

ISSUE BRIEF

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The White House Was Right to Issue the Executive Order on the EMP Threat

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On March 26, President Donald Trump issued an executive order (EO) on the threat to the country from an electromagnetic pulse. The EO, titled “Coordinating National Resilience to Electromagnetic Pulse,” correctly explains that

[a]n electromagnetic pulse (EMP) has the potential to disrupt, degrade, and damage technology and critical infrastructure systems. Human-made or naturally occurring EMPs can affect large geographic areas, disrupting elements critical to the Nation’s security and economic prosperity, and could adversely affect global commerce and stability. The Federal Government must foster sustainable, efficient, and cost-effective approaches to improving the Nation’s resilience to the effects of EMPs.¹

While some downplay the EMP threat and question the need for this EO,² the White House was right to issue it, and should be commended for doing so. The Obama Administration had issued an EO on EMPs,³ but it focused only on developing a response to space weather, not to human-made EMPs.

Besides exerting important leadership on the EMP issue, this EO will help determine the United States’ level of vulnerability to, and bolster resilience against,

a human-made EMP or a naturally occurring geomagnetic disturbance (GMD), protecting the American public from avoidable catastrophe.⁴

The EMP Threat

According to the October 2018 Department of Homeland Security’s *Strategy for Protecting and Preparing the Homeland Against Threats of Electromagnetic Pulse and Geomagnetic Disturbances*, “[An EMP or GMD] could damage significant portions of the Nation’s critical infrastructure, including the electrical grid, communications equipment, water and wastewater systems, and transportation modes.”⁵ This means no heating or cooling, no light, no water—and, in a matter of days, no access to food or medications, for millions of people.

The report continues: “The impacts [of an EMP] are likely to cascade, initially compromising one or more critical infrastructure sectors, spilling over into additional sectors, and expanding beyond the initial geographic regions.”⁶ Such an event would have a significant impact on the private sector, which has ownership over a vast majority of America’s critical infrastructure.

Beyond critical infrastructure, the potentially devastating effects of an EMP could also directly or indirectly permeate the national security establishment, including the military and intelligence community, undermining their ability to respond to the National Command Authority and provide for the country’s security.⁷

An EMP attack would most likely come from an enemy detonating a nuclear weapon high above the United States—delivered by a long-range missile.

Russia and China, with their robust nuclear and long-range missile arsenals, clearly have the

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capability to attack the United States through an EMP, and North Korea claims to have the ability.

Though Iran is not believed to have an EMP capability yet, its previous work on nuclear weapons and ongoing development of long-range ballistic missiles is of deep concern to U.S. policymakers.

An EMP capability could be an important asymmetric weapon in the hands of adversaries such as North Korea and Iran, but also in the hands of terrorist groups around the world.

It is not only nuclear weapons that can create an EMP. An EMP can also come from radio-frequency (RF) weapons, though their range of effectiveness is smaller than that of a high-altitude EMP (HEMP) exploded above the Earth's surface.⁸

While other issues, such as political relations, must be considered alongside nuclear, missile, or other military capabilities in assessing any threat scenario, there is little question that a HEMP over the United States would likely have a devastating effect on life and property.

While hostility plays a role in the military use of an EMP, it does not apply to naturally occurring GMDs, which may severely disturb the Earth's magnetic field, causing damage to aerial infrastructure (such as satellites), maritime infrastructure (such as undersea cables), and terrestrial infrastructure (such as the electric grid).⁹

Either an EMP or GMD, though a low probability, would be a high-consequence event that would have potentially severe repercussions on human health, security, and life. With little expected warning time for a military or solar EMP, there is clearly a need to address this challenge.

The Executive Order

The threat posed by EMPs is the reason why it is appropriate for the President to issue this executive order.¹⁰ The EO calls for a whole-of-government approach to prevent, mitigate, and recover from the effects of a military or solar EMP based on a better understanding of the risk.

The EO specifically calls for identifying critical functions and infrastructure at risk, improving the understanding of EMP effects, evaluating approaches to mitigating EMP effects, strengthening existing infrastructure to withstand EMPs, and improving the response to EMPs.¹¹

The EO also calls for the sharing of EMP information among the necessary public and private stakeholders that will lead to the "development and implementation of best practices, regulations and appropriate guidance."¹² Information sharing will be critical to preparing for, and responding to, an EMP.

