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Thank you Mr. Chairman, Ranking Member Levin and other distinguished members of the Subcommittee. I am pleased to appear before you today to share the progress we have made under the Second Line of Defense (SLD) program to deploy radiation detection equipment at strategic international locations.

I am the Assistant Deputy Administrator for the National Nuclear Security Administration's (NNSA) Office of International Material Protection and Cooperation (IMPC). My office is one of six program offices within the Office of Defense Nuclear Nonproliferation (DNN). The collective mission of DNN is to detect, prevent, and reverse the proliferation of weapons of mass destruction. Our programs are structured in support of multiple layers of defense against nuclear terrorism and state-sponsored nuclear proliferation. This multi-layered approach is intended to identify and address potential vulnerabilities within the international nonproliferation regime, to limit terrorists' access to deadly weapons and material, and to prevent the illicit trafficking of dangerous materials that could be used in a nuclear or radiological weapon.

For the last decade and a half we have focused on securing nuclear materials and weapons at well over one hundred research, storage and manufacturing facilities in Russia and other states of the Former Soviet Union. Our longstanding nonproliferation programs in international safeguards and export controls have existed for more than thirty years, but the dramatic increase in our efforts to secure nuclear material took place in the years following the demise of the Soviet Union. This focus on securing nuclear weapons and materials is the first line of defense in our strategy to deny

terrorists access to the essential element of a nuclear weapon, fissile material. We are scheduled to complete nuclear security upgrades at all facilities by the end of 2008. The Second Line of Defense Program is a natural complement to these activities and supports the multi-layered defense system to protect the U.S. homeland from attack by a nuclear or radiological dispersal device. All of our efforts are centered on the premise that confronting the threat of nuclear terrorism as close to the source of the threat as possible, far from our borders, is the most effective means to reduce the risk of an attack.

I'd like to make a few points on the nuclear smuggling threat. As the director of several US programs to secure nuclear materials abroad, I have some insight into the threat of material diversion from nuclear facilities - the first step in the nuclear smuggling chain.

Our security assistance programs abroad dramatically reduce the risk of nuclear material theft. However, every security system ultimately depends on the people operating it - the so-called "human factor". Motivated by greed, coercion, or debt, facility insiders may successfully divert nuclear materials. This problem is compounded by the large number of nuclear facilities out there - each presenting a unique opportunity for material diversion. Established crime groups are operating on the periphery of many of these facilities. These groups are often engaged in smuggling a variety of goods. If a single nuclear smuggling network materializes and operates successfully, even for a short period, a “goal quantity” of nuclear material may reach our enemies. There is only one way to combat a threat this diverse and complex - a redundant and layered defense. I can't emphasize enough how important this is. If human error or corruption enables smugglers to bypass one layer, our only hope is to catch them at the next.

While the body of verified nuclear smuggling cases is studied intensely inside and outside government, we must continuously remind ourselves of how much we don't know. We don't know how many networks have operated successfully, or how many are operating now. As stewards of U.S. national security in this regard, we have to assume there are groups colluding to smuggle these materials today - and aggressively pursue every opportunity to disrupt them, before they become nuclear material "pipelines" to our enemies. The consequences of failure are just too great to do otherwise.

The Second Line of Defense Program accomplishes its goals to deter, detect, and interdict illicit trafficking of nuclear and radiological material across international borders by partnering with host countries throughout the world. We provide detection equipment, training, and system maintenance and repair support to the host country. The Program closely coordinates these international efforts with other U.S. Government Agencies such as the Departments of State, Defense, and Homeland Security.

The SLD Program has two main components: the Core Program and the Megaports Initiative. The Core Program plans to deploy radiation detection systems at approximately 350 land border crossings, airports, and feeder ports in Russia and other countries of the former Soviet States, Eastern Europe, the Mediterranean region and other key countries. Under our Megaports Initiative, NNSA plans to equip approximately 70 major international seaports with radiation detection equipment to scan cargo containers for nuclear and other radiological materials.

PROGRESS IN SLD CORE PROGRAM

The SLD Core program has been working cooperatively with the Federal Customs Service of the Russian Federation since 1998, to secure Russian points of entry and exit against the nuclear smuggling threat. Of the estimated 350 international points of entry in the Russian Federation, NNSA has provided radiation detection systems at 78 of the 120 planned border crossings, airports and seaports. Our Russian Customs partners have installed monitors at approximately 120 additional sites and will fund installations at the remaining 110 sites.

