

Good morning Chairman Carper, Ranking Member Coburn, and distinguished Members of the Committee. As Director of the Department of Homeland Security's (DHS) Domestic Nuclear Detection Office (DNDO), I am pleased to testify today with my distinguished colleagues to discuss efforts to prevent and prepare for radiological events.

Since its inception, DNDO has built essential partnerships, architecture, and capabilities to detect and interdict radiological and nuclear threats. My testimony today focuses on that work and our continued efforts to improve information sharing and collaboration with our state and local partners.

DNDO's Efforts to Prevent and Prepare for Radiological and Nuclear Terrorism

Radiological and nuclear terrorism remains one of the greatest threats not only to our Nation's security, but to global security. Such an attack would have profound and prolonged impacts to our Nation and to the world. DNDO works with federal, state, local, international, and private sector partners to develop the appropriate detection capabilities to prevent and prepare for radiological and nuclear events.

DNDO's focus is on detecting and reporting attempts to import, possess, store, develop, or transport radiological and nuclear material that is out of regulatory control, and may be used against the Nation. We work closely with the Nuclear Regulatory Commission and the Department of Energy (DOE), who are responsible for securing radioactive materials. Together, they are working on initiatives to improve the security of risk-significant sources. Although DNDO is not directly involved in the physical security of radioactive sources, we coordinate with federal, state, and local agencies to detect and locate materials once they are lost or stolen.

Recognizing the threat posed by radiological and nuclear materials, DNDO was created by Presidential Directives NSPD-43 and HSPD- 14. DNDO was subsequently given statutory authority by Title V of the SAFE Port Act (Pub. L. No. 109-347), which amended the Homeland Security Act of 2002. Pursuant to Section 1902 of the Homeland Security Act, along with its technical nuclear forensics mission, DNDO is required to develop, with the approval of the Secretary and in coordination with the Intelligence Community, the Departments of Energy, State, Defense and Justice, and other components within DHS and our international partners, an enhanced global nuclear detection architecture, and is responsible for implementing its domestic component. The global nuclear detection architecture is a framework for detecting, analyzing, and reporting on nuclear and other radioactive materials that are out of regulatory control. Working with our partners, DNDO conducts transformational research, development, testing, and evaluation of advanced detection technologies, measures detector system performance, and ensures effective response to detection alarms. Additionally, DNDO leads the development and implementation of the national strategic five-year plan for improving the nuclear forensic and attribution capabilities of the United States required under section 1036 of the National Defense Authorization Act for Fiscal Year 2010. Nuclear forensics serves as the technical component of

our capability to attribute nuclear events. As such, it is a keystone of the U.S. policy to hold fully accountable any state, terrorist group, or other non-state actor that supports or enables terrorist efforts to obtain or use weapons of mass destruction.

While DHS focuses on threats of all types, DNDO's sole focus is on the prevention of radiological and nuclear terrorism. To maximize the ability to detect and interdict threats, we rely on the critical triad of intelligence (including information sharing), law enforcement (including training), and technology. In doing so, we apply detection technologies in intelligence-cued searches conducted by well-trained law enforcement and public safety officials. Contributions from our state and local partners are vital to the domestic component of the global nuclear detection architecture. As such, we continue to work with them to build a flexible, multi-layered, domestic architecture based on capabilities that can be integrated with federal assets into a unified response when intelligence or information indicates a credible nuclear threat.

Intelligence and Information Exchange

The first leg of the critical triad is intelligence and information sharing, which forms the backbone of a robust detection architecture. State and major urban area fusion centers, State Emergency Control Centers, and the Federal Bureau of Investigation regional offices provide the necessary information exchange pathways. In the event of an emergency, this connected system provides federal, state, and local personnel with the ability to exchange sensitive information in a timely and secure fashion.

