Opening Statement

of

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Before the House Committee on Homeland Security

Subcommittee on Emerging Threats, Cybersecurity, and Science and Technology

The Domestic Nuclear Detection Office: Can It Overcome Past Problems and Chart a New Direction?

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Good afternoon Chairwoman Clarke, Ranking Member Lungren, and distinguished Members of the Subcommittee. As Director for the Department of Homeland Security's (DHS) Domestic Nuclear Detection Office (DNDO), I am here today to describe the work we have done at DNDO to reduce the risk of nuclear terrorism. We know that this mission is of critical importance to the Committee, as it is to the Department and the nation. As a result today's hearing, I hope that you will agree that DNDO's efforts are increasing our country's security. .

Domestic Nuclear Detection Office

On April 15, 2005, President Bush signed National Security Presidential Directive-43 and Homeland Security Presidential Directive-14 directing the Secretary of Homeland Security, in coordination with the Secretaries of State, Defense, and Energy, and the Attorney General, to establish a jointly-staffed, national-level Domestic Nuclear Detection Office (DNDO) within the Department. Subsequently, the SAFE Port Act of 2006 formally codified the DNDO and added a presidentially-appointed Director.

DNDO's mandate is to improve the nation's capability to detect and report unauthorized attempts to import, possess, store, develop, or transport nuclear or radiological material for use against the nation, and to further enhance this capability over time. With assistance and participation from a wide variety of U.S. government departments and agencies, DNDO synchronizes and integrates inter-agency efforts to develop technical nuclear detection capabilities, characterizes detector system performance, ensures effective response to detection alarms, integrates nuclear forensics efforts, coordinates the global detection architecture and conducts a transformational research and development program for advanced technology to detect nuclear and radiological materials.

I would like to take some time to discuss several of our high-profile programs, including the Advanced Spectroscopic Portal (ASP) program, the Cargo Advanced Automated Radiography System (CAARS) program, and the status of the overarching strategic plan for the Global Nuclear Detection Architecture (GNDA).

Advanced Spectroscopic Portal (ASP) Program

In 2005, DNDO embarked on an aggressive program to develop the next generation radiation portal monitor to address key detection gaps. The ASP program was one such effort; at that time, we set a schedule without sufficiently accounting for technical risk, which has caused a number of delays. We have accepted many of the Government Accountability Office's (GAO) recommendations and have substantially improved program management and oversight. Under the leadership of the Under Secretary of Management, the Department has developed Acquisition Directive 102-01, which gives us greater insight into all acquisition programs in the Department, and which we have leveraged to significantly improve the ASP program.

The ASP program is approaching a key decision milestone. DNDO and CBP are currently working together to resume field testing in October. Upon successful completion, DHS will finalize the cost-benefit analysis and proceed to the Acquisition Review Board (ARB). The ARB will make its recommendation to the Secretary on ASP certification. We continue to

believe that if certification is realized, the ASP deployment will enhance DHS' capabilities at the border to counter nuclear threats without impeding the flow of commerce.

It is important to note that we will seek certification for the ASP in secondary scanning only. While ASP serving in primary scanning was once considered, ASP's demonstrated performance to date and DNDO's preliminary cost-benefit analysis suggest ASP would be best utilized in secondary scanning.

Cargo Advanced Automated Radiography System

To complement passive detection systems, DNDO also embarked on an ambitious program to develop advanced radiography systems. The CAARS program sought to develop and demonstrate non-intrusive inspection technology that could automatically identify dense materials used to shield special nuclear and threat materials in cargo. In 2007, DNDO recognized that the CAARS technology was not as mature as originally anticipated. Accordingly, DNDO scaled the program back from an acquisition program to a research and development program. The CAARS program is now designed to demonstrate the potential future capability of the technology through the development and evaluation of prototype systems.

The CAARS research and development program has nearly reached its conclusion. While it will not continue, a decision regarding the future direction of the relevant technology is pending the CAARS final report, expected later this year. DNDO will use technologies developed in the program to advance other research and development efforts and will continue to test commercially available non-intrusive imaging systems. Development of improved algorithms to address shielded nuclear material will also continue as part of DNDO's Advanced Cargo Imaging program. Additional work to build upon what we have learned from the CAARS technology will be included in DNDO and CBP's participation in the DHS Science and Technology Directorate's CanScan program.

