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Senate Armed Services Committee
On the
Fiscal Year 2011 President's Budget Request
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Thank you, Mr. Chairman, and Committee Members, for the opportunity to present the Department of Energy's National Nuclear Security Administration (NNSA) Fiscal Year 2011 President's Budget Request for the Office of Defense Nuclear Nonproliferation.

The Defense Nuclear Nonproliferation mission is both critical and multi-faceted: to provide policy and technical leadership to limit or prevent the spread of Weapons of Mass Destruction (WMD)-related materials, technology, and expertise; to advance technologies to detect WMD-related proliferation worldwide; and to eliminate, reduce, or secure surplus nuclear weapons-related materials. In short, we detect, deter, secure, or dispose of dangerous nuclear and radiological materials worldwide.

The President's FY 2011 Budget Request for the Defense Nuclear Nonproliferation portfolio is $2.69 billion, an increase of 25.8% from FY2010. As NNSA Administrator D'Agostino has stated, this budget request is a "direct and tangible display of the President's commitment to this mission, and a demonstration of the critical role NNSA plays in implementing the President's unprecedented nuclear security agenda." NNSA's Defense Nuclear Nonproliferation program is a key component of the President's nonproliferation vision, and we are working — together with our more than 130 international partners — to achieve these global security goals.

This comprehensive nonproliferation, nuclear security, and arms control agenda was outlined in the President's April 2009 speech in Prague, Czech Republic and consists of several key objectives, including:

- Implementing a new international effort to secure all vulnerable nuclear materials worldwide in four years;
- Taking concrete actions toward a world without nuclear weapons;
- Breaking up nuclear black markets and halting nuclear smuggling; and
- Strengthening the Nuclear Nonproliferation Treaty (NPT).

The FY2011 Defense Nuclear Nonproliferation Budget Request can be summarized into these four major categories of effort. This FY2011 request funds efforts to support the President's nuclear security vision, as an early step in meeting this multi-year initiative.

Additionally, within these four categories, we are making solid contributions in cross-cutting Administration and NNSA priorities, including strengthening the nation's Science and Technology (S&T) base, reinvigorating America's scientific and technical human capital, and upholding our strong commitment to effective project management.

Specifically, our $2.69 billion FY2011 request includes:

- More than $1 billion for the Fissile Materials Disposition (FMD) program to dispose of surplus plutonium and highly enriched uranium by constructing a MOX Fuel Fabrication Facility and a Waste Solidification Building, developing a capability to disassemble excess nuclear weapon pits, and supporting Russian plutonium disposition activities. The FY2011 request aligns management and funding responsibilities for the interrelated surplus plutonium disposition activities, in support of U.S. nonproliferation and arms control objectives, under a single appropriation. The FY 2011 Russian Fissile Materials Disposition Request seeks $100 million of a total $400 million U.S. commitment to support plutonium disposition in Russia. On April 13, 2010, Secretary of State Clinton and Russian Minister of Foreign Affairs Lavrov signed the Protocol to amend the 2000 Plutonium Management and Disposition Agreement (PMDA).
- Over $590 million for the International Nuclear Materials Protection and Cooperation (INMP&C) program (an increase of $18 million) for additional Material Protection Control & Accounting (MPC&A) upgrades, expansion of MPC&A cooperation with countries outside of Russia and the former Soviet Union, and additional deployment of radiation detection systems to combat illicit trafficking of nuclear and other radioactive materials under the Second Line of Defense program;
- Nearly $560 million for the Global Threat Reduction Initiative (GTRI) (an increase of 68 percent) to remove and secure high-priority vulnerable nuclear material around the world in four years, accelerate additional conversions of highly enriched uranium (HEU) fueled research reactors to the use of low enriched uranium (LEU) fuel, and to provide a comprehensive approach to permanently deny terrorists access to nuclear and radiological material at civilian sites worldwide;
- Over $350 million for the Nonproliferation and Verification Research & Development (R&D) program (an 10 percent increase) to provide the key technical support for the President's arms control and nonproliferation agenda; and
- Nearly $156 million for the Nonproliferation and International Security (NIS) program (a decrease of almost 17 percent, primarily the result of a reduction in activities to support verification of disablement of the Democratic People's Republic of Korea nuclear program) to safeguard nuclear material; control the spread of WMD technologies, equipment, and expertise; and verify nuclear reductions and compliance with international regimes, treaties, and agreements.

