

Outline

**Vulnerability of the U.S and Texas Electrical Grid
Presented to Cypress Texas Tea Party Organization**

July 25, 2015

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Houston, Texas

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Introduction

Electrical power provides for the needs of our modern society. Utilities including heat and air conditioning, availability of food and water, communications and transportation all are dependent on electrical power. Electricity is distributed in the U.S. via networks described as the U.S. electrical grid.

The threats to our electrical grid which I'm describing here today are real, not science fiction. These have been known by ourselves and by our enemies for decades, but were less of a concern during the "Mutually Assured Destruction" (M.A.D.) era.

The information I present here is sourced and referenced. Much of what I describe here I attribute to Frank Gaffney, Founder and President of the Center for Security Policy in Washington DC. Mr. Gaffney has been calling attention to this issue for several years. You may have seen him interviewed about this on Fox News in recent months.

State Senator Bob Hall (District 2) authored and introduced legislation this past session of the Texas state legislature to help protect the electrical grid in Texas. Unfortunately his bill did not pass the House. I'm speaking to you about this topic today because I believe this issue is sufficiently urgent for Governor Abbott to take prompt action regarding the state's grid vulnerabilities. The basis for this view is presented here.

What is the Risk

I refer to "M.A.D." for a reason. A successful attack on our electrical grid could very well be a "nation-ending" event (Frank Gaffney).

The Heritage Foundation's James Carafano explained in 2011 the potential impact on the United States--and the world⁴:

The result of a massive EMP event could be devastating. Communications would collapse, transportation would halt, and electrical power would simply be nonexistent. Not even a global humanitarian effort would be enough to keep hundreds of millions of Americans from death by starvation, exposure, or lack of medicine... Yet despite the threat—and the fact that six national commissions and major independent U.S. government studies have independently concurred with the significance of the danger—Congress has merely deliberated it but has not taken substantive action. Meanwhile, the Administration and federal agencies remain mostly ambivalent.

Not much has changed since then. In May of 2014, Peter Vincent Pry, a member of the Congressional EMP Commission and executive director of the Task Force on National and Homeland Security 2014 warned that an electromagnetic pulse attack on our power grid and electronic infrastructure "could leave most Americans dead and the U.S. in another century". He testified in front of the House

Homeland Security Committee's Subcommittee on Cybersecurity, Infrastructure Protection and Security Technologies that an electromagnetic pulse (EMP) event could wipe out 90% of America's population².

Such an outcome could be brought about by detonation of a small nuclear device in low-orbit over the U.S. It could also be brought about by a now-overdue natural solar event. The 1859 "Carrington Event" (observed by British astronomer Richard C. Carrington) was the recorded example where a solar coronal mass ejection hit Earth's magnetosphere and induced one of the largest geomagnetic storms on record. This of course occurred long before the modern reliance on electrical systems. Nonetheless it literally melted telegraph lines in Europe and the U.S.^{2,3} There have been near-misses in each of the last three years, where massive solar flares crossed Earth's orbit not too long before or after Earth had crossed that location. The solar storm of 2013 was of a similar magnitude, but passed Earth's orbit without striking Earth⁴. A "hit" statistically can be expected once every ~ 150 years. So we are due, and depending on the severity of the storm the results can be catastrophic.

To make matters worse, as noted in the 2008 EMP Commission Report it could take months or even years to restore these systems depending on the nature and amount of damage. Quoting the Commission Report⁵:

The transformers that handle electrical power within the transmission system and its interfaces with the generation and distribution systems are large, expensive, and to a considerable extent, custom built... All production for these large transformers used in the United States is currently offshore. Delivery time for these items under benign circumstances is typically one to two years... Delivery of a new large transformer ordered today is nearly 3 years, including both manufacturing and transportation. An event damaging several of these transformers at once means it may extend the delivery times to well beyond current time frames as production is taxed. *The resulting impact on timing for restoration can be devastating. Lack of high voltage equipment manufacturing capacity represents a glaring weakness in our survival and recovery to the extent these transformers are vulnerable.* Distribution capability is roughly in the same condition although current delivery times are much less...

I'm focusing on vulnerability of the grid to EMP, however the grid is also highly vulnerable to cyber attack. Our enemies are also well-aware of this; it would be the topic of an entirely separate presentation.

What is New

I've said this risk has been known for decades. What has changed is these same capabilities are now in reach of rogue states (North Korea, Iran) and non-state bad actors (Al Qaeda, Islamic State). These organizations and particularly Iran do not operate based on Western values. Rather they are religious fanatics. Iran's religious leaders believe apocalyptic war is the means to bring about the return of the "12th Imam", to usher in the imposition of Islam worldwide. Former Iranian president Ahmadinejad believed this was his personal calling.

Iran has more recently been describing these vulnerability of the electric grid as the "Achilles Heel" of the U.S., and have all but openly declared their intention to attempt such attacks to bring down the U.S. As reported in the Washington Examiner on July 13, 2015, Iranian military doctrine describes such a scenario — including a recently translated Iranian military textbook that endorses nuclear EMP attack against the United States. The textbook discusses an EMP attack on America in 20 different places⁶.

