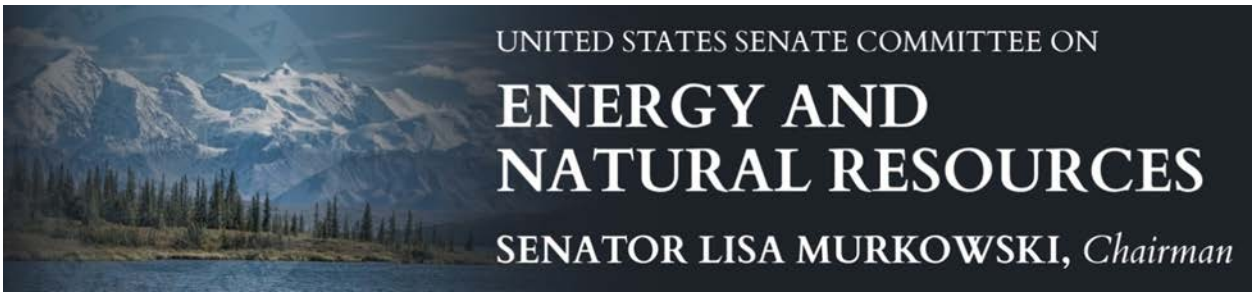

Opening Statement
ENR Hearing on Electromagnetic Pulse (EMP)
Chairman Lisa Murkowski
May 4, 2017

Good morning and welcome, everyone. The Committee will come to order.

Today we are here to examine the threat posed by electromagnetic pulse, better known as EMP, as well as policy options to protect energy infrastructure and provide for system restoration in the event of an EMP attack.

The United States has recognized a potential EMP attack as a national security threat for decades, and our efforts to understand a potential EMP burst are certainly not new. The Department of Defense and our national labs have been grappling with these issues to one degree or another since we first started testing nuclear weapons. Extensive tests in the 1950s and 60s examined the potential impact of an EMP burst on both military and civilian infrastructure. However, today there is a renewed focus on understanding the effects of such an attack, and an increase in efforts directed at mitigating and recovering from such an event should it occur.

This issue is perhaps more salient now than ever for several compelling reasons.

First is the proliferation of nuclear technology, which is no longer limited to the U.S., Russia, China, the U.K., and France. Other nations have tested nuclear weapons and missiles to deliver them. Rogue nations such as North Korea may already have or be close to obtaining these capabilities. We must also be mindful of the potential for a non-state actor to obtain a nuclear device—while their ability to use a missile as a delivery vehicle for a high-altitude EMP attack would likely be more limited, we know that it cannot be ruled out.

Second is the proliferation of electronics in today's society. Just about everyone in this room has a smart phone, and that's just the start of the devices that we rely on, that in turn rely on electricity and electronics to function. This has magnified the impact, as compared to the potential impact in the 1960s that an EMP burst could now have on the electric grid, the technologies that rely on electronics, and our daily lives.

We must recognize from the start of today's discussion that the threat posed by an EMP attack is a matter of national defense. Defending our nation from a missile carrying a nuclear warhead is clearly beyond the scope of the owners and operators of energy infrastructure and their

regulators. Nevertheless, these institutions do have a role in protecting critical energy infrastructure and providing for its restoration.

As the owners and operators of critical energy assets, our utilities must assist government EMP experts in understanding how the electric grid works. For its part, government must prudently share its knowledge and expertise with industry on a timely basis and approve or direct prudent reliability standards as warranted. There's no way around this. On one hand, we have defense and national security personnel who are very familiar with the effects of a nuclear detonation, but who are not responsible for the complexities of keeping the lights on. On the other hand, you have the professionals in the power sector know the grid, but are not familiar with the characteristics of a nuclear detonation.

It is critical that the electric industry and government improve upon their mutual understanding and trust, because it is essential to the productive relationships that are necessary to improve our ability to respond to EMP and other potential high impact but low frequency events.

Both camps must work together to share information and expertise. Our engineering schools and other conduits for professional expertise must embrace a new paradigm for considering and addressing security threats in the design and operation of electric systems. Improving our ability to respond to an EMP threat is also an area where, like cybersecurity – the subject of another recent hearing we just had – stronger public-private partnerships are needed and today's capabilities must be improved.

This hearing will consider, as a policy matter, whether the appropriate federal agencies have the authority they need to address this potential threat, and whether additional authority or direction is needed. Back in 2005, we established authority for the Electric Reliability Organization – now NERC – through an informed stakeholder process to establish, subject to FERC's approval, mandatory physical and cybersecurity standards for the industry. And more recently, in 2015, Congress codified the Department of Energy as the sector-specific agency for energy critical infrastructure and provided the Secretary with emergency authority to address a host of threats – cyber, physical, geomagnetic disturbances, and EMP.

We have taken some steps, but many argue and believe that those steps are not sufficient, and that we still have a great deal of work ahead of us in this area. Our task today is to consider the distinct points of view about EMP brought to us by our distinguished panel. I look forward to the testimony of all of our witnesses, but first let me turn to Ranking Member Cantwell for her opening remarks.

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