

**Mr. Craig Conklin**  
**Director, Sector-Specific Agency Executive Management Office**  
**Department of Homeland Security**

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**Subcommittee on Emerging Threats, Cybersecurity, and Science and Technology**  
**Status Report on Federal and Local Efforts to Secure Radiological Sources**  
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Good morning Chairwoman Clarke, Ranking Member Lungren, and distinguished members of the Subcommittee. As Director of the Sector-Specific Agency Executive Management Office (SSA EMO) in the Department of Homeland Security's (DHS') Office of Infrastructure Protection, I appreciate the opportunity to discuss the Federal Government's coordinated effort to secure radioactive sources and ensure that they are not used in a manner hostile to the United States. I will also highlight how the Federal Government continues to work with our State, local, tribal, and private sector partners to execute this important mission.

Under Homeland Security Presidential Directive 7 (HSPD-7), Critical Infrastructure Identification, Prioritization, and Protection, the DHS Office of Infrastructure Protection leads a coordinated national program that aims both to reduce risks to the Nation's critical infrastructure and key resources (CIKR) as well as to strengthen the preparedness, response, and recovery of these assets in the event of an attack, natural disaster, or other emergency. These risk mitigation efforts are accomplished through the collaborative framework established in the National Infrastructure Protection Plan (NIPP), which

brings together all levels of government, the private sector, non-governmental organizations, and international partners in support of this CIKR protection and response mission.

In the context of the NIPP, CIKR protection includes actions to deter the threat, mitigate vulnerabilities, or minimize the consequences associated with a terrorist attack or other manmade or natural disaster. Protection can include a wide range of activities such as:

- improving security protocols;
- hardening facilities;
- building resiliency and redundancy;
- incorporating hazard resistance into facility design;
- initiating active or passive countermeasures;
- installing security systems;
- leveraging “self-healing” technologies;
- promoting workforce surety programs;
- implementing cybersecurity measures;
- training and exercises; and
- business continuity planning.

Recognizing that each CIKR sector possesses its own unique characteristics, HSPD-7 designates Federal Government Sector-Specific Agencies (SSAs) for each of the 18 CIKR Sectors. The SSAs are responsible for: implementing the NIPP sector partnership model and risk management framework; developing protective programs and resiliency

strategies; and providing sector-level CIKR protection guidance in line with the overarching NIPP framework established by DHS pursuant to HSPD-7.

The SSA EMO was assigned SSA responsibilities for six of the 18 CIKR Sectors: Chemical; Commercial Facilities; Critical Manufacturing; Dams; Emergency Services; and Nuclear Reactors, Material, and Waste. The SSA facilitates and implements programs that help achieve security by reducing vulnerabilities and consequences of attack through risk-based assessments, industry best practices, protective measures, and comprehensive information sharing between industry and all levels of government. The remainder of this testimony will focus on the Nuclear Reactors, Material, and Waste Sector.

The Nuclear Reactors, Material, and Waste Sector is comprised of:

- Nuclear Power Plants – 104 power reactors at 65 sites;
- Research and Test Reactors – 32 reactors in 22 states;
- Radioisotopes – portable sources primarily for medical and industrial use;
- 28 irradiation facilities;
- 12 major manufacturers/distributors of radioactive sources;
- eight major fuel fabrication and production facilities;
- six spent fuel storage facilities;
- four mixed waste facilities; and
- one uranium hexafluoride production facility.

As the lead Federal coordinator, the role of the Nuclear SSA within the Nuclear Reactors, Material, and Waste Sector (herein referred to as the Nuclear Sector) is to build and sustain relationships with government and private sector security partners to coordinate the identification, prioritization, and protection of Nuclear Sector CIKR. HSPD-7 directs the Secretary of Homeland Security to “continue to work with the Nuclear Regulatory Commission (NRC) and, as appropriate, the Department of Energy in order to ensure the necessary protection [of the Nuclear Sector].” This entails: maintaining the *Sector Specific Plans for CIKR Protection in the Nuclear Sector* and submitting the corresponding *Annual Sector CIKR Protection Report for the Nuclear Sector*; assessing sector-level performance to enable protection-program gap assessments; identifying protection priorities; coordinating and supporting risk assessments and management programs for high-value CIKR; and supplying sector-specific CIKR information for incident response, among other responsibilities.

