

**Opening Statement
Of
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**Before the House Committee on Homeland Security
Subcommittee on Emerging Threats, Cybersecurity, and Science and Technology**

“H.R. 2631, the Nuclear Forensics and Attribution Act”

October 10, 2007

Introduction

Good morning, Chairman Langevin, Ranking Member McCaul, and distinguished members of the subcommittee. I am Vayl Oxford, Director of the Domestic Nuclear Detection Office (DNDO), and I would like to thank the committee for the opportunity to discuss the U.S. Government's (USG) nuclear forensics program and the role of DNDO in coordinating nuclear forensics efforts through our National Technical Nuclear Forensics Center, (NTNFC) that was established in DNDO last October. I would also like to thank my partners who are joining me from the Departments of Energy (DOE), Defense (DoD), State (DOS), and Justice (DOJ).

Background

The USG's nuclear forensic efforts provide the tools and the expertise to potentially determine the nature and origin of the materials and devices used in acts of terrorism and smuggling. This information is used in the broader process of attribution, which couples intelligence and law enforcement information with the results of forensic analyses to aid in the identification of those who designed, built, supplied, transported and used an improvised nuclear device (IND), a stolen or acquired nuclear weapon, a radiological dispersal device (RDD), or nuclear/radiological material. Technical Nuclear Forensics, or TNF, refers to the thorough analysis, characterization, and interpretation of pre-detonation and post-detonation nuclear/radiological samples and devices, as well as prompt output signals from a nuclear detonation. TNF is a critical nuclear deterrence capability to demonstrate we can hold perpetrators accountable, and also to help find and prevent follow on attacks. The roots of this program are founded in the techniques that were used for many years in the U.S. nuclear weapons development and testing programs, arms control monitoring, and intelligence activities. Today, with the looming threat of nuclear terrorism, the requirements and timelines that drive our efforts are new and only began crystallizing in the last few years.

TNF is necessarily an interagency effort with respective lead and support roles and responsibilities assigned through a recent Presidential policy directive. In the last year the USG has made great strides in aligning itself in accordance with the directive, forming an integrated interagency team. Together we are planning, prioritizing, and exercising. DNDO's TNF goal is to achieve and maintain a proficient national nuclear forensics capability that is credible, robust, rapid, reliable, and ready for any contingency, from interdiction of nuclear materials at the border to a nuclear detonation in the homeland, or against U.S. interests abroad. Nuclear forensics is now increasingly recognized as having the potential to serve as a central pillar of deterrence in the 21st century, tied to new concepts of "nuclear accountability" (as Graham Allison calls it) for countries that might consider the "witting" transfer of nuclear materials or weapons to our adversaries, as well as to encourage improved safeguarding of those materials and weapons, to deter the "unwitting" transfer. We understand that effective strategic communications is fundamental to the deterrence equation. If deterrence fails, then nuclear forensics serves to underpin the attribution process by helping to identify the possible source of the materials or device, the device design type (after a detonation), and the pathway taken to the incident scene, utilizing both nuclear and traditional forensics techniques. Attribution will be derived from the fusing of the technical nuclear forensics

conclusions with all source intelligence and law enforcement information, which in turn enables the decision-making process for assessing potential follow-on attacks, response options for the President, as well as prosecution deliberations.

NTNFC

The Department of Homeland Security (DHS) established the National Technical Nuclear Forensics Center (NTNFC) in DNDO on October 1, 2006. Like the broader DNDO, the Center is staffed with a mix of DHS federal employees and detailees from our partner agencies. DHS assumed this mission as a result of the classified Presidential policy directive that defined two core forensics missions for DNDO. First, the NTNFC is intended to serve as the national “capability provider” to develop and advance capabilities to perform nuclear forensics on pre-detonation nuclear and radiological materials. The second mission for the NTNFC is to implement national-level integration, centralized planning, exercising, evaluation, and stewardship across the full spectrum of USG nuclear forensics capabilities, from pre- to post-detonation—in essence to serve as the “System Integrator” for the end-to-end national capabilities. These missions are specifically directed to be carried out “in coordination” with our partners in the DoD, DOS, DOE, DOJ, and the Office of the Director of National Intelligence (DNI).

Strategic Goals

The strategic goals for the NTNFC include striving to continuously improve nuclear forensic capabilities through research & development, interagency program reviews, independent assessments, and exercising. We are developing a highly matrixed national-level exercise program—we know that strict protocols and intense timelines will be the rule after an event, and so we must exercise regularly to optimize our capabilities and readiness.

