

Reviewing the Administration's Nuclear Agenda
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Chairman Corker, Ranking Member Cardin, members of the Committee, it is a distinct pleasure again to be with the Committee to discuss issues related to preventing nuclear terrorism and proliferation.

My invitation contained a list of seven important and difficult questions. I will divide my answers to them into two parts—first, preventing nuclear proliferation, and second, advancing nuclear security (the most effective way to prevent nuclear terrorism).

At the outset, however, I would like to acknowledge an important aspect of U.S. policy to prevent nuclear proliferation and terrorism; it has enjoyed a bipartisan consensus across decades in both the legislative and executive branches. Senators Sam Nunn and Richard Lugar authored the legislation creating nuclear security cooperation with the former Soviet Union, and President George H. W. Bush signed it. President Clinton established a broad range of programs that were extremely effective. President George W. Bush expanded their scope and pace, and doubled their budgets. President Obama established the Nuclear Security Summits, which have cut red tape and created a sense of responsibility among leaders. And Congress actively participated in and funded all of these programs and projects.

Nonproliferation

President Obama enunciated his nonproliferation goals on April 5, 2009 in Prague. His agenda was broad and ambitious, and he related his disarmament goals to his nonproliferation objectives. His foremost objective was “to seek the peace and security of a world without nuclear weapons,” while acknowledging that “this goal will not be reached quickly—perhaps not in my lifetime.” Although the President signed and the Senate consented to ratification of the New START Treaty, Russia’s violation of the INF Treaty and refusal to negotiate reductions of non-strategic nuclear weapons, together with the growth of nuclear weapons arsenals in North Korea, Pakistan, and perhaps elsewhere, leave this goal more distant today than it was seven years ago, and with no visible path to achieving it.

The President also sought to conclude or to ratify Fissile Material Cut-off and Comprehensive Test Ban Treaties. Here too, prospects for achieving the Administration’s goals are more distant than they were seven years ago.

The President sought to strengthen the Nonproliferation Treaty by three means. First, he called for more resources and authorities for international inspectors. The International Atomic Energy Agency's (IAEA) total budget for nuclear verification rose from €136 million in 2009 to €143 million in 2016, an increase of less than one percent per year. Since the Prague speech, Additional Protocols between the IAEA and 36 countries have entered into force, bringing the total to 126 in force. The Iran nuclear deal both broadened and circumscribed established IAEA inspection authorities.

Second, the President sought to strengthen the Nonproliferation Treaty by demanding, "real and immediate consequences for countries caught breaking the rules." He also asserted that, "Rules must be binding. Violations must be punished. Words must mean something." Here the record is mixed, but does not meet the standard set by the President. So far anyway, China has shielded North Korea from the strongest effects of international sanctions with infusions of trade, aid, and investment, and consequently Pyongyang continues prohibited missile and nuclear tests. The Iran nuclear deal has curtailed Iran's programs, but it did nothing to compel Tehran to provide a complete and correct declaration of the military dimensions of its program, as required by its Safeguards obligations, and it has done nothing to halt prohibited missile tests.

Third, the President sought to strengthen the Nonproliferation Treaty by creating a new framework for international cooperation, including a fuel bank. The IAEA Board of Governors approved establishing a fuel bank in 2010 and in August 2015 the Agency signed an agreement with Kazakhstan to host it. A new framework for civil nuclear cooperation remains more elusive, with new states calling for a uranium enrichment capability, and the prospect of three civil reprocessing programs capable of separating plutonium in Northeast Asia. Thus, a new framework to limit the spread of enrichment and reprocessing technologies—the keys to making nuclear weapons—remains a challenge.

Finally, President Obama introduced "a new international effort to secure all vulnerable nuclear material around the world within four years" to the Prague agenda. He also called for new standards and expanded cooperation with Russia. I will deal with the nuclear security issue in the second half of my testimony. Here, I would note that the goal of securing all vulnerable nuclear material around the world has not yet been achieved, and neither have stringent standards for nuclear security, nor expanded cooperation with Russia.

North Korea remains the most dangerous and intractable proliferation threat facing the United States. To date, bribes have not sufficed to buy an end to North Korea's nuclear weapons program, and China's trade, aid, and investment have more than offset the effects of sanctions. The Institute for Science and International Security estimates the North Korean nuclear arsenal to have been 10-16 weapons at the end of 2014, and that both plutonium and highly enriched uranium stocks will continue to rise. North Korea recently conducted a fourth nuclear test and continues to launch ballistic missile tests. Recent statements from Pyongyang are even more troubling—albeit ambiguous—as they seem to foreshadow some sort of test involving a nuclear capable re-entry vehicle.

