

Ranking Member Yvette D. Clarke (D-NY) Opening Statement

Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies

“Electromagnetic Pulse (EMP): Threat to Critical Infrastructure”

Thursday, May 8, 2014, 2:00 p.m. in 311 Cannon

I'm very interested in the testimony today, and hoping to hear about how we can assess the risk of solar geomagnetic storms and other EMP threats that create vulnerabilities for our critical infrastructure.

Since we know the electric grid is vulnerable to physical natural threats like heavy weather, EMPs from solar weather, and malicious cyber threats, it is important for the Subcommittee to have a fuller understanding of the threats.

As I see it, the main risk from a terrorist attack succeeding against the electric power industry would be a widespread power outage that lasted for an extended period of time.

The most critical components of the transmission system are the High Voltage and Extra High Voltage transformers, or EHV's. But we must not forget the other major components of the electric transmission system that are vulnerable to terrorist attack...the transmission lines, transmission towers, and control centers.

Utilities rarely experience loss of an individual EHV transformer, but recovery from such a loss takes months, especially if no spare is available.

Conversely, utilities regularly experience damage to transmission towers and substations due to both weather and malicious activities, and are able to recover from this damage fairly rapidly.

Experts generally agree that a failure, for whatever reason, involving several key EHV transformers, could cause blackouts lasting weeks and deteriorated service for an area that could last months, and that the economic consequences of such an attack would likely be large.

We also know that public/private partnerships are the keystone to solving this challenge, especially because the large majority of our electric grid is privately held by investor-owned utilities, or they are part of the Rural Electric Cooperatives network, utilities owned by their member-customers in 47 states, or the Public Power municipal utilities.

The Electric Power Research Institute, or EPRI, an industry-funded energy research consortium, is also addressing High Voltage transformer vulnerabilities, and in cooperation with the North American Electric Reliability Corporation, EPRI has been developing conceptual designs for “recovery transformers” which would enable rapid temporary replacement of damaged High Voltage transformers.

High Voltage and Extra High-Voltage transformers are very large, extremely difficult to transport, and until 2009 primarily manufactured overseas, complicating rapid recovery and restoration efforts.

The Department of Homeland Security has a variety of efforts for EMP and ‘all-hazards risks’, including research on technologies to improve resiliency in the electric grid sector.

The DHS Science & Technology Directorate has co-sponsored with private utilities an exercise in a fast-turnaround transformer replacement project.

This effort is known as the Recovery Transformer Project, or RecX, and it hopes to increase the resiliency of the transmission power grid through the use of more mobile and modular transformers.

This applied research effort has developed a prototype EHV transformer that can quickly be deployed to a site via a series of large trucks and trailers, and then installed, assembled, and energized rapidly.

The prototype RecX was demonstrated last year, and installed in the grid at a host utility, and it is currently undergoing a one-year observational period to verify its performance.

However, within DHS, identifying specific EMP threat-related programs and their budgets is difficult, because EMP specific preparedness and response is not the primary purpose of most programs generally characterized as 'all-hazards threats'. Some see this as a problem.

However, under the current sequester budgetary constraints, funding sources for mitigation and response preparedness for low probability risks, compete directly with today's on-the-ground first responder needs.

Unfortunately, EMP events of all sorts have become the darling of the Internet and late-night talk radio forecasting 'end of civilization as we know it' conditions.

They include all kinds of lurid descriptions of hypothetical catastrophic social events that will, without any doubt in their minds, occur when an EMP event happens, according to these soothsayers.

It can be disturbing. EMP related events have even been popularized in melodramatic TV shows. Books of science-fiction have popularized EMP end-of-days scenarios, and of course, the Internet has innumerable EMP sites that tout the devastation to come.

Since I have been on this Committee, I, and others, have been careful not to use our positions of influence to promote fear in the public.

While the threat of an EMP event is real, I believe we need to use, scientific, risk-based, and frankly, common-sense plans and exercises to give us a clearer picture of how to prevent and respond in the event of an EMP incident.

A more complete understanding of preparedness, response, and recovery activities related to any type of EMP incident, could provide a thoughtful background that can assist the nation's resiliency, if high impact EMP events do occur.