GNDA Strategic Plan

One of DNDO's core mandates is to develop a Global Nuclear Detection Architecture (GNDA). The GNDA is a risk-informed, multilayered network to detect illicit radiological and nuclear materials or weapons. This involves interagency and DNDO efforts for the development and deployment of effective detection solutions within the U.S. and abroad, maintaining situational awareness, working collaboratively and integrating with the Intelligence Community, and sharing critical information related to detection.

GAO has highlighted, and Congress has reinforced, that the GNDA should have a strategic plan to guide its implementation. We agree and are working with other DHS components to rapidly complete a strategic plan for the GNDA, with an interagency Assistant Secretary-level committee providing guidance and oversight. The GNDA Strategic Plan will be the first important step to define and form the GNDA in the future, and will include a description, a vision statement, and time-phased goals, objectives, and performance metrics. The strategic plan will articulate what the GNDA must accomplish and outline its development and implementation.

DNDO will complement the GNDA strategic plan with a revised GNDA annual review report on the Joint Interagency Review of the GNDA, as required by Congress, which will provide a means to document and track progress to assist DNDO and the interagency in developing and refining the GNDA. The GNDA strategic plan and annual report will be jointly produced and agreed upon by the interagency, enabling a coordinated implementation of the GNDA.

DNDO Progress

While they are some of the most discussed aspects of our work, ASP, CAARS, and the GNDA strategic plan do not define DNDO. Under its mandate to develop a GNDA and implement the domestic nuclear detection architecture, DNDO has created programs supporting federal, state, and local agencies and foreign governments within its core competence of nuclear detection. At our borders, DNDO works with CBP to deploy nuclear detection technologies at ports of entry and for the Border Patrol. Working with our partners, DNDO has executed pilot programs to evaluate nuclear detection equipment and operations in maritime and aviation environments. Furthermore, DNDO has produced a world-class development and testing program for radiation detection systems and has become a coordinating entity for U.S. government technical nuclear forensics efforts. We have made progress in implementing and supporting the GNDA as follows.

Interior

Building upon the layered structure of the GNDA, DNDO works within the nation's borders to develop radiological and nuclear detection capabilities for urban areas, internal transportation vectors, special events, and other state and local venues. DNDO works regularly with Federal, state, local, and tribal entities to integrate nuclear detection capabilities in support of the GNDA. Our "Securing the Cities" (STC) initiative, piloted in the New York City (NYC) region, has brought together law enforcement and first responders to design and implement a layered architecture for coordinated and integrated detection and interdiction of illicit nuclear and radiological materials.

STC involves 13 state and local partners, who represent over 150 jurisdictions in the New York City region, as well as the Department of Energy, FBI and the Nuclear Regulatory Commission. The STC pilot program provides assistance to state and local jurisdictions, which enable these entities to build and sustain capabilities by: leveraging current technologies and deploying them regionally in a coordinated manner; designing, acquiring, and deploying the components of an operationally viable regional architecture for radiological/nuclear detection focused on state and local jurisdictions; developing and implementing a common, multi-agency concept of operations (CONOPS) for sharing sensor data and resolving alarms; and instituting training and exercising by the regional agencies to execute the CONOPS at a high level of proficiency. Once capabilities are developed, DNDO will assist regional partners in building a self-supported sustainment model allowing for real-time sharing of data from fixed, mobile, maritime, and human portable radiation detection systems. DNDO plans to evaluate the STC pilot initiative in FY 2011 to assess the detection capability established in the New York City region and extract the lessons learned from the pilot. DNDO will continue to support the NYC region with experienced program management and subject matter experts in radiological and

nuclear detection technologies and operations, and we will be actively supporting a regional full scale exercise in 2011.

Within the United States, DNDO works with the Transportation Security Administration's (TSA) Visible Intermodal Prevention and Response (VIPR) teams to enhance security on aviation, rail, mass transit systems, and maritime venues nationwide. VIPR teams have augmented security at key transportation facilities in urban areas around the country and work with local security and law enforcement officials to supplement existing security resources, provide detection capabilities and a deterrent presence, and introduce an element of unpredictability to deter and disrupt potential terrorist activities. Currently, all VIPR teams are equipped with human portable radiological and nuclear detection systems. Through September 22, 2010, TSA has conducted 1,219 VIPR operations that have utilized radiological and nuclear detection equipment.