Since 2006, the United Nations Security Council has imposed five sanctions resolutions on the DPRK of increasing stringency. The latest, Resolution 2270, imposes new financial sanctions, limits on small arms transfers, and inspection procedures for North Korean shipping. Moreover, North Korea has recently attracted unprecedented criticism. Responding to Pyongyang's threats to use "preventive nuclear strikes," the Russian Foreign Ministry said on March 8, 2016, "Pyongyang should be aware of the fact that in this way the DPRK will become fully opposed to the international community and will create international legal grounds for using military force against itself in accordance with the right of a state to self-defense enshrined in the United Nations Charter." China too has been more critical than in the past.

The real test of whether or not international cooperation can halt and reverse the North Korean nuclear program, will be the level of cooperation and effort that China will extend. Beijing effectively holds a veto over sanctions policy.

Beijing's primary interests are no war and no instability, which could lead to political upheavals and refugee flows. Yet, in many ways North Korean actions are directly antithetical to stated Chinese interests. First, Pyongyang is the primary source of instability in Northeast Asia, launching military attacks, conducting nuclear and missile tests, regularly threatening its neighbors, and managing its economy so poorly that millions of people have died of famine. Second, DPRK belligerence draws the United States closer to its allies in Japan and South Korea. Third, the North's nuclear threats increase the salience of U.S. extended deterrence. Fourth, Pyongyang's nuclear and missile tests spur greater American and allied interest in missile defense. Fifth and finally, North Korea's threats make the continued presence of U.S. forces on the Korean Peninsula more, rather than less, likely.

From a positive perspective, peaceful reunification, were it to occur, would advance the interests of all peoples in Northeast Asia. A source of instability would be removed. The black hole that is North Korea's economy could open up to reform, trade, and growth. South Korea's security imperatives would diminish, perhaps offering more options regarding the continued need for U.S. ground forces. While there is no immediate prospect for peaceful reunification of Korea, convincing Beijing that it would be in China's long-term interest could go a long way toward creating the conditions necessary for it to occur. North Korea is not viable without Chinese support.

Finally, on nonproliferation, I was asked, "What opportunities has the Administration missed . . ." Earlier, I alluded to one such issue—the growth of reprocessing programs in Northeast Asia. The long-delayed spent fuel reprocessing plant at Rokkasho in Japan is inching toward opening, perhaps in 2018. When it is complete, it will be capable of producing 8 tonnes of separated plutonium per year, adding to existing stocks of about 47 tonnes, held both in Japan and Europe. Separating plutonium is of concern for two reasons.

First, it creates weapons usable material, which might be subject to theft. Nearly all of

the fissile material that has been seized outside of authorized control has been in bulk form, as created in reprocessing plants. If even one percent of the annual plutonium production were to be stolen, it would be enough for ten bombs per year. Second, it raises concerns of proliferation risk. While Japan has an impeccable nonproliferation record, China has raised the issue. Last June, China's Foreign Ministry spokesman said, "Japan's long-term storage of sensitive nuclear materials has outweighed Japan's needs and aroused the serious concern of the international community... We expect Japan to respond to the concerns of the international community, take practical action at an early date, and address the imbalance between its demand and supply of sensitive nuclear materials."

Despite repeated assertions to the contrary, reprocessing is economically indefensible. Japan is coming to realize this, facing its 28th year of construction, plant costs approaching \$25 billion, and 23 delays to the start of operations totaling about 20 years. Despite this sorry experience, China recently announced plans for a reprocessing plant slated for completion (assuming it does not face similar problems) by 2030. Furthermore, South Korea has pressed to keep alive an option to reprocess spent fuel through a technology called pyro-processing. If Japan moves ahead, it will be more difficult to convince Seoul not to do the same. If South Korea begins reprocessing, it is difficult to imagine negotiating an agreement prohibiting the DPRK from doing so.

A concerted diplomatic effort by the Administration, articulating security and nonproliferation concerns to Japan because of the precedent Rokkasho might establish, explaining to China the costs the United States has faced at the MOX Fuel Fabrication Facility, which would start with separated plutonium, and seeking concerted decisions in Northeast Asia to forego reprocessing, could prevent and reverse the spread of technology for making fissile material. All three countries would be safer and more prosperous for deciding not to reprocess spent fuel, at least for the foreseeable future.

Nuclear Security

In discussing this issue, I will draw upon a forthcoming report my Belfer Center colleagues Matthew Bunn, Martin Malin, Nickolas Roth, and I have prepared in advance of the 2016 Nuclear Security Summit, although the opinions expressed in this testimony are solely my own.

The danger of nuclear terrorism remains real. Measures to secure nuclear weapons, and the material needed to make them, are the most effective means to reduce that danger. The job of securing nuclear materials is never "done;" it requires a commitment to continuous improvement. Since the 2014 Nuclear Security Summit, security for nuclear materials has improved modestly, but the capabilities of some terrorist groups, particularly the Islamic State, have grown dramatically, suggesting that in a net calculation, the risk of nuclear terrorism is higher than it was two years ago.

Nuclear security around the world has improved dramatically over the past 25 years.