Securing Nuclear Weapons and Materials from Terrorists

The President's April 5, 2009 speech in Prague presented a vision to address the international nuclear threat. His call to secure all vulnerable nuclear materials around the world within four years is a cornerstone of this strategy. Within the U.S. Government, the Office of Defense

Nuclear Nonproliferation will perform a significant portion of this crucial nuclear security work. Implementing this nuclear security initiative will require expanding and accelerating our security cooperation with Russia and other key countries, pursuing new partnerships to secure nuclear materials, and strengthening nuclear security standards, practices, and international safeguards.

Our FY 2011 budget request funds early efforts to support the Administration's nuclear security vision, as a first step in meeting this multi-year initiative. Two Defense Nuclear Nonproliferation programs are providing sizeable contributions to this goal: the Global Threat Reduction Initiative and the International Nuclear Materials Protection and Cooperation programs.

The Global Threat Reduction Initiative (GTRI) mission is to reduce and protect vulnerable nuclear and radiological materials at civilian sites worldwide. To execute this mission, GTRI: 1) Converts research reactors and isotope production facilities from the use of highly enriched uranium (HEU) to low enriched uranium (LEU); 2) Removes and disposes of excess nuclear and radiological materials; and 3) Protects high-priority nuclear and radiological materials from theft and sabotage. These three key subprograms of GTRI -- Convert, Remove, and Protect -- provide a comprehensive approach to achieving its mission and denying terrorists access to nuclear and radiological materials.

The 68 percent GTRI increase in the President's FY2011 budget request accelerates these threat reduction activities to secure all vulnerable nuclear materials in four years. Among other priorities, the FY2011 budget request allows GTRI to initiate efforts to remove over 1,650 kilograms of excess HEU and convert an additional 7 research reactors to the use of low enriched uranium fuel. Additionally, as part of its mission to reduce the use of HEU in civilian applications globally, GTRI will address the anticipated supply shortage of the medical isotope Molybdenum-99 (Mo-99) by implementing projects demonstrating the viability of non-HEU based technologies for large-scale Mo-99 production.

The International Nuclear Materials Protection and Cooperation (INMP&C) program works in the former Soviet Union and other countries of concern to secure nuclear weapons and weapons-usable nuclear materials. The Material Protection Control & Accounting (MPC&A) program achieves this mission by providing security upgrades at nuclear sites, consolidating these materials at fewer sites that are more secure, and supporting the development of sustainable MPC&A systems. Beyond security upgrades, the MPC&A program also works with partner countries to develop regulations and procedures concerning the material control, accounting, and physical protection of nuclear materials, including in the areas of training, education, transportation, nuclear security culture, protective forces, material measurements, nuclear material accounting and inspections. In Russia, INMP&C partners include the Russian Ministry of Defense (MOD), the State Corporation for Atomic Energy (Rosatom), and Rostekhnadzor, the Russian nuclear regulatory agency.

As agreed under the Bratislava Nuclear Security Initiative of 2005, major progress was made on security upgrades in Russia, including completion of all MOD warhead storage sites by the end of 2008. As a result of this success, some important upgrade work was added to MPC&A's mission after February 2005, and that work is currently being accelerated to support the

President's four year nuclear security goal. Although this particular program is one of our more mature threat reduction efforts and has made considerable progress in Russia and elsewhere, work remains to be done to secure other vulnerable nuclear materials around the world within four years.

The FY2011 INMP&C budget request allows this program to continue additional nuclear security upgrades at the 19 (out of 214) remaining Russian buildings within the program's scope where upgrades have not been completed, and to complete five of these 19 buildings in FY2011. It also provides for comprehensive sustainability efforts to continue transitioning maintenance of completed upgrades to Russia. Under the FY2011 budget request, the INMP&C program also would expand nuclear security cooperation to new partner countries outside of Russia and states of the former Soviet Union, in order to meet the Administration's global nuclear security agenda.