DHS as a whole has enhanced information sharing capabilities by:

- Improving production and dissemination of classified and unclassified information regarding threats to the Homeland;
- Continuing to improve analytic capabilities through the development of a national network of state and major urban area fusion centers so that national intelligence can be incorporated into a local context;
- Standardizing how we train state and local law enforcement to recognize indicators of terrorism-related criminal activity and report these suspicious activities to Joint Terrorism Task Forces for investigation and to fusion centers for analysis;
- Increasing community awareness and encouraging the public to report suspicious activity to local authorities;
- Deploying 70 Homeland Secure Data Network systems across the country to provide access to classified information and intelligence at the local level;
- Training state and local analysts at fusion centers to ensure they have the necessary skills and expertise to analyze and fuse intelligence and information from the Intelligence Community with local/regional context and produce relevant and timely products for their stakeholders; and

- Developing tailored product lines to meet the needs of state and local partners, and expanding the distribution of products to ensure all relevant and appropriate information is shared with state and local partners.

Joint Analysis Center

DNDO's Joint Analysis Center is also essential in enhancing situational awareness, as well as providing technical support and informational products, to federal, state, and local partners. The Joint Analysis Center utilizes a secure web-based dashboard to collaborate with mission partners and uses a geographic information system to show detection information, detectors, situational awareness reports, and other overlays in a geospatial viewer. Utilizing the Joint Analysis Center Collaborative Information System (JACCIS), DNDO facilitates nuclear alarm adjudication and the consolidation and sharing of information and databases. JACCIS provides our state and local partners with the ability to manage, document, and execute a radiological and nuclear detection program. This includes the ability for them to maintain training, certification, and Memoranda of Understanding and Memoranda of Agreement between jurisdictions. JACCIS also consolidates and maintains a database of detector equipment and Nuclear Regulatory Commission State licenses. Finally, through this information system, we connect to the Triage system, maintained by the DOE's National Nuclear Security Administration, to enable a seamless transition when national-level adjudication assistance is required.

DHS Capacity Building with Operational Partners

The second leg of the critical triad is law enforcement. DHS realizes that state and local law enforcement officers and public safety officials are on the frontline of detection and prevention efforts and we work very closely with them to ensure that they have the equipment, training, and information necessary to prevent and prepare for threats. Through Federal Emergency Management Agency grants and other DHS programs such as Securing the Cities, we have helped our state and local partners procure and deploy radiation detection equipment across the Nation. This equipment is one of the building blocks for a radiation detection program.

DHS has made considerable progress in enhancing radiation detection capabilities by:

- Engaging with 29 states to raise awareness and begin developing formal radiological and nuclear detection programs. By the end of Fiscal Year 2015, DNDO plans to expand its efforts to reach all 50 states.
- Supporting activities in the New York City/Jersey City/Newark region. Through the Securing the Cities program, DNDO has developed a robust regional nuclear detection program that serves as a model for future sites.
- Based on lessons learned in the first implementation, DNDO expanded the Securing the Cities program in Fiscal Year 2013 to the Los Angeles/Long Beach area and will select a third region in Fiscal Year 2014.

In addition, DNDO provides the ability to surge resources for use during special events, times of increased threat, or in response to information or events that indicate the need for enhanced detection capabilities. This is conducted using Mobile Detection Deployment Units, trailer-based units outfitted with an extensive suite of nuclear detection equipment and communications capabilities. These units are deployed regionally across the United States and can be deployed as needed to augment federal, state, and/or local capabilities. Each unit is configured to outfit numerous personnel and contains a number of systems that can be used in vehicle backpacks, high-resolution handheld devices, personal radiation detection devices, communications, and tracking equipment. When deployed, the unit is accompanied by technical support staff to train federal, state, and/or local personnel on the use of equipment and to help integrate these surge capabilities into other protective operations. Since 2009, DNDO has deployed the Mobile Detection Deployment Units to more than 149 special security events and exercises in support of federal, state, and local law enforcement and public safety personnel.

Training is an essential element of the law enforcement leg of the critical triad. This is particularly important since, the ability to detect illicit radiological and nuclear material is a perishable skill that must be continuously refreshed. Consequently, in addition to assisting our partners with the procurement of detection systems, DNDO supports the development and delivery of robust training programs to expand and enhance radiation detection capabilities. Through many collaborative efforts, we have provided radiation detection training to over 27,000 state and local law enforcement personnel and first responders.

