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On
Managing Interagency Nuclear Nonproliferation Efforts
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U.S. Senate Homeland Security and Government Affairs Committee

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Mr. Chairman, Ranking Member Johnson, and Members of the Subcommittee:

Thank you for this opportunity to brief the committee on the Department of Energy's National Nuclear Security Administration's (NNSA) contribution to the international effort to secure the world's most vulnerable nuclear material. The President's four-year effort is an unprecedented global undertaking, led by the United States, with significant contributions from dozens of countries around the world. The White House, in close coordination with our interagency and international colleagues, is leading and implementing a comprehensive three-tiered strategy to secure vulnerable material at the individual site level, the national level and the global level. I am pleased to report that NNSA has made important contributions to the U.S. Government's efforts in each of these strategic areas.

NNSA is executing a detailed four-year work scope to meet the President's goal of accelerating international efforts to secure the world's most vulnerable nuclear material, covering a vast array of activities, to include: (1) removing and disposing of high-priority nuclear materials worldwide; (2) converting highly enriched uranium (HEU)-fueled research reactors to use low enriched uranium (LEU) fuel; (3) assessing physical security and providing security upgrades at nuclear sites; (4) consolidating materials to fewer, more secure sites; (5) improving international capabilities to detect and interdict illicit nuclear and radiological materials trafficking; and (6) promoting a culture of awareness, responsibility and security in the countries and sites in which we work.

NNSA has supported programs at the level of nuclear sites for a number of years and its contributions have been significant, including: (1) removing 3,125 kilograms of HEU and Pu from 39 countries (enough for over 125 nuclear bombs;

approximately 1000 kg since the Prague speech); (2) cleaning out all HEU from 19 countries [six since the Prague speech]; (3) converting or verifying as shut down 77 HEU-fueled research reactors; (4) and upgrading material protection, control, and accounting measures to strengthen security at Russian nuclear warhead, research, and bulk processing sites.

Before the end of December 2013, NNSA will: (1) remove an additional 1,228 kilograms of HEU and Pu (for a total of 4,353 kgs); (2) clean out all HEU from an additional 8 countries for a total of 27 (14 of which will have taken place during the 4-year effort; (3) convert or shutdown an additional 11 HEU-fueled research reactors (for a cumulative total of 88).

We will sustain material protection, control, and accounting upgrades at Russian nuclear warhead sites and continue material protection, control, and accounting upgrades at additional nuclear material sites in Russia and other countries that qualify for our technical and financial assistance due to the sensitivity and/or quantity of material. In countries like Russia, which will continue to have substantial holdings of nuclear materials, NNSA will work to promote the approach we have used in the United States, namely to consolidate weapons-usable materials into fewer buildings at fewer sites and to down-blend HEU to LEU. In FY 2012, we expect that we will have down-blended over 15 metric tons of Russian civil HEU since the start of these efforts in 1999, permanently eliminating the threat from this material. This is in addition to the over 440 Metric Tons of Russian HEU downblended under the HEU Purchase Agreement.

The material removal process, though often the public focal point of our work scope, forms only a portion of a complex set of actions that we carry out to address the risk of nuclear terrorism. NNSA also leads U.S. interagency bilateral assessment visits to ensure that the physical protection measures at foreign nuclear facilities that house U.S.-obligated nuclear material meet International Atomic Energy Agency (IAEA) recommendations for nuclear security as set forth in the IAEA guidelines for the physical protection of nuclear materials and facilities ("INFCIRC/225/Revision 5"). These bilateral assessments visits allow the U.S. Government to confirm that U.S. supplied or obligated nuclear material is adequately protected, as is called for in each 123 Agreement that the United States enters into. The bilateral assessment visits are staffed by interagency teams from NNSA, the Nuclear Regulatory Commission (NRC), the Department of State, and the Department of Defense's Defense Threat Reduction Agency. From FY 2010 to FY 2011, we more than doubled the number of countries visited and quadrupled the number of facilities visited. Our plans for FY 2012 include additional