But installation of systems alone does not fully address the challenge of nuclear smuggling. If the systems are not maintained and if personnel are not properly trained to use them, our efforts are largely in vain. In April of 2005 NNSA and Russian Customs signed an agreement to document our mutual commitment to ensuring the long term maintenance and sustainability of the radiation detection systems deployed in Russia. The agreement primarily provides for the training of Russian Customs officials and periodic maintenance of equipment. NNSA and Russian Customs have demonstrated our commitment to this issue with the recent award of two contracts, one by NNSA and one by Russian Customs, to provide for the repair, periodic maintenance and calibration of all equipment that is currently installed. In the area of training, the SLD Program has worked

closely with Russian Customs over the past several years to develop and institutionalize within the Customs Academies a comprehensive training program, to include development of curricula, text books, training materials and simulators, which have been used to train over 500 Customs nuclear and radiological material specialists. In addition, over 1,000 first line responders (i.e., the officials who actually respond to the alarm and detain the vehicle or person) have also been trained. In 2005, SLD supported and observed a Russian interagency interdiction exercise held in Vladivostok to evaluate the ability of trained FCS personnel to successfully respond to illicit trafficking of nuclear and radioactive materials passing through a Customs site and to test the Russian interagency response system. We were pleased to see an effective system in operation.

Our cooperative work in Russia remains one of our top priorities, but we realize that deployment of radiation detection systems and the training and technical support necessary to effectively operate them is needed not just in Russia, but also along potential smuggling pathways in additional countries. Since the data set on nuclear smuggling is limited, it cannot be the sole source for determinations of trends and tactics in SNM smuggling. Therefore our prioritization activities also consider data from government and outside sources, commissioned studies, discussions with host countries, and SLD developed computer modeling. As a result of this comprehensive analysis, SLD separated countries of interest into four prioritized groups with Russia remaining our highest priority.

As a result of these our prioritization efforts, and in coordination with the Departments of State and other agencies, we have expanded the SLD program beyond Russia and are now actively installing or have installed equipment in other countries throughout the FSU and Eastern Europe, including Ukraine, Georgia, Azerbaijan, Kyrgyzstan, Slovenia, Greece and Lithuania. In total, we have identified approximately 230 sites in 29 countries outside of Russia where we believe that the installation of radiation detection systems should reduce the risk of nuclear smuggling. Based on current planning, we anticipate that we will complete installations at 225 sites within the countries in the two highest priority groups by the end of FY 2009, with the remaining installations completed by the end of FY 2013.

MAINTENANCE PROGRAM

In 2002, in accordance with the recommendation of the Government Accountability Office, the NNSA assumed responsibility for maintaining radiation detection equipment, and x-ray vans provided by other US government agencies between 1992-2002 in 23 former Soviet Republics and Central European countries. In addition to providing maintenance and repair services for the monitors and x-ray vans, the SLD program also provides maintenance support for the handheld detection equipment distributed to support the fixed portal monitors. Of these 23 countries, eleven received radiation detection portal monitors and the remainder received x-ray vans. The monitors deployed by these other agencies are of the single channel variety that can only detect gamma radiation, reducing their effectiveness against some types of materials of concern. We are in the process of upgrading these portal monitors with more effective dual-channel equipment. In many instances, we will replace this equipment as part of the implementation of the comprehensive SLD program in the country. We plan in to complete upgrades of the monitors by the end of 2007. In accordance with the Government Accountability Office's 2002 recommendation to consolidate maintenance activities within DOE, the SLD program will additionally assume responsibility for the maintenance and sustainability of the radiation detection equipment deployed in Uzbekistan by Department of Defense and Armenia by the Department of State.

GAO REPORT

Now that I have given you a brief background of the NNSA/SLD Core Program and its technical capabilities and interagency relationships, I would like to address some issues about the program raised by the Government Accountability Office (GAO). The recent GAO report entitled "Combating Nuclear Smuggling" addressed the Core Program and pointed out two main areas of concern. One is combating corruption from within the countries where we deploy nuclear detection equipment and the other is the replacement and upgrade of the older equipment previously installed by others. The SLD Program is specifically structured to address both of these issues.

With regard to the potential corruption of host country operators, we seek to address this challenge by ensuring that all radiation portal monitors deployed under comprehensive SLD installations be networked to at least one central alarm station. The associated communications software requires reporting by a host country operator on the cause of an alarm and a summary of the actions taken in response to the alarm. Installations and operations are structured so that more than one person will be involved in reviewing and closing an alarm, thus making it more difficult for a corrupt official to bypass the system. Additionally, to protect against corruption at a single site, the SLD strategy calls for the placement of monitors on both sides of the border at certain high priority locations resulting in redundant layers of detection in different countries. We are also developing the means to send status of health, alarm and other data to central locations within the host country for further in-depth review and technical assistance. Such a system is being deployed in Greece and will soon be available in Russia. Based on these experiences, the Program plans to deploy these systems more widely taking into account country specific factors, such as communications infrastructure and host nation capabilities.