A significant part of any training program includes exercises. To this end, we work with our state and local partners to design and conduct realistic exercises that provide operators with valuable hands-on experience in radiological detection operations. Annually, we conduct approximately 15 tabletop or full-scale exercises across the country that specifically stress operators' ability to detect radiological material that is out of regulatory control.

In the day-to-day work of a first responder, the occurrence of illicit radiological or nuclear incidents is rare, making training, exercises, and assessments particularly important so that individuals remain ready to react to an actual incident. This is where we bring to bear our unique red team capabilities that can challenge our operational partners with uncommon nuclear sources and scenarios. Annually, DNDO's red team conducts over 20 operations, evaluating deployed systems and operations, and their associated tactics, in as-close-to-realistic environments as possible. They utilize adversary tactics and scenarios to challenge federal, state, and local operators performing radiological and nuclear detection and interdiction operations.

New Technologies for Nuclear Detection

The final leg of the critical triad is technology. DNDO continues to develop breakthrough technologies with significant operational impacts on our national capability to detect radiological and nuclear threats. For example, DNDO led the development of next-generation radioisotope identification devices which are used by law enforcement officers and technical experts during

operations to identify radioactive material. We worked closely with U.S. Customs and Border Protection, U.S. Coast Guard, the Transportation Security Administration, and state and local operators to identify key operational requirements for the design of the new system. Based on an enhanced detection material, lanthanum bromide, and improved algorithms, this new handheld technology is easy-to-use, lightweight, and more reliable. Additionally, because it contains built-in calibration and diagnostics, it has a much lower annual maintenance cost.

Several DNDO sponsored research efforts have led to new commercial products providing federal, state, and local law enforcement and public safety personnel with enhanced operational capabilities. DNDO funded the development of Strontium Iodide and Cesium Lithium Yttrium Chloride which are radiation sensing materials with enhanced detection characteristics. Commercial product lines using these enhanced capabilities are now available, and DNDO proactively engages industry to procure commercial-off-the-shelf devices to field such new technologies for nuclear detection.

By eliminating technical risk for industry, DNDO's research in networked radiation detector systems has led to making commercial products available to responders. These networked detector systems provide operators with enhanced detection, location, and tracking abilities. DNDO also supports ground-breaking research to improve current capabilities. For example, we are developing a next generation aerial radiological detection system, the Airborne Radiological Enhanced-Sensor system. This system places highly-sensitive radiation detector arrays with a visual target tracking capability aboard a helicopter to provide responders with a significantly enhanced ability to detect threats on the ground and at sea.

DNDO has also made strides in protecting the Nation from nuclear terrorism through test and evaluation assistance. To develop effective detection programs, federal, state, and local partners require reliable information on the technical performance, operational effectiveness, and suitability of currently available nuclear detection equipment. DNDO has established a robust test and evaluation capability to rigorously assess commercially available detection systems against national and international standards and in operational scenarios. For instance, DNDO recently completed the Illicit Trafficking Radiation Assessment Program, a collaboration with the European Commission's Joint Research Center and the International Atomic Energy Association. The program tested nearly 80 available instruments against consensus standards. The testing enabled our stakeholders to compare the performance of commercially available radiation detection equipment and provided manufacturers with constructive feedback on their products.

By including operational partners in the planning and execution of test events, we ensure the equipment is tested in the manner in which it will be used. Such tests independently assess system performance and provide operational data to develop effective concepts of operation. Since inception, DNDO has conducted over 96 test campaigns that involve all classes of nuclear detection systems, including personal radiation detectors, handheld, backpack and mobile

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detection systems, radiation portal monitors, and radiation detection systems suitable for maritime environments and aerial platforms. The results of these efforts are shared with operational partners to inform acquisition decisions.

Conclusion

Chairman Carper, Ranking Member Coburn, and distinguished Members of the Committee, thank you for the opportunity to discuss the ongoing efforts of DNDO to prevent and protect against radiological threats.

I appreciate your continued support as we work with our partners to make nuclear terrorism a prohibitively difficult undertaking for the adversary. By developing, evaluating, and deploying the right technologies, ensuring timely intelligence and information sharing, and regularly training and exercising with our law enforcement and public safety officials, we can effectively protect our Homeland from radiological and nuclear terrorism.