Testimony

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FOR A HEARING ON

Perspectives on Protecting the Electric Grid from an Electromagnetic Pulse or Geomagnetic Disturbance

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Chairman Johnson, Ranking Member Peters, and members of the Committee, good morning and thank you for the opportunity to discuss the U.S. Department of Homeland Security's (DHS) ongoing efforts to secure our Nation's critical infrastructure against threats from electromagnetic pulses (EMP) and geomagnetic disturbances (GMD).

As a short introduction, I am the Assistant Director for Infrastructure Security within the Cybersecurity and Infrastructure Security Agency (CISA) at DHS. I want to thank all of you for your leadership in passing the *Cybersecurity and Infrastructure Security Agency Act of 2018*. I appreciate the interest of this Committee on threats from EMP and GMD. While I am new to my current role, I previously served as the Managing Director of Enterprise Security for Duke Energy and I am the former Director of Critical Infrastructure Protection Programs at the North American Electric Reliability Corporation (NERC), so I am very familiar with the risk management issues we are discussing today.

CISA serves as the Nation's risk advisors for critical infrastructure owners and operators. We lead the national effort to secure and protect critical infrastructure from all threats and hazards, to include EMP and GMD. CISA's primary role in managing EMP and GMD risks is through cross-sector coordination and information sharing, to ensure stakeholders have access to current information on risks and any resources to assist with mitigation efforts. This includes sharing information on EMP and GMD risks with stakeholders through a variety of mechanisms, including: Sector Coordinating Councils (SCCs), Government Coordinating Councils (GCCs), Cross-Sector Councils, and Information Sharing and Analysis Centers (ISACs), among other fora.

The potential effects from nuclear EMP and GMD events on critical infrastructure are related, and some risk mitigation measure may have synergies. However, the threat is very different, and so it is important to address them separately for clarity. Regarding the current threat for nuclear EMP attacks, analysis completed by the the Intelligence Community (IC) and the nuclear weapons community provides periodic joint assessments of the nuclear weapons capabilities of foreign countries, including their capacity to generate EMP attacks. The IC currently has no specific, credible information indicating that there is an imminent threat to critical infrastructure from an EMP attack. However, the consequences of a successful nuclear EMP attack using a nuclear weapon detonated at high altitude are potentially severe, and may include long-term damage to significant portions of the Nation's electric grid and communications infrastructure. Under joint DHS and U.S. Department of Energy (DOE)funding, the United States nuclear weapons laboratories most recently completed a preliminary nuclear EMP impacts assessment in April 2018 for the Nation's bulk electric power system. This study developed a spectrum of EMP attack scenarios and estimates of potential impacts. Although additional work is required, this study provides a basis for more advanced risk assessments in the electric sector and a framework for risk assessments in other sectors. DHS, in collaboration with interagency partners, is working to provide owners and operators of critical infrastructure with the resulting information and frameworks to help them manage the risk of electromagnetic events.

Regarding the threat from GMD, DHS is co-leading an Administration-wide effort to develop an updated implementation plan for the U.S. Government's National Space Weather

Strategy and Action Plan that addresses the mix of short- and medium-term objectives laid out in that plan. The Department's focus is on risk mitigation for critical infrastructure from EMP and GMD effects as well as emergeny preparedness planning. The prioritization of efforts undertaken by DHS will derive from this plan and will be coordinated with industry groups, our interagency partners, and the research and development community to ensure that DHS resources are providing value. The DHS efforts on GMD will also benefit some aspects of assessing and mitigating the effects of nuclear EMP attacks. It should be noted that the electric industry, through NERC and Federal Energy Regulatory Commision (FERC) have already taken steps to screen for and mitigate the effects of GMD at many utilities in the country.

All critical infrastructure sectors are, to some degree, at risk from EMP and GMD events due to the potential loss of critical functions. However the precise extent of critical infrastructure vulnerabilities to such events remain uncertain. We acknowledge that sectors like energy and communications are of greatest concern due to their vulnerabilities to EMP, however, other sectors are also at risk due to their dependencies on these two sectors. For those reasons, relative to other sectors, there have been a lot of energy and communications sector activities to mitigate EMP and GMD threats. This activity is important.

EMP and GMD threats present specific risks to the communications sector, which has a cascading effect on other sectors that depend on communications for daily operations. As the Sector-Specific Agency (SSA) for the Communications Sector, CISA has worked with federal, local, state, and private sector stakeholders on EMP and GMD issues. CISA provides regular briefs to the Communications Sector at the federal, state, and local levels on the evolving threat and risk of EMP attacks, and published EMP Protection and Restoration Guidelines for Equipment and Facilities in 2016.

In an effort to broaden the focus on EMP risk, DHS finalized a strategy to protect and prepare the Nation's critical infrastructure against EMP events in October 2018. The Strategy sets strategic goals that promote risk awareness, outlines preparedness actions to reduce the impacts from EMP and GMD events, and lists activities to facilitate response and recovery should an EMP or GMD incident occur. DHS is currently developing an Implementation Plan for the Strategy, which will identify responsibilities across the Department and key activity milestones for achieving Departmental goals to protect the Nation's critical infrastructure from a major electromagnetic incident. CISA recently hired a senior official to function as DHS's EMP Coordinator to serve as a subject matter expert and central point of contact to ensure we advance EMP and GMD activities in a coordinated manner. Together with our partners in the interagency and the private sector, we can now better understand the risks from EMP and GMD threats and implement appropriate mitigation actitivities.

Thank you again for this opportunity and I look forward to discussing further DHS's efforts in securing our critical infrastructure from EMP and GMD.