increases in the number of country and facility visits. The Department of Energy employs a specific methodology for prioritizing physical protection visits that considers variables such as: the type and quantity of U.S.-obligated material at a facility; whether a country is making recommended security improvements; pending NRC licenses; and information from previous physical protection assessments. DOE/NNSA works closely with our interagency colleagues to prioritize and plan visits based on these criteria. We track U.S. inventories of nuclear material overseas with the Nuclear Materials Management and Safeguards System (NMMSS), which serves as the government's central repository and database for U.S. inventories of nuclear material overseas. The USG relies on this and the International Atomic Energy Agency's (IAEA) comprehensive safeguards system as important tools to help maintain continuity of knowledge of the location of nuclear materials in a country, including U.S.-obligated nuclear material.

NNSA has also been actively working with partner countries on the second tier of the strategy, or national efforts. An important element of this tier has been the establishment of nuclear security Centers of Excellence. These Centers play a vital role in sharing best practices in all disciplines related to nuclear security, both domestically and regionally, and at various levels. With regard to nuclear site personnel, the Centers will train site-level activities, including on measurements and accounting of nuclear material and on the design and installation of nuclear material security systems. The Centers will also engage with governmental officials on issues related to design basis threat and regulatory oversight. NNSA has supported similar trainings in many nations, including Russia.

Establishing these centers has been an exercise in interagency coordination. In the case of India, for example, the interagency has worked together seamlessly to help implement the Memorandum of Understanding (MOU) signed by our two countries in November 2010 during the President's trip to India. This MOU provides the basis for our nuclear security -related cooperation at India's planned center of excellence, which it calls a Global Centre for Nuclear Energy Partnership. The interagency has also worked together to implement a similar MOU signed last month between the United States and China.

The U.S. is pleased that the IAEA has taken the lead in coordinating the various Centers of Excellence and other relevant training centers to reduce the potential for overlap and redundancy and promote best practices worldwide in nuclear security. In our efforts to reach the benchmarks set at the Washington Nuclear Security Summit and the Four Year effort to secure the world's most vulnerable nuclear

materials, the United States will continue to support partner countries in this area and will work in parallel with the IAEA to further our shared nonproliferation and nuclear security goals.

For over 30 years, one of our most active bilateral partnerships on nonproliferation and nuclear security has been with Japan. Following the Washington Nuclear Security Summit, the United States and Japan established a bilateral Nuclear Security Working Group (NSWG) to demonstrate leadership on and further expand bilateral cooperation. The NSWG has evolved to include representatives from 12 Japanese agencies and 8 U.S. agencies and has successfully expanded nuclear security cooperation to meet nine mutual goals outlined in a jointly-developed Roadmap. NNSA has led the collaborative efforts under several high-priority NSWG Roadmap goals, including cooperation on Japan's Center of Excellence, nonproliferation nuclear forensics, safeguards implementation, HEU conversion and removal, and implementation of INFCIRC/225/Revision 5.

National level activities are also taking place at international border crossings, airports, seaports, and points of entry to increase the capability to deter, detect, and interdict illicit trafficking of nuclear and other radioactive material that may have been covertly removed from nuclear facilities or overtly purchased for commercial use and transported across international borders and through the maritime shipping network. Our Second Line of Defense (SLD) program, responsible for increasing partner country capacity in the area of radiation detection, reached a major milestone in 2011. In cooperation with the Russian Federal Customs Service, the two parties completed the deployment of 383 radiation detection systems at border crossing sites in Russia. Worldwide, since the start of the Four Year effort, SLD has installed radiation detection systems at 192 international crossing points and at 20 Megaports (for a cumulative total of 421 Core sites and 41 cumulative Megaports since the program's inception) and has deployed 10 mobile detection systems in five countries.

