

HIGH FRONTIER

Amb. Henry F. Cooper, Chairman

Lt. Gen. Daniel Graham, Founder

Chairman Neil Chatterjee
Commissioner Cheryl A. LaFleur
Commissioner Robert F. Powelson
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

October 23, 2017

Comments submitted in FERC Docket RM18-1-000, Proposed Grid Reliability and Resilience Pricing

Dear Chairman Chatterjee, Commissioner LaFleur, and Commissioner Powelson:

In support of Secretary Perry's important initiative, I write as Chairman of High Frontier, a 501c(3) non-profit organization that has focused since its 1981 founding on telling Americans how they can be most effectively defended against ballistic missile attack. About four years ago, I became particularly concerned by the lack of attention being paid to the vulnerability of our electric power grid, especially from ballistic missile delivered electromagnetic pulse (EMP)—North Korea's recently announced "strategic goal," but also to threats posed by physical and cyber attacks as well as natural events such as a major solar storm. Now I am devoting most of my time to seeking to inform the public and local and state authorities on the nature of this threat and what must be done to counter it¹.

On May 4, 2017, I testified² before the Senate Energy and Natural Resources Committee Hearing³ to examine the threat posed by electromagnetic pulse (EMP) and policy options to protect energy infrastructure and to improve capabilities for adequate system restoration. I elaborated my belief that we confront the most dangerous period of my lifetime for several reasons, perhaps most importantly due to the vulnerability of our national electric power grid, upon which our nation's viability depends.

I testified that we long have had warning of the nature of the EMP threat and have understood for a half century how to protect against it; yet our leaders have collectively ignored and/or taken ineffective measures to deal with it. Moreover, I concurred with the observations of President Reagan's Director of the White House Office of Science and Technology Policy and for 17 years Chairman of the EMP Commission, Dr. William R. Graham, in his April 20, 2017 letter to Secretary Perry⁴:

1. Nuclear EMP is the ultimate cyber weapon in the military doctrines and plans of Russia, China, North Korea and Iran for Combined Arms Cyber Warfare that they see as a decisive new Revolution in Military Affairs.

¹ I am a PhD engineer, with pertinent technical experience—from working on developing military and civilian systems at Bell Telephone Laboratories in the early 1960s, to over 20 years conducting research and developing simulators to test our strategic systems against nuclear weapons effects, to overseeing the Research, Development and Acquisition of U.S. Air Force Strategic and Space Systems under Presidents Carter and Reagan, to backstopping our bilateral negotiations with the Soviet Union while developing our national space arms control policy and serving as Chief U.S. Defense and Space Negotiator with the Soviet Union under President Reagan, as Strategic Defense Initiative (SDI) Director and Acquisition Executive for all our missile defense programs under President George H.W. Bush, and for 15 years as Chairman of the Board of Directors of a successful R&D company.

² https://www.energy.senate.gov/public/index.cfm/files/serve?File_id=C93079C7-50EB-49EE-B3A7-BA91E1DBA880
³ https://www.energy.senate.gov/public/index.cfm/hearings-and-business-meetings?Id=6878D1AC-26E6-4FEB-B301-FBC7111270FE&Statement_id=ECE24B98-3A21-4BE3-8EF1-75A92CB97CF0

⁴ Dr. Graham indicated the context for these observations was to explore with the Secretary of Energy how the Energy Department was going to support the Critical Infrastructure Protection Act (FY 2017 National Defense Authorization Act, Section 1913, "EMP and GMD Planning, Research and Development, and Protection and Preparedness" p. 1762), which directed the Department of Homeland Security: to develop plans to protect the electric grid and other critical infrastructures from EMP; to educate and train federal, state and local emergency planners and first responders on the EMP threat; and to conduct research and development to mitigate EMP.

2. Protecting the grid from the worst threat—nuclear EMP attack—can also mitigate lesser threats, including from natural EMP from solar storms, non-nuclear EMP from radiofrequency weapons, cyber-attacks, physical sabotage and severe weather.
3. State electric grids can be “islanded” by installation of surge arrestors, blocking devices, Faraday cages, and other devices to protect individual states, even though they may be part of a larger regional electric grid, from a prolonged catastrophic blackout. For example, Texas State Senator Bob Hall has introduced legislation to harden the Texas Electric Grid.
4. The EMP Commission is profoundly concerned that the 2014 Obama administration intelligence community assessment of nuclear EMP is profoundly erroneous, and perhaps the worst ever produced on EMP, and that has been used to thwart efforts to protect the nation against nuclear EMP by dismissing the threat, despite overwhelming evidence to the contrary.
5. Commissioners also are very concerned over misleading and erroneous studies by the NERC and others that grossly underestimate the natural EMP threat from solar storms, and dangerously, have become the basis for grossly inadequate standards for EMP/GMD protection approved by the Obama administrations’ FERC.
6. Commissioners are also concerned over misleading and erroneous studies recently completed by industry’s Electric Power Research Institute (EPRI), in cooperation with Obama administration holdovers in the Department of Energy, that grossly underestimate the nuclear EMP threat.

Dr. Graham’s observations provide sound bases for assessing and responding to vulnerabilities in the management and execution of efforts to provide a viable electric power grid. The EMP Commission was for 17 years the most competent and technically credible source of such advice. It was permitted to go out of business on September 30, 2017—and, as of this writing, it is unclear if it will be replaced by anything like as effective a watchdog of the disaggregated and dysfunctional Federal government that is currently failing to protect the American people against existential threats to the electric grid.

It is in that context that I welcome Secretary Perry’s tasking to FERC as a very important initial step to improve the resiliency of the grid and begin more seriously addressing this truly existential threat to our nation posed by a collection of natural and manmade threats. It is a welcome first step, but more must follow if Americans are to be truly protected against the effectiveness of these threats that results from the nation’s electric power grid vulnerabilities—vulnerabilities that can and should be corrected.

Frankly, I have become so concerned about the thus far inept federal government in dealing with these threats to the electric power grid—especially from EMP—that I am now spending most of my time working with local and state authorities and private citizens to address the key related issues from the “bottom up”—and I described one of those important initiatives in my May 4th testimony. If enough of our citizens gain an understanding of the issues and how they can—actually must—be addressed at the local level, then I believe Washington will eventually do its part in addressing this urgent problem.

Therefore, I look forward to the FERC response to Secretary Perry’s directive—which signals his most welcome recognition of the current very real existential threat; and I will help all parties to understand and support truly responsive solutions to the vulnerabilities of the nation’s electric power grid.

Respectfully submitted,



Ambassador Henry F. Cooper
Chairman, High Frontier

cc: Hon. Rick Perry