

**Testimony by Congressman Trent Franks to the Cybersecurity, Infrastructure Protection, and Security Technologies Subcommittee 9-12-12**

**Good morning Chairman Lungren, Ranking Member Clarke and the rest of my fellow Members on the committee. I believe the subject of this hearing is one of profound implication and importance to Western civilization, and consequently I hope the members will feel inclined to read my written testimony -- and I thank you for allowing me to testify here today.**

**In our technological advancement, we have now captured the electron and transported its utility into nearly every business, home and industrial endeavor throughout the civilized world. In so doing, we have advanced our standard of living and productivity beyond dreams. But we have also grown profoundly dependent upon electricity and its many accoutrements. In keeping with one of humanity's most reliable hallmarks, we now find among our greatest strengths an unsettling vulnerability... EMP...Electromagnetic Pulse.**

**Catalyzed by a major solar storm, a high altitude nuclear blast, or a non-nuclear, device induced Intentional Electromagnetic Interference, this invisible force of ionized particles has the capability to overwhelm and destroy our present electrical power grids and electrical equipment, including electronic communication networks, radio equipment, integrated circuits and computers.**

**The reality of the potentially devastating effects of sufficiently intense electromagnetic pulse on the electronic systems/sources of many of our critical defense and national security components is well-established, and beyond dispute. We as a nation have spent billions of dollars over the years hardening our nuclear triad, our missile-defense capabilities, and numerous other critical elements of our national security apparatus against the effects of electromagnetic pulse, particularly the type of electromagnetic pulse that might be generated against us by an enemy. However, our civilian grid, which the Defense Department relies upon for nearly 99% of its electricity needs, is completely vulnerable to the same kind of**

**danger. This constitutes an invitation on the part of certain enemies of the United States to use the asymmetric capability of an EMP weapon against us, and there is now evidence that such strategy is being considered by certain of those enemies.**

**The effects of geomagnetic storms and electromagnetic pulses on electric infrastructure are well-documented, with nearly every space weather and EMP expert recognizing the dramatic disruptions and cataclysmic collapses these pulses can bring to electric grids. We all recently witnessed the chaos that ensues a prolonged power outage when the derecho storm impacted DC. Sick and elderly suffered without air conditioning, grocery stores labored to keep food fresh, and gas lines grew. Thankfully, the derecho was only regional in its impact and limited in its effects.**

**In 2004 and 2008 the EMP Commission testified before The Armed Services Committee, of which I am a member, that the US society and economy are so critically dependent upon the availability of electricity that a significant collapse of the grid, precipitated by a major natural or man-made EMP event, could result in catastrophic civilian casualties. This conclusion is echoed by separate reports recently compiled by the DOD, DHS, DOE, NAS, along with various other government agencies and independent researchers. All came to very similar conclusions. The sobering reality is that this vulnerability, if left unaddressed, could have grave, societal altering consequences.**

**I am heartened by the efforts of DHS to address the vulnerabilities EMP poses to our grid, including the Recovery Transformer and Resilient Electric Grid Projects. However, while these projects are well intentioned and a positive step forward, they do not go far enough to adequately protect our grid and our nation against a catastrophic, continental-wide EMP event.**

**Like many of you, I believe Federal regulation should be very limited. Our first national security priority in this instance is to protect our major transformers from cascading destruction. To that end, I have introduced the SHIELD Act which, among other things,**

requires automated hardware-based solutions rather than procedural safety measures alone. And THE SHIELD ACT does not contain cyber security provisions, leaving the conflicting approaches to that extremely important issue, among members of the Senate in particular, to be debated in a separate bill.

Automated hardware is particularly important when one considers the shortcomings of procedural safety measures alone in response to an EMP event. According to solar weather experts, there is only 20-30 minutes warning from the time we predict a solar storm may affect us to the time it actually does. This is simply not enough time to implement procedures that will adequately protect the grid. Furthermore, these predictions are only accurate one out of three times. This places a crushing dilemma on industry, who must decide whether or not to heed the warning with the knowledge that a wrong decision either way could result in the loss of thousands or even millions of lives and massive legal ramifications beyond expression.