At the global level, NNSA is engaged in a number of important ongoing activities. As one of the first deliverables to come out of the 2010 Nuclear Security Summit Work Plan, NNSA led the five-year international effort to develop and finalize the fifth revision of the IAEA's nuclear security recommendations on physical protection of nuclear material and nuclear security, INFCIRC/225. This document is used to assess the security of U.S.-obligated nuclear material abroad. We are conducting an intensive effort to promote global implementation of this revised guidance through outreach and engagement activities with the IAEA and a number

of Member States. We also partner with the IAEA on training and educational activities, provide subject matter experts to assist the IAEA's Office of Nuclear Security, and provide assistance for the production of documents in the IAEA's Nuclear Security Series.

The second Nuclear Security Summit will be held in a matter of weeks. In 2010, the leaders of 47 nations came together to demonstrate a commitment to nuclear security at the highest levels. I have sometime been asked what the benefit of a Summit is, given the time and complexity required to organize a meeting at that level. Let me reply simply that gaining that level of commitment and motivation for nuclear security efforts was unprecedented prior to 2010, and the actions that have followed have been significant. When a head of government decides that an issue is important, it can lead much of that government's supporting bureaucracy to act with levels of energy that could not be generated from the bottom up. We fully expect that the leaders who will attend will renew their commitments to ensure that nuclear materials under their control are not stolen or acquired by terrorists. This means renewing their respective pledges to continue to evaluate the threat and improve the security as changing conditions may require, and to exchange best practices and practical solutions for doing so. At the end of this month, leaders will gather again—this time in the Republic of Korea—to take stock of the work that has taken place since the Washington Summit and to set new goals for nuclear security. We would be happy to brief you after the Summit has concluded on the achievements announced and pledges made there.

As we complete certain activities under the Four-Year Effort, we will continue our critical nuclear security efforts beyond 2013 by: (1) converting or shutting down all remaining HEU-fuel research reactors and isotope production facilities, discharging research reactor HEU cores for cooling; (2) after cooling, removing and permanently disposing of the HEU and assisting countries with the disposition of excess plutonium; (3) accelerating efforts to secure high activity radiological materials that could be used in dirty bombs; (4) completing additional security upgrades and training infrastructure at HEU and plutonium storage and processing facilities in Russia; (5) continuing work to establish nuclear security Centers of Excellence in several countries to better promote best practices and stronger security cultures; (6) ensuring the sustainability and eventual transition of security at hundreds upgraded nuclear and radiological sites around the world; and (7) working with existing partners to upgrade physical security to the recent IAEA standards.

In addition to converting research reactors and isotope production facilities from the use of HEU to LEU, DOE/NNSA is also working with companies in the United States to develop the ability to produce the medical isotope molybdenum-99 (Mo-99) using technologies that do not use HEU. These projects will have the effect of replacing Mo-99 produced with HEU around the globe with non-HEU-based Mo-99, while at the same time establishing a reliable supply of this critical medical isotope.

We are also working to reduce the risk that terrorists might acquire radiological materials for use in a radiological dispersal device (RDD), or “dirty bomb,” by securing high-priority radiological materials both domestically and internationally. To date, NNSA has made significant progress. At home, we have upgraded the security of more than 300 facilities; internationally, we have upgraded the security of more than 850 sites. Our domestic security enhancements are voluntary and compliment the U.S. Nuclear Regulatory Commission’s regulatory security requirements. As part of the President’s FY2013 budget request, we have requested increased funding for NNSA’s radiological security programs. In addition, we have established a very effective coordination mechanism to ensure that all U.S. domestic radiological security activities are coordinated and to avoid duplication of effort. This Trilateral Coordination group includes senior level representatives from NNSA, the NRC, DHS/DNDO, and the FBI. We meet on a quarterly basis to review all activities related to radiological security and to agree on next steps.