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1. The White House, "Executive Order on Coordinating National Resilience to Electromagnetic Pulses," March 26, 2019, <https://www.whitehouse.gov/presidential-actions/executive-order-coordinating-national-resilience-electromagnetic-pulses/> (accessed April 16, 2019).
 2. Christopher W. Blair et al., "Trump Issued an Executive Order to Prepare for an EMP Attack. What Is It, and Should You Worry?" *The Washington Post*, March 29, 2019, https://www.washingtonpost.com/politics/2019/03/29/trump-issued-an-executive-order-prepare-an-emp-attack-what-is-it-should-you-worry/?utm_term=.5eba872dcb5 (accessed April 15, 2019).
 3. The White House, "Executive Order—Coordinating Efforts to Prepare the Nation for Space Weather Events," October 13, 2016, <https://obamawhitehouse.archives.gov/the-press-office/2016/10/13/executive-order-coordinating-efforts-prepare-nation-space-weather-events> (accessed May 3, 2019).
 4. The White House, *National Security Strategy of the United States of America*, December 2017, <https://www.hsdl.org/?abstract&did=806478> (accessed May 3, 2019).
 5. The Department of Homeland Security, *Strategy for Protecting and Preparing the Homeland Against Threats of Electromagnetic Pulse and Geomagnetic Disturbances*, October 9, 2018, https://www.dhs.gov/sites/default/files/publications/18_1009_EMP_GMD_Strategy-Non-Embargoed.pdf (accessed April 16, 2019).
 6. Ibid.
 7. U.S. government agencies, including Department of Defense military bases, depend on critical infrastructure, such as the electrical grid, for power. Intelligence community operations, such as satellites, could also be affected.
 8. A HEMP results from a detonation at a minimum of 25 miles above the Earth's surface. An EMP burst 300 miles above the center of the country could affect the entirety of continental United States.
 9. U.S. Department of Homeland Security, *Strategy for Protecting and Preparing the Homeland Against Threats of Electromagnetic Pulse and Geomagnetic Disturbances*.
 10. The White House, "Executive Order on Coordinating National Resilience to Electromagnetic Pulses."
 11. Ibid.
 12. Ibid.
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Supported by the Secretaries of State, Defense, Energy, Homeland Security, the Interior, and Commerce, and by the Director of National Intelligence, and others, the National Security Advisor will be responsible for tracking the progress of this EO and reporting its status to the President annually.¹³

In order to ensure effective implementation of the EO, Congress should:

- **Conduct rigorous oversight.** As the EO process begins, congressional committees should hold hearings as soon as practicable on the risks of, vulnerability to, and state of preparedness for an EMP. Additional hearings should be held once the National Security Advisor has submitted his first annual report to the President to assess its findings. Congress should also call for the release of a public, unclassified version of the report to the President for the benefit and knowledge of the American public.
- **Ensure public–private engagement.** Considering the operation and ownership of the country’s critical infrastructure, this EO process must not evolve into a largely executive branch or government exercise. Instead, this EO process must look to more fully develop a public–private partnership on this issue, opening critical channels of communications and information flows. Congress can ensure this is happening through hearings, roundtables, and staff briefings with principle public and private stakeholders.

The executive branch should:

- **Designate the Department of Homeland Security as the executive agency for EMP policy and planning.** Responsibility for EMP policy and planning currently spans numerous U.S. government

departments and agencies. For enduring leadership and continuity purposes, and given the department’s ties to federal, state, local, and international policymakers as well as critical-infrastructure leaders in the private sector, the White House should designate the Department of Homeland Security as the lead agency within the executive branch that is responsible for EMP policy and planning once the initial set of reports and recommendations have been approved by the President.

- **Continue to identify roles, responsibilities, authorities, and resources.** There have long been concerns about the public and private roles, responsibilities, authorities, and resources for preventing, planning for, and responding to an EMP.¹⁴ The executive branch, with strong congressional and private-sector input and involvement, must address this concern comprehensively if the U.S. is to improve the public and private sectors’ readiness to protect the American people from an EMP.

Conclusion

Through this EO, the Trump Administration has taken on a critical leadership role in energizing the public and private sector to better understand, consider, and respond to both human-made and naturally occurring EMPs. This is an important first step, and the White House should be commended for taking it.

Though an EMP is a low-probability event, unlikely events can prove to be catastrophic at a number of different levels. It is unquestionably best to be prepared. This EO begins the work of moving in that direction.

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13. Ibid.

14. Michaela Dodge, Katie Tubb, Thomas W. Spoehr, Jack Spencer, and David Inserra, “The Danger of EMP Requires Innovative and Strategic Action,” Heritage Foundation *Background* No. 3299, April 4, 2018, <https://www.heritage.org/homeland-security/report/the-danger-emp-requires-innovative-and-strategic-action>.