As to upgrading the less sophisticated portal monitors previously installed by other US agencies, as I stated previously, by the end of FY 2007, NNSA intends to replace all single monitors with dual channel equipment as part of our comprehensive SLD Core strategy. Upgraded handheld detection equipment for secondary inspections will also be provided. The majority of these older monitors are currently being replaced as part of the comprehensive country-wide installations underway in Ukraine, Slovenia, Georgia and Azerbaijan. In lower priority countries, where SLD is not scheduled to work for several years, monitors will be replaced if they are in active locations and being put to effective use by the host countries. Broader communication systems and training will be provided later when we engage in comprehensive country-wide activities.

Accelerating the Megaports Initiative

In order to complement our security efforts in U.S. ports we established the Megaports Initiative in 2003 to provide early detection of possible illicit trafficking of nuclear materials before they enter our territory. Under the Megaports program, NNSA installs radiation detection systems at foreign ports to enhance the detection and interdiction capabilities of the customs

authorities within our partner countries. The program is designed to provide the capacity to screen import, export and as much transshipped containerized cargo as possible, while posing minimal impact on seaport operations. This initiative provides an added layer of defense against the threat of dangerous material reaching our shores, but does not eliminate the crucial role played by U.S. Customs officials, both in foreign ports and here at home.

The primary mission of the Megaports program is to prevent terrorists from successfully moving these dangerous materials through a major foreign port facility for use in an attack against the United States or our partners. In recognition of the fact that in today's globalized economy a nuclear or radiological incident at one port could adversely impact nearly every major economy, the Megaports program serves to enhance the security of the global maritime shipping system and protect global economic stability.

I would like to take a few minutes to provide you with an update on our progress in the implementation of this important initiative. We have made steady progress in implementing this international port security program since the inception of the Megaports Initiative in 2003. We have identified approximately 70 ports of interest in 35 countries based on the volume of containers coming to the U.S. from these ports and also considering regional threat. The Megaports program is currently operational in Greece, the Bahamas, Sri Lanka and the Netherlands and will be fully operational in Spain in the Spring of 2006. We are at various stages of design and construction in nine additional countries: Belgium, China, the U.A.E., Honduras, Israel, Oman, the Philippines, Singapore and Thailand. Finally, we are aggressively pursuing agreements with many of the remaining 21 countries of interest.

As an integral element of the U.S. maritime security strategy, the Megaports Initiative complements the efforts of the Department of Homeland Security's (DHS) Container Security Initiative (CSI), the Customs-Trade Partnership Against Terrorism (C-TPAT), Coast Guard's International Port Security Program (IPSP) and the Department of State's Proliferation Security Initiative (PSI). We work in lock-step with the Department of Homeland Security's Bureau of Customs and Border Protection's (CBP) CSI program to ensure that our efforts are coordinated in those ports in which we are both working. We have signed a memorandum of understanding with CBP and have committed to install radiation detection equipment at all CSI ports. As our common goal is to prevent WMD from reaching U.S. ports, the

Megaports initiative reinforces CBP's targeting, screening and scanning processes by providing additional scanning capability for radioactive materials.

We will continue to work closely with our CBP and Domestic Nuclear Detection Office (DNDO) partners to identify opportunities to accelerate the implementation of the Megaports program. We share a common vision and work to ensure that our efforts fit cohesively together in support of a comprehensive global architecture.

Detection Equipment

The radiation detection equipment currently being deployed by NNSA under the SLD program is proven technology that was developed to ensure nuclear material security at DOE weapons sites. NNSA currently provides host country partners with an integrated suite of equipment, which includes radiation portal monitors that utilize plastic scintillators and Helium-3 tube technology to detect highly enriched uranium, plutonium, and other radioactive isotopes; computer and camera equipment to collect and transmit alarm information for analysis by host country Customs officials; and handheld equipment that can be used to conduct secondary inspections to isolate and identify radioactive sources within containers, vehicles, or on persons. The equipment that we deploy has been evaluated by our technical experts at the National Laboratories as well as at the Domestic Nuclear Defense Office's test facility in Nevada and has proven to be operationally effective and robust in harsh, and often remote, international environments.

