

Mr. Chairman, Ranking Member and Members of the Committee: Thank you for the privilege to appear before you today to discuss the security of the power grid. My name is Joe McClelland and I am the Director of the Office of Electric Reliability at the Federal Energy Regulatory 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.

In the Energy Policy Act of 2005, Congress entrusted the Commission with a major new responsibility to oversee mandatory, enforceable reliability standards for the Nation's bulk power system. This authority is in section 215 of the Federal Power Act. It is important to note that FERC's jurisdiction and reliability authority under section 215 is limited to the "bulk power system," as defined in the FPA, which excludes Alaska and Hawaii, as well as the local distribution systems.

Under the section 215 authority, FERC cannot author or modify reliability standards but must depend upon an Electric Reliability Organization, or ERO, to perform this task. The Commission selected the North American Electric Reliability Corporation, or NERC, as the ERO. The ERO develops and proposes reliability standards or modifications for the Commission's review, which it can then either remand or approve.

If the Commission approves the proposed reliability standard, it becomes mandatory and enforceable in the United States, applying to the users, owners and operators of the bulk power system. If the Commission remands a proposed standard it is sent back to the ERO for further consideration.

In my view, section 215 of the Federal Power Act provides an adequate statutory foundation for the ERO to develop most reliability standards for the bulk power system. However, the nature of a national security threat by entities intent on attacking the United States through vulnerabilities in its electric grid stands in stark contrast to other major reliability vulnerabilities that caused regional blackouts and reliability failures in the past, such as tree trimming and equipment maintenance practices.

Widespread disruption of electric service can quickly undermine of the United States government, its military and the economy, was well as endanger the health and safety of millions of its citizens. Given the national security dimension to this threat, there may be a need to act quickly to protect the grid, to act in a manner where action is mandatory rather than voluntary and to protect certain information from public disclosure.

While the Commission is considering actions that it can take under its current authority, this authority may not be sufficient in cases where mandatory action is needed to protect the United States from physical threats that endanger our nation's security.

One example of a physical threat is an electromagnetic pulse, or EMP, event. EMP events can be generated from either naturally occurring or manmade causes. In 2001, Congress established a commission to assess the threat from EMP. In 2004 and again

in 2008, the commission issued its reports. Among the findings in the reports was that a single EMP could seriously degrade or shut down a large part of the electric power grid. Depending upon the attack, significant parts of the infrastructure could be “out of service for periods measured in months to year or more.”

In order to better understand and quantify the effect of EMP on the power grid, FERC staff, the Department of Energy and the Department of Homeland Security sponsored a study by the Oak Ridge National Laboratory and their subcontractor Metatech in 2010.

The results of the study support the general conclusion of prior studies that EMP events pose substantial risk to equipment and operation of the nation’s power grid and under extreme conditions could result in major long-term electrical outages. In fact, solar magnetic disturbances are inevitable with only the timing and magnitude subject to variability.

The study assessed the 1921 solar storm, which has been termed a 1-in-100 year event, and applied it to today’s power grid. The study concluded that such a storm could damage or destroy in excess of 300 bulk power system transformers, interrupting service to 130 million people with some outages lasting for a period of years.

In February 2012, the North American Electric Reliability Corporation released its Interim Report: Effects of Geomagnetic Disturbances on the Bulk Power System. In it, they concluded that the most likely worst-case scenario system impact from a severe geomagnetic disturbance is voltage instability and voltage collapse with limited equipment damage and recovery times measured in hours or days.

On April 30, 2012, the Commission held a technical conference to discuss issues related to the reliability of the bulk power system as affected by geomagnetic disturbances. The conference explored the risks and impacts from geomagnetically induced currents to transformers and other equipment on the bulk power system, as well as options for addressing or mitigating risks and impacts.

The Commission is considering the comments filed after that conference and what actions it can take under its current authority to address national security threats to the reliability of our power system from EMP. Although the Commission’s current authority allows it to require submission by the ERO of proposed standards to address the EMP threat to the United States, it does not allow the Commission the ability to author the standard, thereby limiting its effectiveness.

These types of threats pose an increasing risk, an increasing risk, to the power grid that serves our nation, and the Commission is therefore considering actions it can take under its current authority. Any new legislation should address several key concerns, including allowing the federal government to take action before a cyber or physical national security incident has occurred, ensuring appropriate confidentiality of sensitive information developed under new authority, and allowing cost recovery for entities that mitigate vulnerabilities and threats.

Thank you again for the opportunity to testify today. I would be happy to answer any questions you may have.