Toward a World Without Nuclear Weapons

The President has acknowledged that the goal of a world without nuclear weapons will not be reached quickly, but he stated that America will take concrete steps toward this goal. Our Nonproliferation and International Security (NIS) program is engaged actively in these efforts, including the support we provided for negotiating the new START treaty with the Russian Federation and supporting efforts towards ratification of the Comprehensive Nuclear Test Ban Treaty (CTBT). In FY2011, NIS will build upon these current efforts by continuing to provide policy and technical support for nonproliferation and arms control treaties and agreements that strengthen the nonproliferation regime and promote transparent WMD reductions. In addition, NIS also will continue to develop and deploy transparency measures to ensure verifiable nuclear reductions and compliance with nonproliferation and arms control agreements. This includes work that benefits from support provided by the Nonproliferation and Verification Research & Development (R&D) program, to develop technologies that detect potential clandestine weapons programs or illicit diversions and provide options for the dismantlement of nuclear equipment, weapons, and components, and develop new monitoring tools to ensure that the obligations of foreign governments are being met. Particular emphasis will be placed on the development of scientifically sound verification approaches that meet the President's goal of an effectively verifiable Fissile Material Cut-Off Treaty (FMCT) while protecting critical national security equities.

Investments in NNSA's R&D program provide the core U.S. capability for advances in both U.S. and international capabilities to monitor arms control and nuclear-related treaty obligations, such as those conferred by the NPT, the FMCT, and the CTBT. The R&D program contribution includes research, development, production, and delivery of space- and ground-based sensors to detect nuclear detonations. Additionally, this program leads the nonproliferation community's R&D effort to advance next generation detection capabilities to detect foreign nuclear materials and weapons production facilities and processes. In keeping with the President's commitment for verifiable treaties, in FY2011 the R&D program will include test and evaluation activities to demonstrate new U.S. treaty monitoring technologies and capabilities.

Our Fissile Material Disposition (FMD) program is also a crucial component of the Defense Nuclear Nonproliferation contribution to the Administration's nonproliferation and arms control agenda, through its mission to eliminate surplus U.S. highly enriched uranium and U.S. and Russian surplus weapon-grade plutonium. Of the funds requested for FMD, 87 percent is for efforts to irreversibly dispose of surplus U.S. weapon-grade plutonium. The largest part of this involves the construction of the Mixed Oxide Fuel Fabrication Facility (MFFF) in Aiken, South Carolina, which has been underway for over two years and is on schedule and within budget. The MFFF is scheduled to start operations to produce MOX fuel in 2016. Overall, the MOX project is 42 percent complete with two significant buildings (the 57,000 square foot Administration Building and the 38,000 square foot Secured Warehouse) completed in 2009, for a total of 10 out of 17 auxiliary buildings completed to date. The Waste Solidification Building (WSB) is scheduled to begin operations in 2013 to support MFFF cold start-up testing. Overall, the WSB project is 34 percent complete.

In addition to constructing the MOX Facility and the Waste Solidification Building, the Department of Energy is exploring combining NNSA's Pit Disassembly and Conversion Project and the Office of Environmental Management's Plutonium Preparation Project into a single project, to be managed by NNSA and located in the existing K-Area Facility at the Savannah River Site. As a result, the President's FY 2011 Budget Request supports realigning funding and management of interrelated surplus U.S. plutonium disposition activities under a single appropriation within the Defense Nuclear Nonproliferation appropriation. Complying with the Department's project management order, DOE Order 413, FMD will develop a conceptual design report, along with the requisite project support documentation to move toward a Critical Decision 1 (approval of alternative selection and cost range) determination. This preparatory work prior to alternative selection will be completed approximately 12-18 months from the start of such work.

