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THE HOUSE HOMELAND
SECURITY COMMITTEE**

**STATEMENT OF
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**BEFORE
HOUSE HOMELAND SECURITY COMMITTEE
SUBCOMMITTEE ON EMERGING THREATS, CYBERSECURITY, AND
SCIENCE AND TECHNOLOGY
CONCERNING NUCLEAR FORENSICS AND ATTRIBUTION**

October 10, 2007

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Introduction

Mr. Chairman and distinguished members of the subcommittee, it is an honor to be here today to address the Department of Defense's (DoD) support to the National Technical Nuclear Forensic (NTNF) program. I am the Associate Director for Operations within the Defense Threat Reduction Agency (DTRA), the primary organization within the Department of Defense (DoD) charged solely and full-time with reducing the threat of weapons of mass destruction (WMD). Countering chemical, biological, radiological, and nuclear weapons is the reason for the agency's existence. We perform research and development and provide operational support to enhance DoD nonproliferation, counterproliferation, and consequence management capabilities. Our primary customers are the Combatant Commanders. Our mission is guided by the National Strategy to Combat WMD, the National Strategy for Combating Terrorism, and direction provided by the Secretary of Defense and the Chairman of the Joint Chiefs of Staff.

DTRA works closely with partners across DoD, the United States Government (USG), academia, and the private sector, as well as with our allies and friends in the performance of our mission. Our efforts in support of the national nuclear forensics capability are conducted in close collaboration with the Department of Homeland Security (DHS), Department of Energy (DOE) and its National Laboratories, Department of State, Department of Justice, and the office of the Director of National Intelligence.

Policy advisors have underscored the importance of international cooperation both to attribution and prevention; however, to date there has been limited international collaboration. International cooperation can make attribution more certain by expanding the information and data available to investigators, and increase confidence in an attribution decision. This would serve to deter and dissuade by reinforcing the strategic message. However, we must balance the need for the sharing of forensically valuable nuclear data without compromising US nuclear secrets.

Background

The Defense Department's interest in nuclear forensics and attribution rests on more than the need to provide information that would guide the appropriate national response to a nuclear event. We believe that highly capable forensics and attribution would enable this nation to stop follow-on attacks, and serve to deter states that may assist nuclear terrorists, thereby making nuclear use more difficult for terrorists. As noted in the 2000 Defense Science Board report on Unconventional Nuclear Warfare Defense, one of the strongest elements of protection is deterrence through the threat of reprisal. The goal of stopping subsequent attacks serves to define the timelines for accomplishment of attribution and substantially increases the need for a rapid and authoritative attribution system which, in turn, requires exquisite nuclear forensics capabilities.

Nuclear forensics is not a new mission for DoD. The department's existing nuclear forensics capability is the result of programs that span six decades and includes activities to assess foreign nuclear weapons testing activities, monitor and verify nuclear arms control treaties, and to support intelligence and law enforcement activities. During the Cold War, attribution was a simpler matter as we knew who would be the likely aggressor, and had the means for detecting attacks and confirming the origin of attack. However, nuclear proliferation and the global threat of terrorism mean that we are more likely to face covert rather than readily observable means of nuclear attack. In today's security environment, post-detonation forensics

to support attribution requires much faster answers to different questions under the pressure of an extreme crisis without prior notice.

In 2000, DTRA initiated the Domestic Nuclear Event Attribution (DNEA) program to improve USG post-detonation nuclear forensics capabilities and develop a focused system for rapid and accurate attribution of a domestic nuclear or radiological event. DNEA was created as a joint effort of military, intelligence, technical and law enforcement communities. In 2005, DTRA conducted a successful concept demonstration of DNEA capabilities, and continues its efforts to operationalize a process and capabilities for producing technical nuclear forensics information to fulfill DoD's global responsibilities under the National Technical Nuclear Forensics (NTNF) program. This effort to "operationalize" post-event nuclear forensics is focusing on collection of samples, scientific analysis of the samples, and subsequent reporting of findings that meet legal and scientific requirements.

The DoD Role

The recent signing of the NTNF policy by the President specifically assigns DoD the responsibility to ensure a worldwide post-detonation NTNF capability, including ground and air sample collection, analysis of post-detonation debris, developing and sustaining a concept of operations, and supporting enhancements to post-detonation scientific and technical capabilities. DoD support to NTNF is being led by the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs. DTRA and other DoD elements, such as the Air Force Technical Applications Center, provide specific, supporting operational capabilities.

DTRA maintains the capabilities developed under the DNEA program, including a ground sample collection capability, a forensics laboratory process, and an exercise program to sustain post-detonation NTNF capabilities. DTRA will partner with DOE to provide support in domestic incidents with DTRA developed capabilities including a ground sample collection capability, a forensics laboratory process, and as mentioned earlier, an exercise program to sustain post-detonation NTNF capabilities. We also maintain a special cadre of select personnel and equipment to respond globally to any nuclear or radiological incident.

The DTRA Nuclear Forensics R&D Program is an integral component of a coordinated interagency effort, rather than different potential paths to meet similar requirements. Our investment areas include: Prompt Nuclear Effects Data Collection and Analysis, which is key to the precise measurement of nuclear yield; Debris Sample Collection and Field Measurements to develop more robust ground robotic, unmanned aerial vehicle and manual collection capabilities; Debris Analysis to develop novel approaches and new technologies to achieve rapid and precise isotopic measurements; Data Evaluation and Knowledge Management to improve the application and management of signatures, databases, models, calculations and expertise to produce consensus results; Integration to bring efficient, full national post-detonation NTNF capabilities to bear across the interagency in a crisis environment providing accurate and rapid initial and final results; and other DoD nuclear forensics missions, which may be non-NTNF, but support development of foundational capabilities to provide technical conclusions.

Additionally, DTRA manages and sponsors DoD NTNF exercise and evaluations, is working to fully integrate DoD's exercise and evaluation program into the DHS NTNF exercise program, and has begun crafting DoD's integrated NTNF concept of operations. DTRA supports the DHS and the FBI with hardware, systems, training, exercises and evaluations, and planning for a response to a nuclear incident.

I would like to note that NTNF capabilities rely on the aging physical infrastructure and human expertise that support the USG nuclear weapon programs. While the interagency effort described here today makes a small investment in revitalizing aspects of this national treasure, further erosion in the nuclear weapons program will severely impact our nuclear forensic analysis and evaluation capabilities. A deliberate and concerted effort is needed to ensure these critical capabilities will be available when the nation needs them most.

In addition, I would like to emphasize that neither DTRA nor DoD performs the forensics mission in a vacuum. Many components in the USG, including the DNDO, DOE, FBI, and the Intelligence Community all play a vital role in that effort.

Conclusion

During a recent National Defense University sponsored workshop on nuclear attribution, attendees, including Congressional staff, stressed the incredible pressure that the President and his advisors would be under to make a rapid attribution determination, both for response purposes and to prevent a potential follow-on attack. Policy advisors acknowledged the need to develop further the nation's strategic communication of attribution capabilities for deterrence, dissuasion, and assurance purposes. Our NTNF capability must be able to respond and deliver the initial and final technical conclusions necessary to protect the nation and make well informed decisions.

We have made noteworthy progress, but still have a long way to go in developing and fielding capabilities, such as more robust collection capabilities and improved rapid analysis and data evaluation capabilities, to meet the threat posed by nuclear terrorism. No single Agency or effort can ensure success. Meeting this threat requires the focused integration and coordination of full NTNF capabilities, as well as international capabilities and expertise.

Mr. Chairman, this concludes my remarks. I would be pleased to respond to your questions.