

## **OPENING STATEMENT**

Ranking Member Alan Grayson (D-FL)  
Subcommittee on Energy  
Committee on Science, Space, and Technology

“Examining Vulnerabilities of America’s Power Supply”  
Joint Subcommittee Hearing

September 10, 2015

Thank you, Chairman Loudermilk, and Chairman Weber, for holding this hearing today.

Today’s hearing is focused on our nation’s electric grid, and the many threats facing it.

We as a society are increasingly dependent on the services electricity provides, and the electric grid has quietly become the basis of our modern lives. However, our electrical system is under constant stress from severe weather, malicious acts, and age. The stress on the system is constantly increasing as we dramatically change how we want to use the grid now, verses what it was designed to do, when it was built.

In 2000, the US experienced an average of 2.5 grid disruption events a month. Fourteen years later, in the first half of 2014, we had an average of 21.7 disruptions a month – a nearly nine-fold increase.

Between 2003 and 2012, 80 percent of all outages were weather related and cost the US economy an inflation-adjusted annual average of between \$18 billion to \$33 billion.

USA Today recently reported that physical and cyber attacks on the power grid occur about once every four days. In April of 2013, unknown snipers disabled 17 transformers with a .30 caliber assault rifle at the Pacific Gas & Electric Company’s Metcalf substation outside of San Jose, California. The assailants fired 150 rounds and escaped undetected. They had cut a series of fiber-optic telecommunications cables prior to the attack hindering communication.

From malware inserted in electrical components used to operate the power grid prior to purchase by utilities to traditional cyber attacks, disabling even a portion of the nation’s power supply can have serious consequences for the health and safety of our citizens.

Keep in mind, that the average age of a high voltage transformer in the United States is approximately 38 to 40 years old, with 70 percent of them 25 years or older. And that most high voltage transformers are custom built, and can take five to twenty months to design, build, deliver and install.

One of our challenges is grappling with the reality that many of these threats to the grid are not easily predicted with current capabilities.

High-impact low probability events are by definition, rare. We do not know when a large-scale malicious attack might happen, whether it's an electromagnetic pulse or a cyber attack. We have limited abilities to predict when a geomagnetic disturbance or extreme weather event will hit. And since these events rarely happen, we have little or no historical data to guide us.

While we should certainly support efforts to significantly improve our grid security capabilities, we cannot assume that it is even possible to completely protect the grid from every possible risk.

What we can do is increase our ability to estimate these risks. We can improve our ability to predict the impacts, even when we may not be able to predict the actual event. And we can take actions to improve our electric system's ability to withstand an event, and minimize the time it takes to recover from that event.

This Committee has an important responsibility to authorize research that can dramatically improve the ability of the grid to handle whatever comes at it.

Over the past 100 years we have incrementally created our electric grid, adding and subtracting equipment as the system expanded and became more interconnected. Our electrical system is considered one of the greatest engineering achievements of the 20<sup>th</sup> century by the National Academy of Engineering. We should be proud of this accomplishment.

I look forward to working with my colleagues to identify and fund the research efforts needed to make sure our electrical system remains a great achievement.

I thank each of our witnesses for being here today, and I look forward to hearing what each of you has to say.

Thank you, Mr. Chairman, and I yield back my remaining time.