In addition to progress on U.S. fissile materials disposition, FMD has also made much progress on disposition of Russian surplus weapon-grade plutonium. In 2009, the United States and Russia completed negotiations on a Protocol to amend the 2000 Plutonium Management and Disposition Agreement (PMDA), and on April 13, 2010 the Protocol was signed by Secretary of State Clinton and Russian Minister of Foreign Affairs Lavrov. Under the PMDA, each country commits to dispose of no less than 34 metric tons each of surplus weapon-grade plutonium – enough material for approximately 17,000 nuclear weapons. The amended PMDA reflects both Russia's revised plan for disposing of its 34 metric tons of surplus weapon-grade plutonium using fast reactors under certain nonproliferation conditions and Russia's commitment to implement its program independent of any assistance beyond the $400 million U.S. financial contribution. The Protocol calls for both countries to begin disposing of their surplus plutonium in the 2018 timeframe. The FY 2011 Russian Fissile Materials Disposition Request seeks $100 million of the total $400 million commitment to support plutonium disposition in Russia, with the balance of the more than $2 billion in estimated remaining costs to be borne by Russia.

Breaking up Black Markets and Halting Nuclear Smuggling

As a complement to our facility-based physical security efforts that serve as a first line of defense, NNSA executes a number of programs that provide an additional layer of defense by detecting and preventing illicit transfers of nuclear-related materials, equipment, and technology. These programs help implement the President's Prague speech call to build on efforts to break up nuclear black markets and detect and intercept dangerous materials in transit.

Within the Office of International Nuclear Materials Protection and Cooperation, the Second Line of Defense (SLD) Core program cooperates with foreign partners to install radiation detection equipment at borders, airports, and strategic ports in Russia, other former Soviet Union states, Eastern Europe, and other key countries, and to provide related training and support. The Core program is also teaming with foreign law enforcement agencies to provide equipment, develop training, conduct exercises, and exchange best practices in mobile detection. The SLD Megaports Initiative likewise cooperates internationally to deploy radiation detection equipment and provide related training to key, high volume and/or strategically located ports. The FY2011 budget request provides for SLD installations at an additional 55 sites in 19 foreign countries, and for the completion of Megaports installations and activities at 4 additional foreign seaports.

The Office of Nonproliferation and International Security (NIS) supports efforts to halt illicit trafficking by strengthening global capacity to prevent the theft, diversion, and spread of nuclear materials, technologies, and expertise. Specifically, NIS is training international partners in export control, licensing, enforcement, interdiction, and physical protection of nuclear materials. These programs include the International Nonproliferation Export Control Program (INECP), which works with foreign country partners as well as domestic USG export enforcement agencies to strengthen national export control systems, practices, and awareness. Additionally, the Cooperative Border Security Program (CBSP), focusing on building overarching border security system capacity, works with foreign country partners to create training programs and shape analytical methods and tools so that states can deploy sustainable capabilities to protect their borders. NIS also provides specialized support to domestic licensing, enforcement, and interdiction agencies through such efforts as the Interdiction Technical Analysis Group (ITAG). ITAG supports Department of State-led interagency interdiction working groups that review potential proliferation activity and transactions in the nuclear, missile, and chemical and biological fields, by providing technical analysis of proliferation-relevant commodities and technologies through reachback to the National Laboratories. The FY2011 budget request supports the continuation of these efforts. Finally, the FY2011 budget request increase for the Nonproliferation and Verification R&D program will advance development, testing, and evaluation of next generation capabilities to detect the illicit diversion of special nuclear materials, both internal and external to nuclear facilities.

Strengthening the Nuclear Nonproliferation Treaty

President Obama has also called upon America and its partners to strengthen the Nuclear Nonproliferation Treaty (NPT) as a basis for cooperation. The Office of Nonproliferation and International Security (NIS) will continue efforts to strengthen nonproliferation regimes and multilateral organizations, by providing international policy expertise and technical responses to address issues concerning the control of proliferation-sensitive items, in order to help shape

nonproliferation policy initiatives both domestically and multilaterally. NIS will also help develop a new international civil nuclear framework to further the President's energy security and environmental goals without jeopardizing national security. NIS will work within existing regimes and arrangements, including via peaceful nuclear cooperation agreements and the Nuclear Nonproliferation Treaty review process, among others, to help develop and advance this new framework.