DNDO's outreach also includes a State and Local Stakeholder Working Group with 25 states and territories meeting quarterly to bring the Nation's radiological and nuclear detection community together, inform participants on activities within DNDO and the community, and obtain feedback on DNDO's programs and initiatives. DNDO has conducted nationwide radiological and nuclear detection situational awareness briefings with 52 Urban Area Security Initiative (UASI) regions and metropolitan region emergency responder and law enforcement agencies.

DNDO has also created a Preventive Radiological and Nuclear Detection Program Management Handbook created for state and local authorities, which provides consistent guidance for building or enhancing state and local radiological and nuclear detection programs. Together with our federal partners, DNDO provides technical input, review, evaluation and developmental improvement to the preventive radiological and nuclear detection training curriculum. Since 2005, DNDO has facilitated the training of more than 15,000 law enforcement officers and public safety professionals in radiological and nuclear detection operations.

Providing support to the operators of radiological and nuclear detection equipment is critical to an effective architecture for detection. The DNDO Joint Analysis Center (JAC) is an interagency coordination and reporting mechanism and central monitoring point for the GNDA. The JAC coordinates adjudication of nuclear detection events, analyzes intelligence and sensor information, and facilitates technical support for Federal, state, and local authorities. JAC staff partner with the DHS Office of Intelligence and Analysis to produce relevant intelligence-based analytical products, and develop linkages to state and local fusion centers for information sharing.

Ports of Entry

The U.S. border is a key point at which where the United States has full control over detection and interdiction. DHS has made a considerable effort at the border to provide comprehensive radiation detection capabilities with an initial majority of resources concentrated at ports of entry. DHS has focused on these authorized pathways at ports of entry, underscored by the SAFE Port Act's requirement that "all containers entering the United States through the

22 ports through which the greatest volume of containers enter the United States by vessel shall be scanned for radiation." A key consideration is the need to effectively detect threats without impeding the flow of commerce across the border. In 2005, when DNDO was first established, there were a total of 552 radiation portal monitors (RPMs) at our land and seaports of entry. As of this July, there are a total of 1,426 RPMs. Our ongoing work with CBP to facilitate container security has resulted in the scanning of over 99 percent of all incoming containerized cargo for radiological and nuclear threats at our land and seaports of entry. As this work has matured over the last few years, DNDO has shifted its workforce to place a greater emphasis on our land borders between ports of entry, maritime, air, and the interior.

Non-POE Land Border

DNDO has been working on a cooperative effort with the CBP Office of Border Patrol (OBP) to develop a strategy for deploying a radiological and nuclear detection capability that is focused on those areas between the official ports of entry along our land borders. Under the Phased Deployment Implementation Plan, DNDO and OBP have evaluated selected radiation detection equipment and their concept of operations. Indeed, the very presence of BP Officers on the border, performing their duties with regard to enforcing immigration laws and preventing smuggling, is a significant defense and deterrent against nuclear smuggling whether or not they carry radiation detectors. This is an example of how the normal activities of the Department contribute to the prevention of nuclear terrorism.

Maritime

In the maritime environment, DNDO has worked closely with the United States Coast Guard (USCG) and CBP Office of Air and Marine (OAM) to provide radiological and nuclear detection capabilities. Through the USCG Joint Acquisition Strategy, DNDO has equipped and trained USCG boarding teams with detection technologies, and budgeted funds to recapitalize existing USCG equipment and to acquire newly developed systems. DNDO has also trained CBP OAM boarding teams and worked to develop, acquire, and recapitalize CBP equipment.

DNDO has also established the West Coast Maritime Pilot (WCMP) to work with authorities in Washington's Puget Sound and the San Diego area to design, field, and evaluate a radiological and nuclear detection architecture (specific to each region) that reduces the risk of radiological and nuclear threats that could be illicitly transported on recreational craft or small commercial vessels. The project develops radiological and nuclear detection capabilities for public safety forces to use during routine public safety and maritime enforcement operations. One immediately recognizable lesson learned of the WCMP is the value of the Maritime Transportation Security Act creation of Area Maritime Security Committees (AMSC). WCMP efforts were coordinated through the respective AMSC in the region, both of which established subcommittees for the preventive radiological and nuclear detection mission.

DNDO continues to work with federal, state, local, and tribal participants in support of the WCMP efforts. CBP OAM and USCG will continue to determine the best methodology for screening vessels based on resources, geographic considerations, and security levels. The lessons learned from the WCMP, particularly with regard to maritime chokepoint operations, will inform and improve standard operating procedures.

