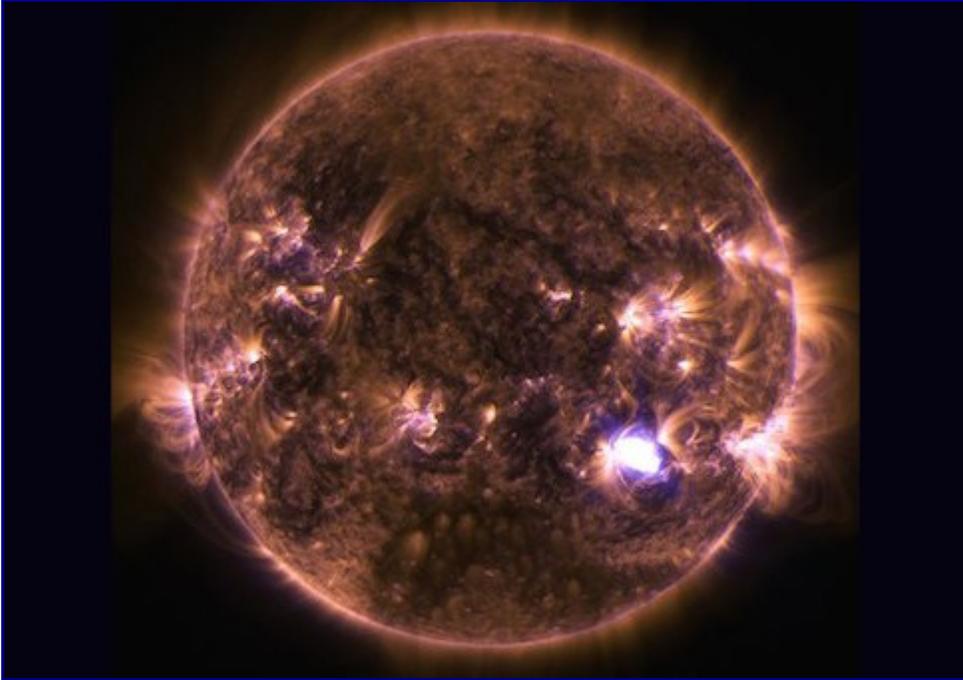


DHS: 100 Million Americans Could Lose Power in Major Sun Storm

Document says FEMA unsure of damage to grid from magnetic storm



Sun emits a mid-level flare Dec. 4, 2014 / AP

BY: [Bill Gertz](#)

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Millions of Americans face catastrophic loss of electrical power during a future magnetic space storm that will disrupt the electric grid and cause cascading infrastructure failures, according to a Department of Homeland Security (DHS) document.

DHS' Federal Emergency Management Agency (FEMA) stated in an internal 2012 fact sheet outlining its response plan for severe "space weather" that the actual impact and damage from a future solar storm is not known.

"An analysis of the space weather impacts indicates that the greatest challenge will be to provide life-saving and life-sustaining resources for large numbers of people that experience long-term power outage from damage to the U.S. electrical grid," the FEMA [document](#), dated March 1, 2012, states.

The FEMA fact sheet noted the findings of a 2010 study by the National Oceanic and Atmospheric Administration, the agency that monitors sun storms, warning that an extreme solar storm could leave "130 million people without power for years," and destroy or damage more than 300 hard-to-replace electrical grid transformers.

Major solar storms are rare. Two major solar disruption events took place in 1859 and 1921, times when electricity was less prevalent than today.

The study said a future solar storm like the great magnetic storm of May 1921 would black out most states east of the Mississippi River along with most states in the Pacific Northwest.

The long-term loss of electrical power likely would produce catastrophic loss of life.

However, the FEMA document disputed that worst-case scenario, noting that in 2011 DHS experts were “not convinced” about the dire consequences outlined in the earlier study.

Still, DHS scientists in 2011 warned that the U.S. electric grid remains vulnerable to damage from an extreme geomagnetic storm. The scientists said the extent of damage to high-voltage transformers from a space storm “are not well known” and the matter needs further study, the report says.