We are also working closely with our interagency partners to develop a strong international pillar of nuclear forensics cooperation-- which means sharing best practices and information on materials and cases, developing personal relationships with international forensic scientists and law enforcement, and performing exercises in cooperation with other nations. The NTNFC provides considerable technical support to the DOS in order to engage other nations and develop the absolutely essential international aspects of our nuclear forensics programs.

The NTNFC will also be developing an in-depth strategic communications plan. We need to raise the awareness of others in the government and the public to garner the appropriate kinds of support and disseminate the right kinds of messages. With effective strategic communications, our nuclear detection and forensics missions can succeed in creating a new kind of deterrence for the 21st century.

It is important to note that most of the Nation’s scientific nuclear forensics capabilities rest on the shoulders of a relatively small cadre of experts at the national labs. We are all facing the challenges of recruiting and retaining the nuclear experts that we rely on so heavily to achieve our mission. The NTNFC is working with our partners to assess the issues, identify solutions, and ultimately establish a stable and enduring workforce and

career pipeline. This is a major strategic goal of not only DHS, but all of us here at the table today.

Accomplishments to date

In the short time since the NTNFC was established, we have been working quickly to create a small staff of in-house experts to coordinate with our federal and laboratory partners to meet the needs of our TNF mission. We have developed a baseline Nuclear Forensics Knowledge Management & Analysis System that underpins our capabilities to perform nuclear forensics on interdicted materials. This program entails the development of forensic information analysis tools, for example, multivariate pattern recognition tools; methods to deduce and link materials signatures to production processes; and development of historical nuclear material process and production timelines.

The NTNFC also chairs the Attribution Working Group of the Subcommittee on Nuclear Defense Research and Development, Committee on Homeland Defense and National Security, National Science and Technology Council. The purpose of this Subcommittee is to identify and recommend a prioritized investment strategy to continually increase the overall effectiveness and productivity of USG R&D related to developing a robust nuclear defense capability. Additional Subcommittee working groups include Nonproliferation, Interdiction, Render Safe, and Response and Recovery, resulting in effective integration of R&D needs analysis across the nuclear defense spectrum. With members from DHS, DoD, DOS, DOE, DOJ, as well as the Environmental Protection Agency (EPA) and Intelligence Community, the Attribution Working Group is developing six areas of R&D emphasis that define a USG coordinated forensics and attribution program. The Subcommittee has currently baselined the capabilities in nuclear defense, developed the vision of the desired end-state five years out, and prioritized gaps in R&D. Ultimately, the development and analysis of this roadmap will form the basis for an interagency coordinated program of prioritized R&D efforts to effectively address gaps without redundancy. This Roadmap is scheduled for completion in February 2008, in time for agencies to use the plan to develop FY 2010 budget requests.

The NTNFC has made significant strides in integrating the day to day workings of our interagency team. In addition to the joint Exercise Planning Group, we have established a few essential bodies to plan and direct nuclear forensics activities – we stood up a Nuclear Forensics Working Group at the action officer level; a Steering Committee at the program manager level; and just last month we launched a “Nuclear Forensics Executive Council” with senior executive membership across each department and the intelligence community. The Council was established to assure effective implementation and oversight, with enduring senior level focus and attention to the forensics mission. At our inaugural meeting last month, we were honored to have Secretary Chertoff join us and express his strong support for this critical mission.

Conclusion

The importance of nuclear forensics cannot be overstated. It is a field that seems to grow in visibility on a weekly basis. It is challenging, and it is essential – another critical layer

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in our Nation's strategy of layered defense against the nuclear threat. Our mandate requires that we develop, improve and sustain an enduring capability that is rapid and credible – that will meet the President's and Congress' expectations during an unprecedented catastrophe – and effectively support attribution conclusions, and potential responses. Moreover, nuclear forensics efforts may indeed help to prevent a follow-on attack – the issue that will be foremost on all of our minds in the wake of an attack. The nuclear forensics mission is a crosscutting effort throughout the USG and appropriate coordination through the DNDO's National Technical Nuclear Forensics Center will ensure that effective, integrated, and robust capabilities are developed and sustained.

The Secretary and I are committed to doing whatever it takes, as quickly and as prudently as possible, to prevent a nuclear 9-11, or a dirty bomb attack. Nuclear forensics is central to our efforts. And there is no doubt that our odds of success are magnified tremendously when we persevere with our partners across the board, through planning, exercising, and improving our national capabilities.

This concludes my prepared statement. With the committee's permission, I request my formal statement be submitted for the record. Chairman Langevin, Ranking Member McCaul, and Members of the Subcommittee, I thank you for your attention and will be happy to answer any questions that you may have.