

**Written Testimony of Cheryl A. LaFleur
Commissioner
Federal Energy Regulatory Commission**

**Before the
Committee on Energy and Commerce
Subcommittee on Energy and Power
United States House of Representatives**

**Hearing on
Oversight of the Federal Energy Regulatory Commission**

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Chairman Whitfield, Ranking Member Rush, and members of the Subcommittee:

My name is Cheryl LaFleur, and I am honored to appear before you today as a Commissioner at the Federal Energy Regulatory Commission (FERC or Commission). In addition to serving as a Commissioner, I had the privilege of serving as Acting Chairman and Chairman of the agency from November 2013 through April 2015. Thank you for holding this oversight hearing on the Commission's work, and for the opportunity to testify.

Before joining the Commission in 2010, I spent much of my professional career working to serve electric and natural gas customers in the Northeast, experience that has informed my understanding that all regulatory policies affect real customers. I led energy efficiency programs and other services for business and residential customers, as well as major efforts to improve distribution reliability and safety. I had the experience of working in a vertically-integrated bilateral market as well as in a competitive marketplace served by merchant generation. Since joining FERC, I have tried to bring the breadth of my experiences with customers to further the Commission's responsibility to ensure the reliability of the nation's electric supply at just and reasonable rates. I have also made it a continuing priority to learn about the needs and opportunities of different regions of the country, and to help adapt FERC policy to reflect them.

Because American society and our economy depend upon the reliable supply of electric power, maintaining the reliability of the nation's electric grid has been my top priority since joining the Commission in 2010. In my testimony today, I am going to briefly touch on two core aspects of the Commission's reliability work: (1) our efforts to protect the grid from emerging systemic reliability challenges through the adoption of mandatory reliability standards, and (2) our oversight of wholesale electric markets. My colleague, Commissioner Clark, will address another key component of the Commission's reliability work, our responsibility for authorizing the construction of energy infrastructure.

Supporting Reliability through Mandatory Reliability Standards

The Commission's direct jurisdiction over electric reliability comes from section 215 of the Federal Power Act, which Congress enacted as part of the Energy Policy Act of 2005. Section 215 directs the Commission to certify and work with an independent Electric Reliability Organization (ERO) to develop reliability standards for the Bulk-Power System. In 2006, the Commission certified the North American Electric Reliability Corporation (NERC) as the ERO. Under the unique statutory relationship established by Congress, reliability standards are typically first developed by NERC pursuant to an open and inclusive stakeholder process, and then submitted to the Commission for review and approval. However, section 215 also vests the Commission with authority to direct NERC to develop or modify reliability standards if the Commission determines that a new or modified standard is necessary to address a reliability concern. The Commission has frequently exercised that authority to help ensure the reliability of the grid.

The reliability standards for the bulk electric system range from day-to-day, nuts and bolts requirements to keep the lights on, to forward-looking standards to address emerging issues, like cybersecurity, physical security, and geomagnetic disturbances. The Commission, NERC, and industry have made significant progress in the past several years on the nuts and bolts issues, including promulgation of standards addressing tree trimming, frequency response, under-frequency load shedding, reliability planning criteria, and protection system maintenance and testing, among other areas.

The Commission has also been actively engaged in efforts to address emerging threats to the grid. These issues present different challenges than the day-to-day activities I mentioned, because in many cases we do not have the benefit of decades of experience to draw upon. Instead, because these threats are either constantly evolving or not fully understood, the Commission must work to develop meaningful, cost-effective protections in an environment of rapid change and imperfect knowledge. Despite this difficulty, the Commission has been proactive to identify and address emerging threats.

Reliability and grid security require protection of the physical security of the assets that make up the grid. In March 2014, the Commission exercised its authority under section 215 of the Federal Power Act to direct NERC to develop reliability standards to enhance physical security measures for critical bulk-power system facilities. In November 2014, the Commission approved the proposed reliability standards, which require owners and operators of bulk-power system assets to (1) perform a risk assessment of their systems to identify critical facilities; (2) evaluate potential threats to, and vulnerabilities of, those critical facilities; and (3) develop and implement a security plan to protect against attacks on those facilities. Entities subject to those requirements are now implementing them to protect the grid.