Former CIA Director R. James Woolsey and others have raised concerns that Iran or North Korea could undertake an EMP attack over America's southern border, which is largely absent of missile defenses⁷. North Korea now has this capability⁸, which means the U.S. is vulnerable to the whims of the maniacal Kim Jong-Un.

As for non-state capabilities, a small-scale attempt on a portion of the electric grid was attempted in early 2013 near San Jose, CA⁹. A presumably small number of persons with rifles who knew what they were doing fired on critical transformers at a power station. Their effort failed, but had it succeeded it would have taken down a significant portion of the electrical grid in that area for an extended amount of time. This may have been some form of a 'dry run' effort. The perpetrator(s) were not caught.

Previous Existential Threats

The country has faced existential threats before. The federal government response was immediate and urgent. During WWII, Albert Einstein sent a letter to FDR warning of Nazi capability to produce atomic weapons. The result was the Manhattan Project. The 1950s Soviet Union launch of Sputnik triggered dire concerns among our elected leaders and at the Pentagon about potential attack from space. The result was a rapid program to catch-up with and surpass Soviet capabilities in space, including formation of NASA.

Unfortunately no such urgency regarding securing our electrical grid is evident in Washington DC.

What is the Federal Government Doing Now

The Federal Government is well-aware of this problem and has been aware for years¹⁰, but unlike previous leadership our current leaders in Washington DC are unwilling and unable to address it. Part of the problem is the fight over who is in charge. The Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) claim jurisdiction and either downplay the problem or fight over who will pay to solve it. Legislative efforts have been tried and failed. Cong. Trent Franks (AZ) has led the way on this effort but has been blocked by FERC/NERC, lobbyists and legislative shenanigans.

Finally, late 2014 Cong. Franks managed to pass a bill out of the full House (H.R 3410, Critical Infrastructure Protection Act) by an overwhelming majority. But that went nowhere in the Harry Reid Senate. Cong. Franks re-introduced this legislation in January and it has picked up several co-sponsors including Bruce Babin and Pete Sessions. But still, nothing has happened.

I find all this astonishing – I cannot think of a more high-stakes and what should be a bipartisan issue than this. There is no reason whatsoever for resolution of such a crucial problem to be up to the electrical utility companies, trade associations or government agencies. You would think that given the stakes I described, with GOP in control of Congress that by now this same legislation would again have been passed (again overwhelmingly) by the House & sent over to the now-Republican senate. But that hasn't happened. I called Sen. Franks' office a couple months ago and asked about this ("just pass the same bill & send it over to the Senate – how hard is this?"). I was told "it's not that simple". Therein lays the problem in Washington DC.

What is Happening in Texas

There is at least some glimmer of good news for Texans. This problem can be addressed, fairly quickly and at comparatively low cost (\$2 billion for the entire nation; Texas 11% of that (Sen. Hall, Gaffney)¹¹. We know what to do & how to do it. No more 'blue ribbon panels, etc.' are needed.

The U.S. electrical grid is actually organized into three grids: the East Grid, the West Grid, and the Texas grid. Yes, Texas has its own electrical grid. We also have a Texas state senator (Sen. Bob Hall) who understands this issue well. He introduced legislation this past session (SB 1398) to begin to address it. His legislation passed the Senate, but unfortunately this was late in session and the bill died in "Calendars Committee". Sen. Hall describes in his July 10 "Capitol Hall Report" as follows¹²:

"Unfortunately, the very powerful lobby for electricity companies was able, through deception and misrepresentations, to ensure that SB 1398 was blocked in the House."

Sound familiar?

I have spoken to Sen. Hall's staff and am told he continues to pursue this & is attempting to drum-up support among colleagues.

Unfinished Business

I personally think securing the Texas electrical grid is the most important unfinished business from the past Session. This is an existential threat to all Texans, and all Americans. Some other states are not waiting for Washington to act⁸. Maine and Virginia have enacted legislation and undertaken serious studies to consider how to deal with an EMP attack. Florida's governor and emergency manager are considering executive action to harden their portion of the grid. Colorado legislators are holding hearings on legislation to protect their citizens. It cannot wait until 2017 for the next Texas legislative session, nor on our dysfunctional federal government. Gov. Abbott & the Texas Legislature must be brought up-to-speed about this promptly, and Gov. Abbott should be encouraged to exercise his executive order power to instruct the Public Utility Commission of Texas and Texas Homeland Security to take action regarding the state's grid vulnerabilities. I'm hopeful a successful effort would prod more states to take action, and better still prod Congress to take care of business in Washington DC. Consider the alternative.

The handouts include Sen. Hall's newsletter, a few pages from The Center for Security Policy, "The Secure Freedom Strategy" booklet¹³, and a list of other references for what I've presented. I also included an article on this topic¹⁴ which appeared just this past Monday (July 20, 2015) at the American Thinker site.

Thank you for your attention. I'll take any questions you may have.

V.1

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