In FY2011, NIS also will work to strengthen and support the International Atomic Energy Agency (IAEA) — and the international safeguards system it administers — to confront the challenges posed by nuclear proliferation and global nuclear energy expansion. NIS will continue to implement the Next Generation Safeguards Initiative (NGSI), which is working to revitalize the U.S. technical and human capital base supporting International Atomic Energy Agency (IAEA) safeguards, and to develop the tools, approaches, and authorities needed by the IAEA to fulfill its mandate far into the future. This includes developing and implementing new safeguards concepts and approaches, and working with partners to develop nuclear infrastructure in countries pursuing nuclear energy programs that emphasizes safeguards, security, and nonproliferation obligations. NIS also will implement IAEA safeguards, including the Additional Protocol, at DOE facilities and continue to engage industry and the IAEA to incorporate safeguards requirements early-on in the facility design and construction phases. Additionally, NIS will continue bilateral safeguards partnerships to develop new safeguards approaches, help states implement their NPT safeguards obligations, and facilitate the nuclear safeguards and security infrastructures required for new countries to access the peaceful benefits of clean nuclear energy.

Cross-Cutting Priorities

Integrated across these four broad categories of effort, the Defense Nuclear Nonproliferation program is also implementing over-arching Administration and NNSA priorities, including:

- Strengthening the nation's Science and Technology (S&T) base;
- Reinvigorating America's scientific and technical human capital; and
- Upholding our strong commitment to effective project management.

Increases in our FY 2011 budget request directly support Presidential and NNSA priorities to strengthen the nation's Science and Technology base. The increase in the Nonproliferation and Verification R&D budget by $34 million, or 10 percent, for example, will expand the program's basic and applied research for nonproliferation and national security applications and fund new technical capabilities to meet the President's nonproliferation and arms control treaty monitoring objectives. The R&D program remains the nation's largest long-term basic R&D program in this area and supports not only NNSA customers but also the Departments of Defense, State, Homeland Security, and the Intelligence Community.

As Administrator D'Agostino noted in his testimony last week, NNSA is working to develop and retain the next generation of scientists, engineers, and technical experts required to meet our critical mission. For example, through our Next Generation Safeguards Initiative, we will

significantly develop human capital within the DOE National Laboratories by supporting over 100 Next Generation Safeguards Initiative summer interns at the Laboratories, funding postdoctoral fellowships in international safeguards, and sponsoring six safeguards courses. In FY2011 and beyond, our R&D program will continue developing the next generation of nuclear engineers and scientific researchers through a $15 million per year, university-based program – the ten-year Integrated University Program. This program is coordinated with component efforts by the DOE Office of Nuclear Energy and the Nuclear Regulatory Commission.

To further develop scientific and technical human capital, the Office of Fissile Materials Disposition has co-sponsored (with DOE's Office of Environmental Management) several Regional Nuclear Suppliers Outreach events for American suppliers interested in providing services and products in the nuclear sector. At these events, U.S. companies are given insight into current and future markets for products and services. Additionally, they learn the requirements of the Nuclear Quality Assurance program applicable not only to DOE but to the commercial nuclear industry. This forum helps ensure that NNSA has an adequate number of qualified commercial suppliers, and helps more American companies become qualified to supply similar products and services to the commercial nuclear power industry. Currently, more than 1,800 people are employed by the project at Savannah River Site with more than 4,000 working on MOX-related activities in the United States.

As Administrator D'Agostino also noted last week, with the increased resources you provide us comes our increased responsibility to be effective stewards of taxpayers' money. The Defense Nuclear Nonproliferation program takes this responsibility seriously, and we implement the highest standards of project management practices to make our programs more efficient and more cost-effective. Our MOX Fuel Fabrication Facility effort is a good example. Despite their size and complexity, both the Mixed Oxide Fuel Fabrication Facility (MFFF) and Waste Solidification Building (WSB) projects are progressing on schedule and within budget in accordance with their approved cost and schedule baselines. Additionally, the MFFF project recently celebrated a milestone of three million work hours without a lost day of work due to injury.