The President’s proposed budget for FY2013 provides the funding necessary to carry out all of these activities; however, given the current fiscal constraints on all government agencies, we have stepped up our efforts to identify areas where our interagency partners and other nations can help share the costs associated with this important work. I am happy to report that since Congress granted NNSA programs the ability to receive international contributions in FY2005, we have received over \$70M from Canada, the United Kingdom, Finland, South Korea, New Zealand, Norway, and the Netherlands. In addition, we have cost sharing efforts underway with Russia on nuclear and radiological security and Second Line of Defense activities, through the U.S.-Russia Bilateral Presidential Commission, and are working with our interagency and international colleagues and China as that country develops its Nuclear Security Center of Excellence. The full value of cost sharing with our international partners is hard to estimate precisely, but the financial, technical and diplomatic resources that they bring to these efforts have saved the U.S. Government millions of dollars over the last several years.

My colleague from the Department of State, Assistant Secretary Countryman, has already mentioned our engagement under the Global Partnership. NNSA routinely receives contributions from countries working under the Partnership to help complete priority projects. We will continue our outreach efforts to all countries in the Partnership throughout the coming year, as the U.S. holds the Presidency of the Global Partnership in 2012.

One of the best parts of my job is working with the people sitting at the table with me today. Our interagency cooperation is strong and institutionalized. We participate actively in National Security Staff-led Interagency Policy Committee (IPC) and Sub-IPC meetings. These meetings are routinely held to develop consistent interagency policy positions and implementation strategies. The IPC and Sub-IPC process continues to be a productive venue for interagency coordination.

Through the “Bridge Process”, we hold quarterly coordination meetings with the Department of Defense (DoD). This is led at the Assistant Secretary level and we discuss all areas of common interest. At the working level, we have established five permanent working groups that meet regularly. This is another area where we can reduce costs, as there are ways that DoD and NNSA strengths and unique capabilities can complement each other.

Congress has been very supportive of the various programs that support the Four-Year effort, but there are a few steps that could be taken to strengthen our nuclear security efforts.

One of the most important things Congress can do to ensure that NNSA executes the Four-Year Effort as planned is the budget process to avoid a situation where we have to manage programs under continuing resolutions (CRs). CRs present numerous difficulties for the implementation of our programs because a vast majority of our efforts are done through large contracts for long-lead time activities and we require the funds to sign the contracts early in the fiscal year. CRs pose serious problems to program execution and can often cause delays, and in some cases cancellations of certain projects. NNSA does its best to manage its funds effectively and minimize the impact of CRs, but this is often at the expense of other critical nonproliferation and nuclear security program objectives.

Many of the program authorities that Congress put in place that allow NNSA to receive international contributions end in the FY2013 timeframe. Given the success of this authority in saving taxpayer dollars by bringing funding to high

priority projects and in building international nuclear security partnerships, Congress could extend and expand the authority of NNSA programs to receive these contributions. As I mentioned earlier, this authority has resulted in the transfer of over \$70 million to NNSA's nuclear security efforts since 2005.

In our continuing efforts to minimize the use of HEU, Congress could work with the Administration to develop industry-wide incentives for the medical community to preferentially procure non-HEU based Mo-99 as it becomes available. Such incentives could involve labeling or other World Trade Organization-consistent trade measures for medical isotopes certified to have been produced without HEU; additional constraints on the export of HEU for isotope production as non-HEU sources become available; and an examination of the costs, fees, and reimbursement processes for medical procedures that utilize these important isotopes. The U.S. interagency is currently evaluating such alternatives and I encourage you to call upon the interagency stakeholders at your disposal to discuss these alternatives in detail. Such actions would both reduce proliferation concerns and ensure a reliable and diverse supply of Mo-99 for the long-term.

Thank you again for the opportunity to brief the committee on DOE/NNSA's contributions to the international effort to secure the world's most vulnerable nuclear material. As I mentioned earlier, the four-year effort is an unprecedented global undertaking, led by the United States, but with significant contributions from dozens of countries around the world. We have enjoyed tremendous support from Congress, and have coordinated our efforts closely through the White House, and with our interagency colleagues represented at this table. I look forward to answering any questions you may have.