Mr. Chairman, the phenomenon of natural and man-made electromagnetic pulse is not a new one.

In 1859, English Astronomer Richard Carrington discovered the cause of natural EMP when he identified and chronicled a major geomagnetic solar storm which brilliantly intensified the Northern lights and caused the telegraph system, the only major electrical system that existed on earth at that time, to go down across the planet. The National Academy of Sciences predicts this effect, to a lesser or greater degree, will recur globally approximately once every 100 years.

In 1962, the United States discovered that a high altitude nuclear blast could generate a more localized electromagnetic pulse of the same intensity as the Carrington effect. In an upper atmospheric nuclear test called Starfish Prime, an EMP occurred and electric lines were fused

and radios and street lights stopped working in Hawaii nearly 900 miles away. The residual effects also disabled nearly all major satellites systems.

Because of new understandings of how EMP interacts with the Earth's electromagnetic field, and that it is intensified over large land mass, we now believe that if a warhead with a nuclear yield of just 100 kilotons detonated at an altitude of 400 kilometers over America's heartland, the resulting damage to our electric grid and infrastructure would be catastrophic across most of the continental United States. Such a result would be devastating to our electricity, transportation, water and food supply, medical care, financial networks, telecommunication and broadcasting systems and our infrastructure in general. Under such a scenario, both military and productive capability would be devastated. The immediate and eventual impact, directly and indirectly, on the human population, especially in major cities, is unthinkable.

It should be remembered that EMP was first considered as a military weapon during the "Cold War" as a means of paralyzing U.S. retaliatory forces.

America's EMP commission began their 70 page executive summary describing a one or two missile EMP attack as one of the few threats which look as if it could defeat the US military.

Dr. William Graham, the chairman of the EMP Commission, testified before the U.S. House Armed Services Committee, and stated:

QUOTE "EMP is one of a small number of threats that can hold our society at risk of catastrophic consequences.

"...A determined adversary can achieve an EMP attack capability without having a high level of sophistication. For example, an adversary would not have to have long-range ballistic missiles to conduct an EMP attack against the United States. Such an attack could be launched from a freighter off the U.S. coast using a short or medium range missile to loft a

nuclear warhead to high altitude. Terrorists sponsored by a rogue state could potentially execute such an attack without revealing their identity." UNQUOTE

Dr. Graham has said that a major catastrophic EMP attack on the United States could cause an estimated 70-90 percent of the our nation's population to become unsustainable.

It is impossible for me to even wrap my mind around that figure.

But for terrorists, this is their ultimate goal, and I believe EMP is their ultimate asymmetric weapon. In 1988, Osama bin Laden called it a religious duty for al-Qaida to acquire nuclear weapons. U.S. Admiral Mike Mullen, the Chairman of the Joint Chiefs of Staff, has stated, QUOTE "My worst nightmare is terrorists with nuclear weapons. Not only do I know they are trying to get them, but I know they will use them." UNQUOTE

This is indeed the greatest danger of all. If a rogue state like Iran steps over the nuclear threshold, rogue regimes and terrorists the world over will have access to these monstrous weapons.

We do well to remember that Iran, the world's leading sponsor of international terrorism, has practiced launching a mobile ballistic missile from a vessel in the Caspian Sea. Iran has also tested high-altitude explosions of the Shahab-III, a test mode consistent with an EMP attack, and described the tests as successful. We have also discovered an Iranian military journal that included an article recommending such a strategy. The article noted that if major Western nations do not learn to defend themselves against EMP attacks, they will be destroyed.

Mahmoud Ahmadinejad again made it clear where he stands on Israel when he declared, "[Israel] is about to die and will soon be erased from the geographical scene."

Jewish author, Primo Levi, was once asked what he had learned from the Holocaust. He replied, "When a man with a gun says he's going to kill you - believe him."

At this moment, Iranian President Mahmoud Ahmadinejad, a man who, in the same breath, both denies the Holocaust ever occurred, and then threatens to make it happen again, is arrogantly seeking a gun with which he vows to wipe the state of Israel off the map.

