

GAO Highlights

Highlights of [GAO-15-692T](#), a testimony before the Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

The threat posed by an electromagnetic pulse (EMP) or solar weather event could have a debilitating impact on the nation's critical electrical infrastructure, as well as other key assets that depend on electricity. These events could lead to power outages over broad geographic areas for extended durations. Addressing these risks requires collaboration among multiple government and industry stakeholders; with DHS in the lead role for overall infrastructure protection efforts, working in coordination with DOE.

The EMP Commission, established by statute and comprised of subject matter experts, issued recommendations in 2008 addressing the preparation, protection and recovery of critical infrastructures against a possible EMP attack. The majority of these recommendations were made to DHS and DOE.

This testimony is based on preliminary observations from GAO's ongoing review of DHS's efforts to address electromagnetic threats. Specifically, this testimony addresses the extent to which DHS has: (1) taken action to address recommendations from the 2008 EMP Commission Report and (2) coordinated with other principal federal agencies, such as DOE and industry stakeholders to mitigate risks to the electric grid from electromagnetic threats.

GAO reviewed EMP Commission recommendations and DHS program documents, and interviewed relevant stakeholders who provided insights on key issues and coordination activities with the federal government to address these threats.

View [GAO-15-692T](#). For more information, contact Chris Currie at (404) 679-1875 or curriec@gao.gov.

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CRITICAL INFRASTRUCTURE PROTECTION

Preliminary Observations on DHS Efforts to Address Electromagnetic Threats to the Electric Grid

What GAO Found

As of July 2015, the Department of Homeland Security (DHS) reported taking several actions that could help address electromagnetic threats to the electric grid. GAO's preliminary analysis of DHS's actions indicates that they generally fell under four categories: (1) developing reports, (2) identifying mitigation efforts, (3) strategy development and planning, and (4) conducting exercises. For example:

- **Impacts of Severe Space Weather on the Electric Grid.** This 2011 report evaluated how previous solar storms have affected electric grids, and identified potential cost-effective mitigation equipment available to protect these grids, among other topics.
- **RecX.** In 2012, DHS Science & Technology partnered with industry to develop a prototype transformer that could significantly reduce the time to transport, install, and energize a transformer to aid recovery from power outages associated with transformer failures from several months to less than one week.

DHS reported its actions were not taken in response to the 2008 recommendations of the *Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack* (EMP Commission). GAO also recognizes that DHS does not have a statutory obligation to specifically address the recommendations, but implementation of them could help mitigate electromagnetic impacts to the electric grid, such as helping to assure the protection of high-value transmission assets. Moreover, GAO's preliminary work suggests that DHS, in conjunction with the Department of Energy (DOE), has not fully addressed a key critical infrastructure protection responsibility—identification of clear internal agency roles and responsibilities related to addressing electromagnetic threats. For example, although DHS recognized one component as the lead for assessing solar weather risks, the component has not yet identified any specific roles related to collecting or analyzing risk information.

DHS has also coordinated with federal and industry stakeholders to address some, but not all risks to the electrical grid since the EMP Commission issued its recommendations. GAO preliminarily identified eight projects in which DHS coordinated with stakeholders to help protect the grid including developing plans to address long term power outages, participation in exercises, and research and development activities. Although these are positive steps, GAO's preliminary work indicates that DHS has not effectively coordinated with stakeholders to identify critical assets or collect necessary risk information, among other responsibilities. GAO will continue to assess the issues in this statement as it completes its work and will issue a report with the final results later this year.