Critical infrastructure protection and resiliency are the shared responsibilities of Federal, State, local, tribal, and territorial governments, regional coalitions, and the private sector owners and operators of the Nation’s CIKR. The NIPP relies on a partnership model as the primary organizational structure for coordinating CIKR efforts and activities, encouraging the formation of Sector Coordinating Councils (SCCs) and Government Coordinating Councils (GCCs). The SCCs and corresponding GCCs work in tandem to create a coordinated national framework for CIKR protection and resiliency within and across sectors.

As Director of the SSA EMO, I chair the Nuclear Sector's Nuclear Government Coordinating Council (NGCC). The NGCC is the Principal Federal interagency body responsible for working with public and private partners to coordinate and implement civilian nuclear security strategies, activities, and policies; facilitate relevant communications across the government and between the government and the private sector; and coordinate with the emergency management and public health and safety communities regarding response and recovery issues associated with a terrorist act. The NGCC's membership consists of representatives from DHS, National Nuclear Security Administration (NNSA), Nuclear Regulatory Commission (NRC), Federal Bureau of Investigation (FBI), Department of Energy (DOE), Department of State, Department of Transportation, Environmental Protection Agency, along with officials from the radiation-control programs in the States of Delaware, Florida, Massachusetts, Pennsylvania, and Texas. The NGCC's work encompasses CIKR protection activities at the full range of Nuclear Sector assets.

The role of the Nuclear Sector's Nuclear Sector Coordinating Council (NSCC) is to provide a mechanism through which the nuclear industry may provide input into nuclear CIKR protection policy development and implementation; further, it provides a forum for companies and key organizations involved in nuclear security issues to cooperate with government on nuclear CIKR protection. The NSCC is comprised of representatives from nuclear power reactor operators, fuel manufacturing facilities, nuclear reactor manufacturers, nuclear waste management/transportation companies, nuclear trade associations, the Nuclear Energy Institute and the National Organization of Test, Research, and Training Reactors.

The Critical Infrastructure Partnership Advisory Council (CIPAC) directly supports the sector partnership model by providing a legal framework that enables members of the NSCC and NGCC to engage in joint CIKR protection-related discussions. DHS published a Federal Register Notice on March 24, 2006, announcing the establishment of CIPAC as a Federal Advisory Committee Act-exempt body, pursuant to Section 871 of the Homeland Security Act.

The Nuclear Sector's mission statement declares that "the Nuclear Sector will support national security, public health and safety, public confidence, and economic stability by enhancing, where necessary and reasonably achievable, its existing high level of readiness to promote the security of the Nuclear Sector, and to lead by example to improve the Nation's overall critical infrastructure readiness." In furtherance of this mission, the Nuclear CIPAC agreed on eight security goals for the partnership to pursue above and beyond existing regulation:

### **Awareness**

- *Goal 1* - Establish permanent and robust collaboration and communication among all stakeholders having security and emergency response responsibilities for the Nuclear Sector.
- *Goal 2* - Obtain information related to other CIKR assets' dependencies and interdependencies with the Nuclear Sector and share it with sector security partners.
- *Goal 3* - Increase public awareness of sector protective measures, consequences, and proper actions following a release of radioactive material.

## **Prevention**

- *Goal 4* - Improve security, tracking, and detection of nuclear and radioactive material in order to prevent it from being used for malevolent purposes.
- *Goal 5* - Coordinate with Federal, State, and local law enforcement agencies to develop protective measures and tactics to deter, detect, and prevent terrorist attacks on nuclear facilities and other Nuclear Sector assets.

## **Protection, Response, and Recovery**

- *Goal 6* - Protect against exploitation of the Nuclear Sector's cyber assets, systems, networks, and the functions they support.
- *Goal 7* - Use a risk-informed approach that includes security considerations to make budgeting, funding, and grant decisions on all identified potential protection and emergency response enhancements.
- *Goal 8* - Enhance the ability of Federal, State, territorial, local, and tribal governments and the private sector to effectively respond to nuclear and radiological emergencies that result from terrorist attacks, natural disasters, or other incidents.

DHS formed three Sub-councils within the NIPP Framework, meeting under the CIPAC, which are the Cyber, Research and Test Reactor, and Radioisotopes Sub-councils. I would like to take the opportunity to highlight a few examples of the public-private partnership under the NIPP.

