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North Korean Nuclear Bomb Test Highlights Electromagnetic Pulse Threat to United States

Nashua, NH—January 6, 2016—North Korean state television today announced a successful nuclear weapon test, the fourth underground test since 2006. North Korea's nuclear test, combined with its rapidly advancing ballistic missile program, is a reminder that foreign adversaries can conduct high altitude Electromagnetic Pulse (EMP) attacks against critical infrastructure in the United States, causing wide-area grid blackouts lasting for months or years.

When a nuclear weapon is detonated in the upper atmosphere, a series of electromagnetic pulses radiate downward, impacting electrical equipment within line-of-sight of the blast. The "E1" or early-time pulse can burn out devices that use semiconductor chips, such as computers, telecommunication switches, and industrial control systems used in power transmission networks, electric generation plants, water and sanitation systems, traffic signals and a myriad of other critical infrastructure necessary for everyday life. The "E3" or long pulse can permanently disable hard-to-replace transformers used for long-distance electricity transmission. A single nuclear weapon detonated over Kansas could disable critical infrastructure in most of the continental United States, including all three major electric grid interconnections.

In 2000, the U.S. Congress authorized formation of the "Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack," commonly referred to as the EMP Commission. In 2008, the EMP Commission released its Critical National Infrastructures Report, which concluded, "the electromagnetic pulse generated by a high altitude nuclear explosion is one of a small number of threats that can hold our society at risk of catastrophic consequences" and "broad band, high amplitude EMP, when coupled into sensitive electronics, has the capability to produce widespread and long lasting disruption and damage to the critical infrastructures that underpin the fabric of U.S. society."

The nuclear triad of the military, including land-based ballistic missiles, submarines, and strategic bombers is protected against EMP, consistent with the requirements of military standard MIL-STD-188-125. Dr. George Baker, principal investigator for Resilient Societies, previous staff member of the EMP Commission, and formerly manager at the Defense Threat Reduction Agency for development of this standard for EMP protection commented on the North Korean nuclear test. "Even a 10 kiloton nuclear weapon can produce catastrophic impact on critical infrastructure such as the electric grid, but a hydrogen device can produce EMP effects on critical infrastructure over a much larger land area."

The Foundation for Resilient Societies is a Nashua, New Hampshire-based non-profit group that advocates for EMP protection of critical infrastructure. For more information or interviews with critical infrastructure experts, contact Melissa Hancock at media@resilientsocieties.org or telephone 855-688-2430, extension 2. ###.