Gaping holes in fences no longer exist, sensors are widely in place to detect theft by insiders, procedures are tighter, and more than half the countries that once had nuclear material are now free of it. Nonetheless, significant weaknesses persist, and much remains to be done to protect materials effectively and sustainably in the face of evolving threats. Unfortunately, progress is slowing and funding is declining.

Areas where there has been significant *but incomplete* progress, demanding further attention and actions include:

- Committing to stringent nuclear security principles;
- Implementing effective and sustainable nuclear security ubiquitously;
- Consolidating nuclear weapons and weapons-usable materials;
- Strengthening security culture and combating complacency;
- Building confidence in effective nuclear security; and,
- Continuing an effective nuclear security dialogue after the summits end.

Unfortunately, U.S. spending on nuclear security cooperation has declined from over \$800 million in fiscal year 2012 to just over \$500 million in 2016, a 38 percent decline, and the Administration proposes a further 24 percent cut for 2017, to less than \$400 million. “International Nuclear Security,” a flagship program, would be cut by two-thirds, to a level not seen since the 1990s. Some of these reductions result from completed work or ending cooperation with Russia, but they have also led to a slowing or postponing of some important nuclear security work. Administration estimates call for spending substantially less on nuclear security every year for the next five years than the government was projecting only one year ago. These spending reductions, if approved by Congress, would further slow nuclear security progress.

Russia’s absence from the Nuclear Security Summit is troubling for two reasons. First, last January, Russia went from simply choosing not to attend the meeting, to actively attacking it as illegitimate. This will make it harder to muster consensus on difficult issues. Second, Russia has the world’s largest stocks of nuclear weapons and weapons-usable material. While physical security improvements are substantial, corruption, organized crime, and Islamic extremism are endemic.

For example, a recent report by the Carnegie Moscow Center found that radical organizations including the Islamic State have established a presence in Russia’s Chelyabinsk Province, home to some of Russia’s most sensitive nuclear establishments. While there is no public evidence that they have targeted nuclear facilities, the geographical proximity of active extremists to sites with fissile material is worrisome.

Despite real and substantial differences with Moscow over issues ranging from Ukraine, to the INF Treaty, to Syria, U.S.-Russian cooperation on nuclear security remains in U.S. interests. In particular, cooperating to defeat the Islamic State’s unconventional weapons capabilities would clearly be in the best interests of both countries. While the old days of a donor/recipient relationship are over, cooperation among scientists to improve the technology and techniques for nuclear security could also advance both countries’

interests. Moreover, the Global Initiative to Combat Nuclear Terrorism, which is co-chaired by the Washington and Moscow, can become a vehicle to both overcome the gap in U.S.-Russian nuclear security cooperation and pick up the slack created by the end of the Nuclear Security Summits.

With respect to progress on securing nuclear material in Pakistan, I have no knowledge of that issue since leaving government in 2009.

The first and best way to defeat nuclear smuggling is effective security at facilities with fissile material. Empirically, however, there have been more than twenty incidents in which fissile material has been seized outside of authorized control over the past two decades or so. While most of these examples occurred before security upgrades were widespread, incidents in 2003, 2006, 2010, and 2011 demonstrate an ongoing issue. Although none of them involved sufficient material to fabricate a weapon, material seizures are important for three reasons. First, they are absolute evidence of a security failure. Second, until there is certain knowledge of where the material came from, how it was stolen, who was involved, and where it was headed, we cannot be certain that the security hole has been plugged. Third, in many of the instances, the recovered material was advertised as a sample of a larger quantity that remains at large. Unfortunately, there is no publicly available evidence that these incidents have been successfully investigated and resolved.

Measures to detect illicit shipments of nuclear material, the Second Line of Defense and Megaports programs have suffered funding cuts and controversy in recent years. To be sure, detection systems are not perfect and must be supplemented by effective law enforcement and intelligence work. Moreover, the Eurasian Customs Union of former Soviet states has disrupted the originally envisioned architecture, which started with a ring around Russia. These problems, together with what may be a deteriorating security situation in Russia, require special mitigating steps, including heightened intelligence and law enforcement efforts, more thorough customs and border control work, and establishment of new inspection rings.

In working to defeat nuclear smuggling, it will also be important to address the North Korean threat. Pyongyang has a demonstrated willingness to sell the means to produce fissile material, missiles, and other destabilizing weapons. The growth in the DPRK's stocks of fissile material raises the possibility that some of it could go up for sale. Pyongyang should realize—and the Obama Administration should make clear—that any transfer of fissile material that resulted in detonation of a nuclear weapon, would implicate North Korea in the full consequences of the action. Similarly, any transfer to a non-state actor, would result in a severe response from the United States. Nonetheless, this danger will require additional vigilance.

Mr. Chairman, in sum, while much has been done over the past twenty-five years to prevent nuclear terrorism and proliferation, much remains to be done. Key gaps remain unfilled. Progress has slowed. Budgets are declining. President Obama urged his colleagues at the 2014 Nuclear Security Summit to sprint to the finish. That is exactly the urgency that is needed later this month and in the years beyond.