### *Comprehensive Reviews*

Comprehensive Reviews (CRs) were security assessments conducted at all 65 nuclear power sites between May 2005 and September 2007, with the Final Integrated Protective Measures Analysis Report issued in March 2008. The process provided a vehicle for discussion with stakeholders on potential enhancements to security in and around the sites. This framework assisted in reducing vulnerabilities, implementing appropriate protective measures, and mitigating the potential consequences of a successful attack. The Office of Infrastructure Protection's Protective Security Coordination Division and the SSA EMO led the CR teams, which included representation from Federal agencies such as the U.S. Coast Guard (which participated in the 49 CRs that had a water nexus), Federal Emergency Management Agency (FEMA), FBI, Transportation Security Administration, DHS National Cyber Security Division, and NRC. The Federal teams worked cooperatively with the State Homeland Security Advisor; State, county, and local emergency managers and planners and emergency response agencies; and private representatives and associations. Following each visit, the CR team analyzed the information and shared it with appropriate stakeholders, which included Federal agencies, State and local law enforcement, emergency management organizations, and facility owners and operators.

### *Comprehensive Review Outcomes Working Network*

The Comprehensive Review Outcomes Working Network (CROWN) project was established to systematically follow up on the approximately 1,800 potential enhancements identified during Nuclear Sector CRs. The process has resulted in tangible

security improvements and has also enabled the Nuclear Sector partners to cultivate and sustain strong working relationships with the Office for Bombing Prevention, the Office of Emergency Communications, the Office of Interoperability and Capability, and FEMA's National Integration Center.

#### *Research and Test Reactor Security Enhancement Project*

The Research of Test Reactor (RTR) Security Enhancement Project is a voluntary, cooperative initiative at the request of the RTR community to explore opportunities to perform security upgrades at RTR facilities. Physical security enhancements have been completed at the Universities of Missouri – Columbia and Oregon State nuclear research and test reactors. The security enhancement program originated in the NSCC and was implemented through partnership among the NRC, NNSA, DHS and the RTR community. Improvements include installing new alarm communication systems, displays with closed-circuit television recording capability, airlock door enhancements, and hardened entry gates and access points. Due to the success of these first two pilot projects, the program will be expanded to include approximately eight additional facilities.

#### *Blood Irradiator In-Device Delay Program*

The Blood Irradiator In-Device Delay (IDD) Program is an initiative to significantly increase the time needed for unauthorized removal of the radioactive source from blood irradiators, which represent significant sources of radioactive material. The scope of this initiative includes 843 of an estimated 1,000 cesium irradiators in the United States, with

NNSA overseeing the IDD effort for all three major irradiator manufacturers (Best Theratronics, Ltd. (BTL) – GC40, GC1000, GC3000; Pharmalucence/CIS – IBL 437; and JL Shepherd & Associates (JLSA) – JL Mark 1). This initiative has been endorsed by the Organization of Agreement States, NRC, and DHS. National implementation of the IDD Program is presently under way. As of June 2009, 25 kits have been installed, with installations for existing devices projected through 2016. New blood irradiators will have the security enhancements installed at the factory before customer delivery.

The Radioisotopes Sub-council specifically addresses radioactive source security concerns by developing and recommending policies, strategies, plans, and measures to enhance the physical security and emergency preparedness of the Nation's radioisotope sector. The Radioisotopes Sub-council focuses in particular on identifying and recommending measures to prevent radioisotopes of concern from being stolen, diverted and used in Radiological Dispersal Devices, Radiation Exposure Devices, or for other malicious purposes. At the request of the NSCC Chair, the NGCC held a Radioactive Source Security Workshop Sept. 16-17, 2008, to prioritize and identify areas on which to focus the energy and resources of the Radioisotopes Sub-council. The facilitated workshop included over 50 public and private-sector attendees. Workshop participants identified three source security issues which warranted further examination:

1. Potential national security concerns presented by the lack of commercial disposition options for sealed radiation sources (e.g., radiography sources).
2. The capacity for existing commercially available off-the-shelf technologies to physically track conveyances, packages, and sources during transport.

3. Reconciliation of the myriad, and sometimes confusing, relevant regulatory authorities and associated security regulations integral to the transport, transportation, and transshipment of Category 1 and 2 sources as defined by the International Atomic Energy Agency.

Federal and State officials are now working through the Radioisotopes Sub-council and its private-sector equivalent to better understand the scope and scale of these issues. As a result, three Focus Groups have been created to address these three issues.

The Removal and Disposal of Disused Sources Focus Group identifies removal and disposition options for disused sources. Currently, the limited number of commercial disposal pathways and recycling options could lead to sites stockpiling disused sources. The Focus Group will develop a concise message on the potential national security concern caused by the lack of commercial disposition options for disused sealed sources and investigate immediate and long-term options to address the concern (e.g., incentives to open commercial facilities to waste not generated within the boundaries of their waste compacts and incentives for consolidated interim storage) by October 2009.