As another effective project management element, we are increasing our cost-sharing efforts, not just as a matter of fiscal responsibility to the American public but as a force multiplier to address high-priority international nuclear security and nonproliferation objectives. Our cost-sharing partnerships include both monetary transactions and in-kind contributions, and additional Defense Nuclear Nonproliferation programs are incorporating cost-sharing as part of their revised program model and project management practices. With respect to monetary donations, to date, Defense Nuclear Nonproliferation has received approximately $60 million from seven overseas partners to execute our internationally-recognized nonproliferation work. However, our programs also utilize in-kind cost-sharing agreements. For example, under the Second Line of Defense Core Program, DOE/NNSA and Russia's Federal Customs Service have agreed to equip all of Russia's approximately 350 border crossings by 2011, and the costs for this effort will be split approximately evenly between DOE/NNSA and the Russian Federal Customs Service. The Second Line of Defense/Megaports Initiative has 12 cost-sharing arrangements in place for portal monitoring equipment installation and training. Under our Fissile Materials Disposition program, although the United States has committed to contribute $400 million in support of

plutonium disposition efforts in Russia, the Russia Federation bears responsibility for the approximately $2 billion remaining required to implement its plutonium disposition commitment. Additionally, over the past 10 years, the Russian Federation has provided over $30 million toward the cost of conducting research and development on the Gas Turbine-Modular Helium Reactor (GT-MHR) for plutonium disposition in Russia, and intends to continue to support that effort on a 50/50 cost sharing basis. As a final example, the Russian government has committed to provide $3 million to help remove the HEU spent fuel from the Vinca Institute in Serbia as part GTRI's fuel removal work

Since 1994, DOE/NNSA has spent approximately $2 billion on Russian nuclear security work. Sustainability is the key to ensuring that these national security investments continue to be utilized to their full potential. We continue to stress to our Russian partners the importance of sustaining these systems, including the eventual need for Russia to take the full financial responsibility for sustaining completed nuclear security enhancements. To this end, the INMPC&A program recently reached agreement with Russia's Rosatom on a Joint Sustainability and Transition Plan. This plan identifies specific timelines for each site to take over financial responsibility for sustainability related activities in Organizational Planning, Human Resource Development, Regulatory Development, Operational Cost Analysis, Maintenance, Performance Testing, and Configuration Management. We believe that such sustainability efforts, combined with the other project management practices referenced, will return the maximum benefit to the American public for their investment in global security and America's national security.

Conclusion

In conclusion, I am proud of NNSA's nonproliferation accomplishments to date. The FY2011 Budget Request for Defense Nuclear Nonproliferation builds upon a strong foundation of past achievements that will help us reap genuine security dividends from our nonproliferation efforts in the future. We have a narrow window of opportunity here and now, making use of fleeting global momentum on nonproliferation already underway, to renew our commitment to nonproliferation and nuclear security. Although the challenges to nuclear security are many, the potential benefit from expanded and accelerated international cooperation to address these challenges is enormous. Together with our interagency and international partners, through *concerted* action, and the continued support of the Congress and the American people, we can reach this shared goal. I thank the Chairman and the Committee for your time.

Defense Nuclear Nonproliferation

Funding Profile by Subprogram

(dollars in thousands)

	FY 2009 Actual Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Defense Nuclear Nonproliferation			
Nonproliferation and Verification Research and Development	356,281	317,300	351,568
Nonproliferation and International Security	150,000	187,202	155,930
International Nuclear Materials Protection and Cooperation	460,592 [a]	572,050	590,118
Elimination of Weapons-Grade Plutonium Production	141,299	24,507	0
Fissile Materials Disposition	41,774	701,900	1,030,713
Global Threat Reduction Initiative	404,640 [b]	333,500	558,838
Congressional Directed Projects	1,903	250	0
Subtotal, Defense Nuclear Nonproliferation	**1,556,489**	**2,136,709**	**2,687,167**
Use of Prior Year Balances	-11,418	0	0
Total, Defense Nuclear Nonproliferation	**1,545,071**	**2,136,709**	**2,687,167**

NOTES: FY 2009 funds appropriated in Other Defense Activities for the Mixed Oxide Fuel Fabrication Facility, and in Weapons Activities for the Waste Solidification Building and Pit Disassembly and Conversion Facility (FY 2009 and FY 2010) are not reflected in the above table.