POLICY ISSUE
INFORMATION

March 30, 2010 SECY-10-0036

FOR: The Commissioners

FROM: Charles L. Miller, Director
Office of Federal and State Materials
and Environmental Management Programs

SUBJECT: UPDATE ON STAFF EFFORTS TO WORK WITH FEDERAL PARTNERS ON VOLUNTARY SECURITY INITIATIVES FOR RADIOACTIVE MATERIALS

PURPOSE:

The purpose of this paper is to respond in part to the Staff Requirements Memorandum (SRM) SECY-08-0184 "Strategy for the Security and Use of Cesium-137 Chloride (CsCl) Sources," dated April 15, 2009. The SRM directed the staff to continue to work with the U.S. Nuclear Regulatory Commission's (NRC's) Federal partners to implement the voluntary hardening program for certain blood and research irradiators and to explore other possible Federally-funded voluntary initiatives to augment the safety and security for these essential components of our Nation's infrastructure. This paper provides updated information on staff efforts to support the national implementation of the In-Device Delay (IDD) Security Enhancement program for hardening CsCl irradiators, and provides information about additional federally-funded voluntary security enhancement initiatives for Category 1 and 2 radioactive sources[1]. This paper does not address any new commitments or resource implications.

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[1] The United States has made a commitment to following the International Atomic Energy Agency Code of Conduct on the Safety and Security of Radioactive Sources. The Code identifies categories that are based upon the relative health hazards each radionuclide would present if not kept under adequate controls. The Category 1 and 2 quantities of radioactive sources listed in the Code are considered the most risk significant and have been the focus of Federal and State efforts to tighten security controls.

BACKGROUND:

Radioactive materials are a critical and beneficial component of global medical, industrial, and academic efforts. The NRC and the U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA) have partnered with state, local, and tribal governments, other federal agencies, and the private sector with a common goal of preventing radiological material from being used in a radiation exposure device (RED) or a radiological dispersal device (RDD).

The NRC and state regulatory agencies have created a strong and effective regulatory framework that includes licensing, inspection, and enforcement of more than 70,000 Category 1 and 2 radioactive sources. This framework provides a common baseline level of security to ensure adequate protection of public health and safety and the common defense and security. The ultimate responsibility for securing radioactive materials in the U.S. rests with the licensees who possess these materials. To assist in that effort, NNSA works with the NRC, the materials licensees, state, local and tribal governments, and other federal agencies, to build on the existing regulatory requirements by providing voluntary security enhancements.

These voluntary security enhancements are supplementary to and do not replace the licensee's obligation to meet NRC and Agreement State regulatory requirements. These efforts are an excellent example of federal, state, tribal, and local agencies working in cooperation with the private sector to further reduce the risks of terrorism involving radioactive materials in the U.S.

DISCUSSION:

As part of NRC's interagency activities, the NRC staff has been working with the NRC's federal partners by supporting each agency's unique role and initiatives in the security arena to ensure a comprehensive system of oversight, prevention, and protection of civilian radioactive sources. The possibility of an RDD attack has been of particular concern because of the widespread use and availability of radioactive materials by industry, hospitals, and academic institutions. Loss or theft of Category 1 or 2 quantities of such radioactive materials, could lead to their malicious use in an RDD. NNSA's Global Threat Reduction Initiative (GTRI), in cooperation with NRC and the Agreement States, is implementing a program for utilizing voluntary security enhancements at licensee facilities with these materials. These enhancements include:

- Elimination – Removing unwanted sources,
- Delay – CsCl irradiator IDD kits (i.e., hardening),
- Detection/Assessment – Detection systems upgrades (e.g. remote monitoring),
- Response – Alarm response training, and;
- Table Top Exercises (TTX) for first responders.

Elimination – Removing unwanted sources
The NRC and Agreement States support and coordinate with GTRI's Off-Site Source Recovery Project (OSRP) to reduce the radiological risk by recovering and removing disused and unwanted sealed sources. GTRI, in coordination with NRC, developed recovery prioritization criteria based on risk reduction. As of February 28, 2010, GTRI has recovered over 24,700 sources (totaling more than 772,700 curies).

Delay – CsCl irradiator IDD
The IDD Security Enhancement program is a threat reduction effort begun by GTRI and the Department of Homeland Security's (DHS') Domestic Nuclear Detection Office (DNDO), in cooperation with the NRC and the major CsCl irradiator manufacturers. DNDO's program was transferred to NNSA/GTRI in May 2009 to streamline the program and integrate it into GTRI's overall voluntary security enhancement program. The IDD hardening program aims to increase the security of CsCl irradiators in the United States through the installation of security plates that significantly increase the delay, or time required to illicitly gain access to the CsCl sources. In addition to the IDD hardening kits for CsCl irradiators, voluntary security enhancements also include other delay elements such as device tie downs, locks, hardened doors/windows, walls, cages, and safes. All of these elements increase the time it would take an adversary to gain access to and steal the radioactive source.