“Based on an analysis of many space weather studies, there does not appear to be specific agreement among space weather and electric industry experts regarding space weather impacts on the U.S. electric grid,” the document says, adding that there is “general agreement among the experts that extreme geomagnetic storms could have significantly damaging impacts on the U.S. electric grid.”

Space weather is defined as conditions on the Sun, in space, in the earth’s magnetic field, and upper atmosphere that impact space and ground technological systems and can “endanger human life on earth,” the report says.

The report outlines the scenario for a major “coronal mass ejection” from the Sun that will first be detected by U.S. satellites. The magnetic band reaches the earth within 24 to 72 hours, affecting up to 100 million people.

The largest such storms, called G-5s, would cause transformers and transmission lines to be “severely damaged.”

The storms last from hours to a day but can disrupt electric power grid operations, GPS satellites, aircraft operations, manned space flight, satellite operations, natural gas distribution pipelines, and undersea communications cables.

GPS satellites could be disrupted causing them to produce false positioning information.

“The extreme geomagnetic space weather event will cause widespread power outages to a large number of people (approximately 100 million people) in a multi-region, multi-state area of the U.S. due to geomagnetic induced currents damaging EHV transformers, especially along coastal regions,” the report says.

Power losses may cause spiraling failures that could lead to loss of systems that control water and wastewater systems, perishable foods and medications, lighting and air conditioning, computer, telephone and communications systems, public transportation, and fuel distribution.

After the magnetic storm passes in some 36 hours, power will be restarted and within 36 hours up to 65 million will regain electric power.

By two weeks, after damaged equipment is replaced or repaired, another 25 million people will have power restored.

However, the report indicates that it would take up to two months to repair or replace damaged electrical power equipment for the remaining 10 million people over six states.

Mark Sauter, an adviser to security companies and coauthor of the textbook *Homeland Security: A Complete Guide*, said severe space weather poses a major homeland security challenge.

“It occurs rarely, can’t be predicted, full protection is impossibly expensive and the potential impact

ranges from inconvenient to cataclysmic,” said Sauter, who obtained the document under the Freedom of Information Act.

“The released documents indicate DHS/FEMA—with buy-in from the electrical industry and U.S. military—has now settled on a ‘plausible’ planning estimate that 25 million Americans could lose power for two weeks and 10 million could be without power for up to two months—and this estimate, the government admits, is 10 percent of one major outside study,” he said.

Sauter said FEMA’s more-than-200-page response plan for dealing with a solar storm was blacked out from the released documents.

“This makes one wonder why FEMA is refusing to release the government’s space weather response plan,” he said. “How would the government deal with 10 million, or many more, Americans without power for two months, or even longer?”

Sauter questioned whether the government is taking the threat of a major solar storm seriously, or is “just going through an obligatory bureaucratic exercise that in reality reflects DHS/FEMA crossing its fingers and hoping that such a plan will never need to be used.”

“Is FEMA simply worried about alarming the public?” Sauter asked. “For example, advice on the DHS Web site urges citizens to disconnect appliances and avoid using the phone during a space weather emergency, but doesn’t go into how people should survive for two months without electricity.”

Peter Pry, a former CIA official who now heads a group that has warned about the impact on the electric grid of a nuclear detonation-caused blackout from electromagnetic pulse, said a congressional EMP Commission warned several years ago of the threat posed by a geomagnetic super storm.

Such an event “could have catastrophic consequences for civilization,” Pry said.

A similar solar blast like the 1859 Carrington Event could collapse electric grids and life-sustaining critical infrastructures worldwide, putting the lives of billions at risk, he said.

U.S. utilities are unprepared for major solar storms such as the Carrington Event or the 1921 magnetic storm.

“We are running out of time to prepare,” Pry said, noting that NASA reported in July that Earth narrowly missed a second Carrington Event.

Pry said current legislation known as the Critical Infrastructure Protection Act (CIPA) passed the House last week unanimously and would help protect against natural or manmade EMP.

FEMA spokesman Rafael Lemaitre had no comment on the fact sheet and its outline of the potential damage from a major solar storm

“FEMA constantly monitors and plans for all hazards, and that includes the potential impact from a coronal mass ejection,” he said.