here. I will reiterate APPA's strong support for an active FERC role implementing a reliability assurance mechanism and reliability safety valve. The Commission should also undertake measures to assure adequate and efficient electric and gas infrastructure, and to improve FERC-jurisdictional tariffs and market rules, particularly in RTO capacity markets.

NERC and the Commission will also need to step up their system modeling capabilities. Changes in the generation fleet due to coal generation retirements, much greater reliance on natural gas, and increasing use of variable energy resources and demand response to meet customer load will have unforeseen impacts on system operations. Scenario analysis can reduce that uncertainty and risk to reliability.

Variable Energy Resources

Second, even without the EPA Clean Power Plan, the nation is increasing its reliance on both utility, community-scale and distributed variable energy resources, including both wind and solar. While investment is driven in part by federal tax policies, state renewable portfolio standards and retail net metering policies that could change in the future, the public's interest in clean energy is unlikely to abate. This interest places continued urgency on NERC's work to identify and develop metrics for essential reliability services such as frequency response, inertia and ramping, as well as improvements to how we model and forecast energy and capacity requirements. If we don't do this well, we'll end up with billions of dollars in out-of-market generation and transmission *and* a less reliable bulk power system. U.S. utilities are not eager to replicate the German experience. I doubt U.S. ratepayers are either.

Cyber and Physical Threats

Third, we need to continue our collective focus on emerging cyber and physical risks to the electric grid. The CIP Version 5 standards and recently approved CIP-014 establish the needed foundation for cyber and physical security. Utilities also need to improve security practices within their companies on an enterprise-wide basis. And we need to improve government-industry information sharing and emergency response planning. I can personally attest to the work that is being done within the Electricity Subsector Coordinating Council and the NERC ES-ISAC to address these issues. The Commission can expect some missteps in the implementation and enforcement of the CIP Version 5 standards. But these problems fall in the blocking and tackling bucket – NERC and the industry will work through the issues and get them resolved. We just need to maintain a clear eyed view of the risks involved, being neither dismissive nor alarmist.

Infrastructure Resilience

Fourth and finally, we need to have a broader conversation about infrastructure resilience. As the NERC State of Reliability Report points out, the ten most severe bulk power system events of 2014 were all weather related. Even so, these BPS level events were much less severe than the corresponding impact of storms and aging infrastructure on distribution system reliability. At least in wealthier, urban communities, the public may be gravitating toward an expectation of five 9's reliability – which implies one hour of cumulative service interruptions every ten years. Anything less indicates room for improvement. At the bulk power level, we need to address wide-area resilience, meaning: Are there additional design improvements we can make to ensure the bulk power system has sufficient redundancy to support post-event distribution system restoration? What level of electric infrastructure resilience does the nation need to protect the public interest and safeguard national security? These questions raise broader concerns about the impacts of electric infrastructure security and resilience on other infrastructure sectors that are critical to the nation's economic and national security.

Thank you the opportunity to participate in this Technical Conference. I look forward to your questions.