He has also said: "The time for the fall of the satanic power of the United States has come and the countdown to the annihilation of the emperor of power and wealth has started." He has said point-blank, "The wave of the Islamist revolution will soon reach the entire world."

What a happy cheerful, fellow...

Unfortunately, he talks like a man who knows something the rest of us don't.

It is not enough, to casually dismiss his fanatical rhetoric. When analyzing the nature of any threat, we must always seriously assess two things: a potential enemy's intent and his corresponding capacity to carry out any such intent.

Mahmoud Ahmadinejad and his regime have stated very clearly their intent to see Israel wiped off the face of the earth and America and the West brought to their knees. Nuclear warheads could give them the capacity to effectively proceed in that endeavor; and to ignore the incontrovertible fact that Iran is rapidly progressing toward a nuclear weapons capability, is to resign ourselves and our children to live and walk in the shadow of nuclear terrorism.

Mr. Chairman and Members, these things should not surprise us. We are now 65 years into the nuclear age, and the ominous intersection of jihadist terrorism and nuclear proliferation has been inexorably and relentlessly rolling toward America and the free world for decades. But, when we add the dimension of asymmetric electromagnetic pulse attacks to that equation, we face a menace that may represent the gravest short term threat to the peace and security of the human family in the world today.

Certainly there are those who believe that the likelihood of terrorists or rogue states obtaining nuclear weapons and using them in an EMP attack is remote. It may be a reasonable conclusion for the moment. But the recent events of the Arab Spring, which our intelligence apparatus did not foresee, show us that regimes can change very quickly. Is a

regime change in Pakistan possible? Will there be blowback from our involvement in Libya? What about the current crisis in Syria? Will North Korea ever supply or sell it nuclear technology or warheads to terrorists? Will Iran develop or obtain nuclear weapons? Iran's increasingly obvious efforts to gain nuclear weapons should serve as a grave and urgent warning to all of us.

If terrorists or rogue states do acquire nuclear weapons, hardening our electric grid would become a desperate priority for our nation. However, that process will take several years, while a regime change takes only weeks and a missile launch only minutes. The fact that we are now 100% vulnerable means we should start securing our electric infrastructure now. Indeed, by reducing our vulnerability we may reduce the likelihood that terrorists or rogue states would attempt such an attack.

We should always remember that seven decades ago, another murderous ideology arose in the world. The dark shadow of the Nazi swastika fell first upon the Jewish people of Germany. And because the world did not heed the warnings of men like Winston Churchill and respond to that evil in time, it began to spread across Europe until it lit the fire's of World War II's hell on earth which saw atomic bombs fall upon cities and over 50 million people dead worldwide.

History has repeatedly shown humanity to be susceptible to malignant dangers that approach inaudibly and nestle among us with innocuous countenance until a day of sudden calamity finds us empty handed, broken hearted, and without excuse.

Thankfully, Mr. Chairman and Members, there is a moment in the life of nearly every problem when it is big enough to be seen by reasonable people and still small enough to be solved. You and I live in that moment when there still may be time for the free world to address and mitigate the vulnerability that naturally occurring or weaponized EMP represents to the mechanisms of our civilization.

The challenge to ultimately and fully protect our peoples and nations from all of the various perils of natural or manmade electromagnetic pulse will be long and lingering. But the time to protect our nation from the most devastating scenario is now; the threat is real, and the implications are sobering.

America's Brink Lindsey said it this way, QUOTE "Here is the grim truth: We are only one act of madness away from a social cataclysm unlike anything our country has ever known. After a handful of such acts, who knows what kind of civilizational breakdown might be in store?"

Mr. Chairman and Members of the Committee, the first purpose of any government or its leaders is to protect the lives and security of its innocent citizens. The failure of this responsibility renders all others meaningless.

Your actions today to protect America may gain you no fame or fanfare in the annals of history. However, it may happen in your lifetime that a natural or man-made EMP event so big has an effect so small that no one but a few will recognize the disaster that was averted. For the sake of our children and future generations, I pray it happens exactly that way.

Thank you and God bless all of you.

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