

**Testimony of David S. Ortiz, Ph.D.
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**“Keeping the Lights On: Enhancing Reliability and Efficiency to Power American
Homes”**

**Subcommittee on Energy, Climate and Grid Security
Committee on Energy and Commerce**

**United States House of Representatives
September 13, 2023**

Introduction

Chairman Duncan, Ranking Member DeGette, Chair Rodgers, Ranking Member Pallone, and Members of the Subcommittee, thank you for the opportunity to testify today. My name is David Ortiz, and I am the Director of the Office of Electric Reliability (OER) of the Federal Energy Regulatory Commission (FERC or Commission). I am here today as a Commission staff witness and my remarks do not necessarily represent the views of the Commission or any individual Commissioner.

The Commission’s role on reliability is to help protect and improve the reliability of the Nation’s Bulk-Power System through effective regulatory oversight as established in the Energy Policy Act of 2005. My testimony summarizes the Commission’s oversight of the reliability of the Bulk-Power System and recent Commission activity implementing that authority. I then address draft legislation referred to as the Guaranteeing Reliable Infrastructure Development Act or “GRID Act.”

FERC’s Reliability Authority

In the Energy Policy Act of 2005, Congress amended the Federal Power Act to add section 215 pertaining to Bulk-Power System reliability. Through this provision, Congress tasked the Commission with responsibility to oversee mandatory, enforceable reliability standards for the Nation’s Bulk-Power System. This authority pertains to the interconnected electric power system (the “grid”) in the United States, and excludes Alaska, Hawaii, and local distribution systems. The Bulk-Power System also includes the electric energy needed to maintain transmission system reliability.

Section 215 requires the Commission to select an Electric Reliability Organization (ERO) that is responsible for proposing, for Commission review and approval, reliability standards to help protect and improve the reliability of the Nation’s Bulk-Power System. The Commission certified as the ERO the North American Electric Reliability Corporation (NERC). The reliability standards apply to the users, owners and operators of the Bulk-Power System and become mandatory in the United

States only after Commission approval. NERC and its six Regional Entities enforce the reliability standards and may impose penalties for noncompliance, after notice and opportunity for hearing, subject to review and approval by the Commission. The Commission may also enforce reliability standards independently of NERC.

The Commission may approve proposed reliability standards or modifications to the standards if it finds them to be “just, reasonable, not unduly discriminatory or preferential, and in the public interest.” If the Commission disapproves of a proposed standard or modification, section 215 requires the Commission to remand it to the ERO for further consideration. The Commission does not have the authority to modify or author a standard. Rather, on its own motion or upon complaint, the Commission may direct the ERO to develop and submit for Commission approval a new or modified standard on a specific matter to address a reliability gap.

Recent FERC Activity Pertaining to Bulk-Power System Reliability

Chairman Phillips’s reliability priorities are: (1) protecting the grid from cyber and physical attacks; (2) preparing for extreme weather; and (3) ensuring reliability as the resource mix changes. I would like to highlight a number of FERC’s recent activities in these areas.

1. Protecting the grid from cyber and physical attacks

Since 2008, FERC established and then improved upon the set of Critical Infrastructure Protection (known as “CIP”) standards, which include a comprehensive baseline set of requirements for cyber and physical security.

Cybersecurity standards seek to protect the grid from cyber threats. In 2018 FERC approved a new CIP standard addressing the supply chain for industrial control system hardware, software, and related services associated with the Bulk-Power System. In January, we finalized a rule requiring NERC to develop enhanced cybersecurity standards regarding internal network security monitoring. In March, we approved a new reliability standard to further protect our electric system supply chain from hostile actors, and in April, we issued another final rule, this time implementing the requirement in the Infrastructure Investment and Jobs Act (IIJA) that the Commission establish a system of incentives to reward certain cybersecurity investments.

There has been a mandatory physical security reliability standard since 2014. In December 2022 FERC directed NERC to conduct a study evaluating the efficacy of the Physical Security Reliability Standard (CIP-014-3) and recommending any needed improvements to the standard. NERC submitted the required study in April. FERC and NERC hosted a joint technical conference on physical security on August 10, 2023. After receiving post-conference comments, FERC will determine appropriate next steps.

2. Preparing for extreme weather

Protecting the grid to better ensure that the lights stay on during extreme weather events continues to be an ongoing challenge. Since 2011, seven major extreme heat and cold weather events put stress on the Bulk-Power System and resulted in some degree of load shedding. The Commission, jointly with NERC, conducted studies of some of these weather-related grid events and issued reports analyzing the root causes and made recommendations to mitigate future occurrences.