In addition to this pilot, we have tested boat-mounted detection systems. Results of the FY 2008 "Crawdad" Maritime test campaign and early deployments of selected systems in the West Coast Maritime Pilot in Puget Sound will shape the identification of an effective boat mounted radiation detection system. DNDO also conducted the Dolphin Test Campaign to characterize several commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) systems in the spring of this year and is analyzing the results. If we can demonstrate that operational and technical requirements of the maritime mission area can be met by COTS/GOTS boat-mounted systems, they may be incorporated into DHS acquisition programs. If not, DNDO will launch a program to develop and test a prototype system that is both effective and suitable for this mission.

Aviation

DNDO has similarly expanded efforts to secure the air pathway – both commercial and general aviation. To address radiological and nuclear threats in aviation, DNDO is working with CBP to enhance capabilities to detect and interdict illicit radiological and nuclear weapons or materials entering the U.S. via international general aviation. These efforts have included a test campaign with CBP officers at Andrews Air Force Base in 2008 that analyzed CBP's radiological scanning capability and identified methods to improve effectiveness by enhancing equipment and operational techniques. As a result of these efforts, 100 percent of international general aviation flights are scanned for radiological and nuclear materials by CBP upon arrival in the United States. Also in partnership with CBP, DNDO has developed a pilot to detect and interdict illicit radiological and nuclear weapons or materials entering the United States via the commercial aviation pathway. The Pax/Bag (passenger/baggage) Pilot was conducted during FY 2010 at the Seattle/Tacoma and Charlotte airports to evaluate radiological and nuclear scanning capability for passengers and baggage entering into the commercial airport environment from overseas. The results of the pilot program will inform future deployment strategies for airports and will provide input for research and development efforts to optimize radiological and nuclear scanning of passengers and their baggage in the airport environment.

Additional architecture studies will examine the aviation environment holistically – looking simultaneously across multiple aviation operations such as movement of passengers, baggage, cargo, and the aircraft themselves. As with other domains, the application of random, agile and mobile solutions will create uncertainty in the adversary across the various aviation operations. This approach will also incorporate the detection and deterrence benefits provided by non-radiological and nuclear security measures already in place, such as scanning checked luggage with automated explosive detection machines. This holistic approach examines the intersection of multiple aviation pathways, including the commonality of systems and processes that can be leveraged and shared.

Testing

DNDO has also established the U.S. government's premier radiological and nuclear detection system test and evaluation organization. DNDO has conducted 48 separate test and evaluation campaigns at more than 20 experimental and operational venues. These test campaigns were planned and executed using rigorous, reproducible, and peer-reviewed

processes. Tested detection systems include pagers, handhelds, portals, backpacks, mobiles, boat- and spreader bar-mounted detectors, and next-generation radiography technologies. The results from DNDO's test campaigns have informed federal, state, local, and tribal operational users on the technical and operational performance of radiological and nuclear detection systems to help select the most suitable equipment and effective CONOPs as we work to keep the nation safe from nuclear terrorist threats.

DNDO constructed and operates the state-of-the-art Radiological and Nuclear Countermeasures Test and Evaluation Complex (RNCTEC) at the Nevada National Security Site (N2S2) to allow testing against significant threat quantities of special nuclear material. Further, DNDO established the Rail Test Center (RTC) at the Port of Tacoma in Washington State to conduct testing in an operational port environment. DNDO's testing expertise and experience is sought by interagency partners, such as the Departments of Energy and Defense, and international partners such as the United Kingdom, Canada, Israel, the European Union, and the International Atomic Energy Agency (IAEA). DNDO has recently entered an active partnership with the European Community's Joint Research Center to conduct the Illicit Trafficking Radioactive Assessment Program+10 (ITRAP+10), an ambitious three-year test program to evaluate nine classes of radiological/nuclear detection systems in U.S. and European test facilities.

Research and Development

To support basic research and the long-term development of systems with increased capabilities, DNDO is conducting R&D using advanced compact high-performance handheld systems; advanced passive standoff detection technologies; improved detection through networked and distributed detection systems; better detector materials; and improved material attribution and radiochemistry. Additionally, DNDO is pursuing targeted technologies for the detection of shielded special nuclear material through passive and active interrogation programs and development of key supporting systems for varied deployment schemes.