Three private sector irradiator manufacturers are coordinating with GTRI to perform the installations. In addition to assisting in developing and installing the hardware improvements, these manufacturers have indicated to GTRI their intention to install security enhancements on all new CsCl irradiators that they produce starting in 2010, which will ensure that new irradiators are better protected as they come off the production line. The device registration certificates have been amended by the NRC and the cognizant Agreement States to reflect this change.

Licensees have volunteered for both the voluntary security enhancement program as a whole, and the IDD effort. Communications from the NRC, including NRC Regulatory Issue Summaries (RIS 2008-17, "Voluntary Security Enhancements for Self-Contained Irradiators containing Cesium Chloride Sources", dated July 18, 2008; and RIS 2010-02, "The Global Threat Reduction Initiative (GTRI) Federally Funded Voluntary Security Enhancements for High-Risk Radiological Material", dated January 21, 2010), have helped to facilitate awareness among licensees of the voluntary security enhancement program, which includes the IDD hardening program. As of February 2010, 107 of the 847 devices within the program's scope have been hardened. Offered at no cost to facility operators, GTRI is funding both the equipment and installation of these security enhancements, which represents a national investment of approximately $26 million. The domestic irradiator hardening program is expected be completed in 2016.

Detection/Assessment – Detection systems upgrades
GTRI's voluntary security enhancements program also includes upgrades to detection systems. Detection upgrades include biometric access control devices, door alarms, motion sensors, cameras, electronic tamper indicating seals, and area radiation monitors. Each of these technologies provides access control and/or detection functions that, when integrated together and with delay, provides additional enhancements to physical security in a holistic manner. In some cases when warranted, GTRI provides remote monitoring systems which send critical alarms (e.g., tamper indication and high radiation levels) simultaneously to on-site and off-site monitoring centers to ensure response.

According to GTRI, the voluntary security enhancements include a 3 to 5 year maintenance and warranty contract for each device installed. GTRI contacts each site quarterly to follow-up on the status of the enhanced security system and visits each site annually to determine if changes are warranted. GTRI estimates that there are about 2,200 buildings within the program's scope

that house Category 1 or 2 quantities of radioactive materials. As of February 28, 2010, 113 buildings had been completed with the remaining buildings to be complete by 2016.

Response – Alarm Response Training
The GTRI program will also provide security personnel and local law enforcement with tools (e.g. radios, repeaters, and personal detection devices) and additional training to respond to a security incident. To ensure that both on-site and off-site responders understand how to respond to enhanced security system alarms, GTRI developed an alarm response training course, which is held at the Y-12 National Security Complex in Oak Ridge, TN. NRC staff has observed this course to maintain awareness of all aspects of the enhancement program. This alarm response training also prepares responders to protect themselves and the public when responding to events involving radiological materials. The participants conduct hands-on training in a realistic setting using actual protection equipment and real radioactive sources. The courses include operational exercise scenarios that build on classroom instruction and allow response forces to exercise their own procedures during realistic alarm scenarios. As of February 28, 2010, GTRI had conducted 11 alarm response training sessions for 36 licensees and their immediate off-site responders.

Table Top Exercises (TTX)
The final component of the voluntary security enhancements program is table top exercises. NNSA and the Federal Bureau of Investigation (FBI) provide table top exercises upon request at materials licensees' facilities that have volunteered for the security enhancements program, and have enhancements installed. These exercises are designed to provide a no-fault, site-specific scenario where senior managers from various federal, state, and municipal organizations can exercise their crisis management and consequence management skills in response to a simulated terrorist incident. The overall objectives are to:

- Promote cross-sector communication, cooperation, and team-building among federal, state, local, and private sector first responders;
- Exercise FBI lead responsibility for criminal investigation;
- Examine newly developed tactics, techniques, and procedures resulting from voluntary security enhancements;
- Promote attack prevention through intelligence sharing and coordinated approach to neutralize the threat; and
- Prepare site-specific integrated response plans with federal, state, local, and private sector partners.

As of February 28, 2010, NNSA had conducted 6 TTXs at materials licensee facilities, focused on RED/RDD events. NRC and Agreement State staff have observed several exercises.

In summary, the IDD effort is planned and implemented in coordination with NNSA's domestic radiological security enhancement program. While no additional security enhancements are needed at this time, NRC and Agreement States support NNSA's work with the materials licensees and state, local, and tribal governments to supplement the existing security requirements with voluntary security enhancements, such as CsCl irradiator hardening and facility upgrades (e.g., access control, detection, delay, remote monitoring to ensure response, and sustainability). These security enhancements supplement and do not affect the licensee's responsibility to meet the existing NRC and Agreement State regulatory requirements, and are

intended to further improve the effectiveness of security systems. If these enhancements are used to meet regulatory requirements, then the licensee is obligated to assume all responsibility for functionality and maintenance of the enhancements.

The NRC staff continues to work closely with its federal partners to coordinate with state and local agencies and the private sector on voluntary efforts to enhance source security. The staff routinely disseminates information to the Agreement States and materials licensees, coordinates the Radiation Source Protection and Security Task Force, and participates in meetings with the DHS-chaired Nuclear Sector Government Coordinating Council and Sector Coordinating Council, as well as routine trilateral meetings with senior management from DHS and DOE/NNSA to coordinate on radioactive source security issues.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

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