The Tracking of Radioactive Sources Focus Group compiles technical specifications of commercially available passive and active tracking systems and subsequently evaluates the identified technology relevant to its capability for tracking conveyances, packages, or sources. The Focus Group will culminate its initial efforts with a position paper by November 2009 on the pros, cons, and cost effectiveness of each identified technology.

The Transportation of Radioactive Sources Focus Group identifies relevant regulatory authorities and associated transportation security regulations to reconcile and analyze the overlaps, gaps, and potential inconsistencies in those federal transportation security regulations. Additionally, this Focus Group will seek to establish an inter-governmentally approved definition for transit and transshipment, to include an action plan with a set of recommendations for addressing any regulatory gaps and/or inconsistencies by December 2009.

The Nuclear SSA, in close coordination with its Federal partners, maintains and regularly updates a matrix of Federal programs and initiatives to promote the security of radiation sources. The “Source Security Matrix” tracks dozens of Federal programs and initiatives to address the risk that domestic U.S. radioactive sources poses; it is updated monthly, issued quarterly, and remains a continuing agenda item at the Nuclear Sector’s quarterly meeting. The purpose of this matrix is to help reduce duplication of effort, maximize the use of limited Federal resources, and identify gaps in Federal activities.

In addition to the efforts described above, DHS’ Domestic Nuclear Detection Office (DNDO) is actively engaged in a myriad of initiatives with the Nuclear Sector. The Mission of DNDO 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 United States.

DNDO addresses source security through its Securing the Cities Initiative, which designs and implements architecture for coordinated and integrated preventative detection and

interdiction of illicit radiological materials that may be used as a weapon within a high risk urban area. The New York City (NYC) Tri-State Region Source Security Subgroup, chartered as part of the NYC Securing The Cities pilot effort, is focused on developing an effective, risk-based approach to increase the security of industrial and medical sources in NYC and the surrounding areas of New York, New Jersey, and Connecticut. The subgroup is:

- Developing a best practices in source security report;
- Performing security reviews of high risk materials licensees; and
- Evaluating the current notification and tracking system for the movement of sources in the NYC Tri-State area.

DNDO also chaired the Public Education Subgroup as part of the NRC-chaired Radiation Source Security and Protection Task Force to enhance the general knowledge of the public concerning Radioactive Dispersal Devices (RDDs). The subgroup developed an action plan that, when implemented across the Nation, will raise public awareness of the effects of an RDD. It is hoped that this increased public awareness will lower the public panic in response to an actual or perceived RDD event. By mitigating fear and panic of RDDs, it is hoped that either RDDs will become a less attractive weapon of choice for terrorists, or, in the case of an RDD attack, will limit social and economic damage due to an informed public response.

DNDO's Small Business Innovative Research Program (SBIR), implemented in coordination with the DHS Homeland Security Advanced Research Projects Agency, is

an effort to promote the design and production of non-nuclear alternatives for industrial devices that use radioactive sources. This program gives seed money to companies who have shown promising designs through a nationwide competition. Currently, DNDO has three SBIR contracts.

DNDO's State and Local Stakeholder Working Group supports non-Federal members of the preventative radiological and nuclear detection (PRND) community. DNDO has developed a PRND Program Management Handbook, and over 7,400 law enforcement, first responder personnel, and public officials have completed the agency's five-course training curriculum.

In an effort to share information on source security issues of mutual interest, DHS, NRC, and NNSA participate in what is known as Tri-Lateral Meetings. Tri-Lateral Meetings seek to:

- Discuss issues of mutual interest to participating agencies regarding radiological and nuclear material;
- Avoid or minimize surprises about other agencies' activities;
- Develop an efficient and effective path forward to enhance efforts on source security; and
- Speak with one Federal voice, especially for Congressional and media inquiries.

The Tri-lateral Meetings are held on a quarterly basis, for two hours, to share information and discuss agency programs on radiological source security and preparedness matters.

The Tri-Lateral Meetings provide an informal information sharing forum for DHS, NNSA and the NRC to synchronize radiological source security efforts that are not already covered through other established public-private and inter-agency auspices (e.g., NGCC/CIPAC, Radiation Source Protection and Security Task Force). Both DNDO and Infrastructure Protection represent DHS at the Tri-Lateral Meetings, where each participating agency alternates chairing and coordinating the periodic meetings to include logistics and agenda development.

In closing, the Office of Infrastructure Protection works closely with its Federal, State, local, territorial and tribal and private-sector partners within the Nuclear Sector to ensure the protection and resiliency of the sector. I would be glad to respond to any questions the Subcommittee may have.