With respect to cybersecurity, the Commission and NERC have continued to refine and improve the Critical Infrastructure Protection Standards to address new challenges. In late 2013, the Commission approved Version 5 of the Critical Infrastructure Protection Standards, requiring for the first time that all electric system cyber assets receive some level of protection, commensurate with their impact on the grid. The industry is now working to implement those requirements, and the Commission and NERC are working to assist with the transition. In addition, this summer the Commission announced that it is considering whether to direct the development of a Reliability Standard addressing cyber threats to the electric infrastructure supply chain, and the Commission has scheduled an upcoming technical conference to further explore the issue. We will continue to monitor cybersecurity developments and determine whether additional reforms to the reliability standards are appropriate.

The Commission's work on cybersecurity threats is not limited to modernizing the standards, however. Because cyber threats are constantly evolving, we recognize that they cannot be addressed with reliability standards alone. Therefore, the Commission and its staff work with leaders across the electric industry and federal and state governments to identify, communicate, and respond to cyber threats against the grid.

The Commission has also sought to address the threat posed by geomagnetic disturbance (GMD) events caused by solar storms. This issue has been a personal priority during my time at the Commission, given the potentially catastrophic effects that a major blackout triggered by a GMD event could have on the country. To date, the Commission has taken a two-step approach to address this threat. First, using its authority under section 215 of the Federal Power Act, the Commission directed NERC to develop a standard or set of standards that require transmission owners to take operational steps to prepare for GMD events. The Commission approved those

standards in June 2014. Next, the Commission directed NERC to develop standards that require transmission owners to protect against instability, uncontrolled separation, or cascading failures of the Bulk-Power System caused by a GMD event. In May, the Commission proposed to approve NERC's second-phase GMD standards, but to require certain revisions: (1) tightening the definition of a benchmark GMD event, which will be used to establish the baseline protections that must be in place; (2) adding more monitoring and assessment of GMD data; and (3) ensuring that corrective action plans are implemented in a timely manner. That proposal is currently pending before the Commission.

As the Commission, NERC, and industry have gained additional experience under the current standards, we have made adjustments to the reliability standards and the oversight processes to prioritize the protection of critical assets. Going forward, we will continue to be vigilant in our efforts to improve on the progress the Commission and NERC have made in setting priorities, developing and implementing reliability standards, mitigating violations, and disseminating lessons learned.

Supporting Reliability through Market Oversight

In addition to our reliability standards work, the Commission's oversight of wholesale electric markets plays a critical role in ensuring reliability of the nation's electric supply. To continue to meet our core responsibilities – promoting reliability and ensuring just and reasonable rates – the Commission has worked to ensure that these markets adapt to the significant changes in the nation's generation resource mix.

Two-thirds of the nation's population is served by the competitive regional electric markets run by Regional Transmission Operators (RTOs) and Independent System Operators

(ISOs). These markets have expanded in recent years, as more entities recognize the value of markets in ensuring reliability and the affordability for customers. At the end of 2013, the Midcontinent ISO expanded to include large parts of Louisiana, Mississippi, Arkansas, Texas, and Missouri. In October 2015, the Southwest Power Pool nearly doubled in size to incorporate the “Integrated System,” which spans seven states in the Upper Midwest. Finally, the Energy Imbalance Market, which is run by the California ISO and covers parts of six states, began in late 2014, and several additional utilities have announced their intention to join.

The nation is experiencing significant change in the resource mix used to generate electricity. There are three primary drivers of this change. First, we are experiencing a significant increase in the reliance on natural gas for electric generation, due primarily to the increased availability and affordability of domestic natural gas, but also to its relative environmental advantages and its role in balancing the growing fleet of variable resources. Second, we are seeing considerable growth in renewable and demand-side resources, fostered by developments in technology and by policy initiatives at both the state and Federal level. Finally, new environmental regulations, particularly the Environmental Protection Agency’s Mercury and Air Toxics Standards and Clean Power Plan, which Commissioner Honorable will address in her remarks, are driving changes in power supply.