Underlying these efforts is our work to ensure a continued pipeline for human capital development and basic research, executed through DNDO's partnership with the National Science Foundation for the Academic Research Initiative. To date, the Academic Research Initiative has awarded 36 grants to 27 Universities. DNDO will continue to collaborate on these longer term research and development activities as the transformational research and development programs transition to DHS's Science and Technology Directorate pending Congressional approval of the FY 2011 budget.

Nuclear Forensics

DNDO's National Technical Nuclear Forensics Center (NTNFC), has also done an impressive job coordinating and advancing U.S. government technical nuclear forensics efforts. Established in 2007, the NTNFC serves as a national-level "system integrator" for joint planning, exercising, and evaluating our national capabilities, while also investing in technical capability advancement. The NTNFC led the interagency effort to develop the "National Strategic Five-Year Plan for Improving the Nuclear Forensics and Attribution Capabilities of the United States," which was signed by the President and submitted to Congress in April. U.S. policy

emphasizes that any nation or group that enables a terrorist to acquire nuclear devices or materials will be held accountable. Robust forensics and attribution capabilities help to underwrite this policy.

Path Forward

I look forward to continuing our work with our partner U.S. agencies and Congress to prevent nuclear terrorism. We will complete the ASP program so that a final decision on certification can be made; we will end the CAARS technology demonstration this fiscal year; and we will complete the GNDA strategic plan. Further, we will continue to develop technologies and systems that will address gaps in our capabilities to detect threats. Our development of new neutron detection technology to replace helium-3 detectors will mitigate the impact of the helium-3 shortage by decreasing and ultimately eliminating the need for helium-3 in our radiation portal monitors. To support operators in the field, DNDO will purchase current and next-generation handheld systems for use by CBP, USCG, and TSA. DNDO also will work with state and local agencies to establish new radiological and nuclear detection programs in urban areas and train more than 4,000 additional law enforcement and emergency management officials in FY 2011.

We will continue to work on next-generation human portable detectors for varied applications, including a focus on systems with new detector materials and advanced algorithms, as well as smaller, more capable systems. DNDO plans include the potential development of helicopter-mounted, boat-mounted, and long-range radiation sensors to allow more flexible operations. We will also continue our important test and evaluation collaborations with federal and international partners. We will focus on addressing challenging operational environments, such as international rail and break-bulk cargo, to increase our ability to scan for radiological and nuclear threats.

Overall, we will place much greater emphasis on defining the GNDA, both as it exists now and as we would like it to exist in the future. The responsibility to define the architecture is DNDO's greatest challenge and its greatest opportunity. Over the next several years, our long-term architectural vision can be characterized by several common themes that apply across all layers. In every layer and pathway, we will seek to increase detection coverage and capability, deter terrorists from planning or attempting nuclear terrorism, introduce as much uncertainty as possible in the minds of the adversaries with regard to the risk of interdiction, and take maximum advantage of pre-existing activities that can contribute to the overall capability to prevent nuclear terrorism.

In parallel, we will look carefully at the lessons we have learned from past cases related to the illicit trafficking of nuclear and other radioactive material. While there have been no cases within U.S. borders, we have evidence of small but significant cases overseas. We must continue to look at how illicit trafficking takes place and refine our strategies accordingly. While this analysis is still incomplete, I believe it will improve law enforcement efforts within the United States.

I anticipate that future implementations of the GNDA will emphasize mobile or agile detection components, which will increase our capability to respond to escalated threat levels by focusing or surging detection assets to interdict these threats. I recognize the important contributions that other U.S. government agencies and Congress make in accomplishing the mission to prevent nuclear terrorism and I am committed to working in coordination with all parties to develop effective strategies and technologies.

My vision of DNDO is that of a highly competent agency that has a broad spectrum of capabilities including nuclear detection, reporting and analysis specialties, and nuclear forensics. My expectation is that, over time, we will develop a reputation that allows us greater leverage in defining detection architecture throughout the world. We have made some significant steps in this regard. For example, under the President's Global Initiative to Combat Nuclear Terrorism, DNDO coordinated the international development of the Model Guidelines Document for Nuclear Detection Architectures. This document promotes the development of national nuclear detection architectures and capabilities to combat the illicit trafficking of nuclear and radioactive materials, weapons, and components. While this is an important achievement, I recognize that there remains room for growth.

Chairwoman Clarke, Ranking Member Lungren, I thank you for this opportunity to discuss the status of DNDO. I am happy to answer any questions the Subcommittee may have.