

William C. Ostendorff

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Chairman Upton, Ranking Member Rush and members of the subcommittee-thank you for the invitation to appear today. While I am currently a Professor of National Security Studies at the United States Naval Academy, I am not here on behalf of the Navy today. Rather, I am here to speak of my experiences in submarines, in the nuclear weapons program and at the NRC.

I would like to offer a few thoughts on the national security imperatives of the US “nuclear enterprise”. By “nuclear enterprise”, I simply refer to three significant programs. First, the nation’s nuclear weapons program. Second, the Navy’s nuclear propulsion program under Naval Reactors. And third, the nation’s commercial nuclear industry. Let me share my own experience in all three legs of the nuclear enterprise spanning four decades.

After graduating from the Naval Academy, I entered Admiral Rickover’s nuclear navy. I embarked upon a naval career that spanned 26 years with 16 years of sea duty on six submarines. I carried both strategic and tactical nuclear weapons on three of these submarines. I was privileged to command a Los Angeles nuclear attack submarine for three years during which time we drove that submarine 100,000 miles. That submarine and its reactor plant were engineering marvels and the crews professional and highly motivated.

After retiring from the Navy and working for the House Armed Services Committee, I was confirmed by the Senate to serve as Principal Deputy Administrator at NNSA, overseeing the 30,000 plus people in the nuclear weapons complex.

In 2010 I was confirmed to serve as an NRC Commissioner where I served until my term ended in the summer of 2016.

My forty years in submarines, nuclear weapons, and commercial reactors has engrained in me the vital role of human capital in the “nuclear enterprise.”

Nuclear is different. This work is hard, challenging, and requires the best trained engineers and scientists. But, without that nuclear related work to actually perform, those unique human capabilities atrophy at an alarming speed. And as that reactor technology work decreases, so does the ability and opportunity for the United States to influence nuclear safety and security worldwide.

Are there national security consequences to a declining commercial nuclear industry? Absolutely.

Let us first look domestically.

A prerequisite for national security is energy security. Nuclear energy provides carbon free, reliable baseload generation. It would be unwise for our federal government to sit by and watch the current nuclear industry decline continue. For at some point, that decline becomes irreversible. It is naive to think we could revive the human capital expertise that underpins the core of this industry in 100 or 200 years.

Economically, the nuclear industry provides well-paying jobs supporting local communities across the country.

Let’s look at human capital. Many of the current nuclear plant operators at commercial plants started out in the Nuclear Navy. Will the prospects of reduced opportunity for employment in the commercial industry have a negative impact on the Nuclear Navy’s ability to recruit? I do not have any data to share but think the answer may be yes.

What about the impact of a declining industry on undergraduate and graduate programs in nuclear engineering? What about the ongoing partnerships between community colleges and the nuclear plants that hire their graduates with associates degrees?

I now turn to impacts in the international arena. The ability of the US to lead in nuclear safety, security and nonproliferation efforts is significantly lessened as commercial activity erodes. To engage internationally, the US must participate. I saw this firsthand as a Commissioner in the aftermath of the 2011 reactor accident at Fukushima in Japan. The US was a key leader worldwide in post-accident nuclear safety regulation. I also saw this when speaking on best practices for physical and cybersecurity to an international audience at the International Atomic Energy Agency or IAEA in Vienna in 2015. Many countries look to the US for regulatory lessons learned -whether safety or security-because of the reputation and size of our program.

When I was sworn in as an NRC Commissioner in 2010, the New Reactor staff was reviewing license applications for 26 reactors. Today, that NRC staff is reviewing just two designs. While construction of the two AP 1000 units is in progress at the Vogtle plant, no others are being built today in the US.

As our nuclear industry shrinks, our nuclear voice is not as loud as it once was internationally.

Who fills that void? Russia currently dominates the export market for nuclear fuel and reactor technology. China is embarked on an aggressive domestic nuclear construction program and is poised to move out internationally.

It would be a natural development for Russia and China to control the nuclear export market and aspire to key leadership roles at the IAEA and other international nuclear forums.

Finally, the traditional US leadership role in nuclear non-proliferation is clearly threatened by this alarming trend.

It is a fact that our nuclear industry is in decline. There are clear, significant national security consequences at stake. I applaud the Committee for bringing attention to this vitally important topic.

I look forward to your questions.