FERC took a lead role in ensuring that the recommendations from the event reports are implemented to improve the grid's ability to withstand extreme heat and cold weather events. In August 2021, FERC approved modified reliability standards pertaining to cold weather preparedness for electric generators and requiring that system operators exchange information related to the generator's capability to operate under such conditions. In February 2023, the Commission approved NERC's proposed modification of an emergency operations standard as well as a new reliability standard titled "Extreme Cold Weather Preparedness and Operations." The Commission also directed NERC to develop further revisions to the two reliability standards to better address grid operations during extreme cold weather conditions.

Most recently, in June 2023, FERC issued orders that address the reliability impacts of extreme weather. First, a Commission final rule directs NERC to submit within 18 months (from the effective date of the final rule or December 23, 2024) proposed new or modified reliability standards that require transmission system planners to prepare for extreme heat and cold weather events and to take corrective actions to mitigate instances where performance requirements during extreme heat and cold weather events are not met. I understand that NERC is currently developing the directed reliability standard and look forward to NERC submitting its proposal to the Commission.

In a second order issued in June 2023, the Commission directed transmission providers to file one-time informational reports describing their current or planned policies and processes for conducting extreme weather vulnerability assessments of their Commission-jurisdictional transmission assets and operations.

3. Reliability challenges presented by the changing resource mix.

The changing resource mix has also presented a number of reliability challenges. In particular, the growth of inverter-based resources — solar photovoltaic, wind, and battery storage — requires a rethinking of the way the interconnected electric grid has been planned and operated for more than a century. Of particular concern, inverter-based resources may cease to inject energy into the grid during normal disturbances (also known as "faults") that synchronous resources inherently were able to "ride through."

This simultaneous loss of generation resources may cause or exacerbate grid events, as documented in a series of reports by NERC. As a further concern, transmission planners and operators often do not have visibility to the operational characteristics of inverter-based resources connected to the Bulk-Power System. As a result, transmission models are incomplete and may not reflect the actual response of the grid to disturbances.

FERC took several actions to address the reliability concerns associated with inverter-based resources. In a November 2022 notice of proposed rulemaking, FERC proposed to direct that NERC develop new or modified reliability standards that address reliability gaps related to inverter-based resources, including: data sharing; model validation; planning and operational studies; and performance requirements such as the continued injection of energy during a normally cleared fault.

Related, in August 2023, the Commission issued Order No. 2023, which updates and improves the Commission's interconnection procedures and *pro forma* interconnection agreements to address interconnection queue backlogs, improve cost and timing certainty, and prevent undue discrimination for changing technologies. Importantly, Order No. 2023 establishes modeling and ride-through requirements for inverter-based resources as a condition of interconnection.

The GRID Act

The Guaranteeing Reliable Infrastructure Development Act or "GRID Act" would establish a process that triggers mandatory FERC review and comment on certain "covered agency actions." I offer the following comments on the proposed GRID Act in the areas of: (1) assessing impact on reliability; (2) resource requirements; and (3) timeliness and coordination. Further I propose some alternatives that could achieve similar goals.

As an initial matter, the goal of ensuring appropriate coordination among agencies with respect to reliability of the electric transmission system is laudable. The proposal could pertain to a wide variety of proposed Federal agency actions that potentially impact Bulk-Power system operations. Therefore, it is difficult to anticipate the range of covered agency actions that could trigger FERC review and comment. Further, per section 215 of the Federal Power Act, the Commission's reliability jurisdiction is limited to the operating reliability of the Bulk-Power System. Therefore, local or distribution-level impacts of covered agency actions would not necessarily trigger Commission review.

As a general matter, FERC and the ERO have the necessary expertise to understand and comment on the potential effect of proposed regulatory action on the reliability of the Bulk-Power System. However, the Commission's capacity is not sufficient to perform a detailed prospective assessment of the possible negative impacts,

and potential mitigations, of a covered agency action on electric reliability. The Office of Electric Reliability regularly performs and validates power flow simulations supporting various filings but fulfilling the goal of the GRID Act would require detailed interconnection-wide modeling and analysis beyond our capabilities. Further, FERC may not have the underlying data – or authority to obtain such data – necessary to conduct a meaningful assessment of the proposed actions’ impact on the bulk-power system. These limitations could hamper the ability of FERC to provide useful and timely comment to the relevant Federal agency.

Other organizations have these capabilities, resources, and data. Utilities and system operators plan and manage the grid on a daily basis. The Department of Energy’s national laboratories have deep expertise in the electric transmission system and its underlying technologies, computing power, policy, and related sciences. Further, the laboratories are well positioned to engage with agencies to evaluate the reliability impacts of proposed actions. The Commission could develop the capacity to perform its intended role under the proposed legislation, though it would be duplicative of capacity available elsewhere in the Federal government.

Conclusion

FERC will continue to work with the utility industry to execute its responsibilities under section 215 of the Federal Power Act to protect and enhance the reliability and security of the electric grid. Further, with regard to the proposed GRID Act, FERC stands ready to serve and assist to the best of its ability in this matter.

Thank you for the opportunity to testify today. I would be glad to address any questions you may have.