

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

**Opening Statement of Chairman Ron Johnson**

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*As prepared for delivery:*

We have known about the existential threat posed by electromagnetic pulses (EMP) and geomagnetic disturbances (GMD) for decades. Because most people are either unaware of the danger, or view these as very low probability events, there has not been sufficient public pressure to take effective action to mitigate these threats. Instead, we establish commissions and study panels, conduct research, and develop plans to develop strategies. It is way past time to stop admiring this problem, and actually begin to do something concrete to protect our vulnerable electrical grid, control systems, and the ever increasing array of electronic devices our society has become dependent upon.

We have known for almost 60 years that a high-altitude nuclear weapon can cause a destructive EMP. In 1961 and 1962, the former Soviet Union conducted a series of high-altitude nuclear tests in Kazakhstan, causing damage to communications systems, the power supply, and safety devices. The United States also conducted the STARFISH Prime test in 1962, and some EMP effects were felt approximately 900 miles away in Hawaii.

Similar to an EMP, we have known for almost 160 years that a GMD event can cause widespread damage to our nation’s critical infrastructure. Severe GMD events have occurred in the past, including the September 1859 Carrington Event and the March 1989 Quebec Blackout. The National Academy of Sciences has estimated the economic impact of a severe space weather event - similar in strength to 1859’s Carrington Event - from \$1 to \$2 trillion dollars in the first year alone. We also know that a GMD of that magnitude occurs once every hundred years. We are long overdue, having missed a solar storm of that size by only 9 days in July, 2012.

Dating back to 1997, Congress engaged in a number of oversight activities requiring the federal government to address the EMP and GMD threat. And yet, little progress has been made to mitigate these risks. In 2000, the Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack was established to assess the risk of EMP events. The Commission produced reports with actionable recommendations in 2004, 2008, and 2017, but the federal government has not implemented most of these recommendations.

Our Committee has held three hearings on the EMP and GMD threat during the 114<sup>th</sup> and 115<sup>th</sup> Congress, passed the Critical Infrastructure Protection Act, and included language in the National Defense Authorization Act of 2017 to enable additional planning, research and development, and protection and preparedness. But now is the time to act.

Today, Ranking Member Peters and I have assembled a roundtable of key stakeholders that can “do something” to address the risk posed by EMPs and GMDs. We welcome representatives from the public, private, and nonprofit sectors, including representatives of companies that operate segments of the electric grid, both large and small. Although collaborative efforts are underway to research and test potential technologies, we must begin to identify solutions capable of fortifying the grid against an EMP and GMD event.

I would like to thank everyone for joining this roundtable. I look forward to engaging in a conversation with all of you here today, as well as with Chairman Murkowski and Ranking Member Manchin of the Energy and Natural Resources Committee, on potential solutions to this important problem.