Advancements in Detection Capabilities

That being said, we all recognize that there are limitations in its capabilities and that there is a need for next generation equipment that will identify both highly enriched uranium and plutonium with a high degree of efficiency and will also identify other radioactive isotopes that are either innocent or of lesser concern. We are closely tracking the efforts within the NNSA and DNDO research and development programs so that we may capitalize on advancements in detection capabilities. For example, we are working with DNDO to purchase a number of Advanced Spectroscopic Portals (ASP) as soon as the equipment has been sufficiently evaluated and is ready for deployment. The ASP is expected to enhance the ability of Customs officials to resolve alarms by providing a more sophisticated capability to

quickly identify the radioactive isotopes of concern. NNSA plans to use the ASPs at Megaports locations as secondary inspection tools as well as at rail border crossings when infrastructure and environment permit.

We have also initiated efforts to modify existing technologies to address transshipment scanning challenges in ports. For example, in the Port of Freeport in The Bahamas, we expect to be able to scan about 90 percent of the transshipped cargo using a straddle carrier vehicle outfitted with radiation detection equipment, including spectroscopic detection capabilities. This modified straddler can travel through rows of shipping containers in the stacks, a reverse of our normal deployment strategy based on permanent placement of the detection equipment and transit of the container through the portal. While this approach is not applicable at all ports, for those terminals that stack in a compatible configuration, this type of deployment provides an opportunity to maximize screening of transshipped containers. We are also considering other mobile configurations being developed by the private sector to address similar issues at other ports.

Finally, we continue to look to the future and eagerly await the development of even more revolutionary detection enhancements, such as the Cargo Advanced Automated Radiography System (CAARS) currently under development within DNDO. This advanced radiography system will provide better imaging in drive through capacities and is expected to improve our ability to identify shielded highly enriched uranium in containerized cargo.

Integrated Cargo Inspection

For the last two years we have worked closely with DHS/CBP to evaluate the effectiveness of the Integrated Container Inspection System (ICIS), which is being piloted in the Port of Hong Kong. We have closely observed its operation and held technical discussions regarding the system with the manufacturer's representatives both in Hong Kong and at their facilities in the U.S. and remain in close communication with the terminal operators. We are fully supportive of the private sector's willingness to take the initiative to enhance the security of the international maritime trade lanes and believe that private sector container screening is compatible with our Megaports mission.

Systems with capabilities being incorporated into the ICIS pilot would provide an x-ray or gamma-ray image that supplements radiation detection alarm profiles and would provide an additional piece of information to support evaluation and dispensation of radiation alarms. We are currently working with technical experts from DHS to analyze data from the ICIS system to gain a better understanding of the system's cost-benefit factor and how effectively the integration of these technologies may improve our ability to identify shielded highly enriched uranium and to dispense innocent alarms more quickly. If terminal operators decide to deploy systems like ICIS, which integrate radiation detection, visual imaging, and optical character recognition, we believe that the data collected for those containers that trigger radiation alarms could be extracted and analyzed before the container departs the port. In support of such efforts and the Megaports program, we are prepared to provide a combination of hardware and technical assistance in the form of radiation detection monitors, training and communications support to extract alarm data from the integrated systems and to provide it to the host country and CSI officials for evaluation.

The key to the successful incorporation of an integrated cargo inspection concept into the Megaports Initiative framework will be the agreement by the private terminal operators and host government officials that radiation alarms will be properly assessed and resolved prior to containers departing the port. The completion of agreements between the U.S. Department of Energy and the appropriate host government agency on data sharing for alarm evaluation and response will remain a critical element to the long-term success of this effort.

Partnership with DNDO

Because the SLD program provides a critical layer in the global nuclear detection architecture, NNSA and DNDO's cooperation in the campaign to reduce the threat of nuclear terrorism is crucial. We are working closely with DNDO to identify areas where the SLD program can make the external layer of the Global Architecture more robust, including the possibility of partnering with the private sector. Given that we are both involved in the deployment of radiation detection equipment, our offices routinely exchange programmatic and technical information and are working collaboratively to establish requirements for future systems. As I stated earlier, we expect DNDO's operational testing and evaluation of improvements in nuclear detection equipment will greatly benefit our international deployment

efforts. We also plan to take advantage of DNDO's procurement efforts and will seek to purchase ASP and upgraded hand-held detectors through their contract vehicles. I believe this is a mutually beneficial relationship and that we will continue to experience constructive exchanges with DNDO.

In closing, I would like to restate that the NNSA/SLD Program is dedicated to preventing the smuggling of nuclear and radiological material at international seaports, airports and land border crossings. We accomplish this goal by working closely with foreign governments and by maintaining strong relationships with other agencies and departments in the U.S. Government. We firmly believe that the unique capabilities of each Department and agency are being leveraged to accomplish our common objective of preventing nuclear material from reaching the shores of the United States.

Thank you. At this point, I would be happy to answer any questions.