These changes are stress-testing the competitive markets. The growth of natural gas resources as well as new environmental requirements are leading to the retirement of baseload capacity, particularly coal, and driving the need for new investment. During the initial transition to competitive market structures, most regions had excess capacity, and regional markets produced efficiencies that led to lower wholesale prices. As resources have retired, some areas are transitioning from generation surpluses to scarcity. That scarcity is leading to higher forward

capacity prices and more focus on market outcomes. At the same time, affordable and abundant domestic natural gas is creating challenges for other resources, while the deployment of new renewable technologies is leading to integration challenges. In many places, we see lower energy prices during most hours due to the low variable cost of renewables and gas, yet we also see spikes in the cost of electricity during times of system stress.

These changes are also causing the competitive market operators across the country to examine their rules to ensure that reliability is properly valued and sustained. At a time of resource change and the need for new investment, it is particularly important that markets send accurate price signals to both existing and new resources. The Commission's recent efforts have focused on all aspects of our competitive markets, including the energy, capacity, and ancillary services markets. As I mentioned when I previously testified before this committee, starting in 2013, the Commission has worked to help adjust capacity markets to these new challenges and attract needed investment in new and existing resources. In the last year and a half, the Commission approved market changes in eastern RTOs that redefine the capacity product to procure generation resources that can perform when needed most, to ensure that we can keep the lights on during extreme weather events and other times of system stress.

In addition to our efforts on the organized capacity markets, last year the Commission began an effort to examine price formation in organized energy markets, to ensure that energy prices are providing accurate and transparent price signals to both existing and new resources. The primary goal of the price formation effort is to ensure that marginal energy prices properly and transparently reflect the true costs of supplying electricity and support efficient investments to maintain reliability. FERC held a series of technical conferences over the last year on significant but highly technical issues that impact energy prices in the wholesale markets, and the

Commission has begun to act on discrete issues identified through that process. In September, the Commission issued a Notice of Proposed Rulemaking on aligning settlement intervals with dispatch intervals and on shortage pricing, to help ensure that real-time prices reflect the true value of providing energy and provide appropriate signals for resources to respond to the operating needs of the market. Last month, the Commission issued an Order Directing Reports, seeking more information on several other technical areas that impact price formation in the markets, including pricing of fast-start resources, commitments to manage multiple contingencies, look-ahead modeling, uplift allocation, and transparency. The Commission has also signaled its intent to act in the coming months on other price formation issues.

Separately, the Commission has also focused on gas-electric interdependence issues, an effort that grew out of the increased reliance on gas-fired generation, particularly in regions that also rely on natural gas for heating during the winter. After engagement with stakeholders, the Commission determined there was a need to better align the gas markets and the electricity markets to optimize the use of our pipelines to ensure the reliable operation of gas-fired generation. On that front, FERC established new rules to better harmonize scheduling in the gas and electric markets to provide the most efficient scheduling rules for both industries. The Commission also modified its rules to promote increased communication between transmission operators and gas pipelines. These market rules changes should help maintain reliability at times when gas pipeline capacity is stressed.

The Commission also adopted a number of other markets rules to help accommodate the integration of renewables and other new technologies into the energy markets. In recent years, FERC has issued rules to integrate variable energy resources, compensate resources for providing frequency regulation in a way that recognizes greater contributions from faster

ramping resources, compensate demand response resources, and reform transmission planning and cost allocation requirements so that they consider, among other things, transmission needs driven by state and federal public policy requirements. All of these rules are intended to ensure that we are optimizing the resources that serve customers and support our goals of ensuring grid reliability.

Ultimately, maintaining the reliability of the electric grid is of paramount importance to our way of life and our economy. The Commission's responsibilities for reliability are at the very core of our work, and I am honored to play a role in those efforts. I thank the Subcommittee for giving me the opportunity to appear before you today, and I welcome your questions.