

## **Report on the Nuclear Regulatory Commission and the Department of Energy/National Nuclear Security Administration Activities in Protecting Radioactive Sources.**

Nuclear and radioactive materials are a critical and beneficial component of global medical, industrial, and academic efforts. The possibility that these materials could be used by terrorists is a national security concern. Domestically, the Department of Energy/National Nuclear Security Administration (NNSA) and the Nuclear Regulatory Commission (NRC) have partnered with state, local, and tribal governments, other federal agencies and the private sector with a common goal of preventing nuclear and radiological material from being used in an improvised nuclear device, a radiation exposure device, or a radiological dispersal device – sometimes called a “dirty bomb”. These activities are consistent with the 2004 Code of Conduct on the Safety and Security of Radioactive Sources (Code of Conduct) and other International Atomic Energy Agency (IAEA) physical protection non-legally binding guidance. Internationally, NNSA and NRC cooperate to identify countries and regions where the two organizations can work either together or independently to improve nuclear and radiological security.

### **Domestic Security Requirements**

The NRC has the responsibility for regulating the safety and security of radioactive sources. NRC’s activities are mandated by the Atomic Energy Act of 1954, as amended. Regulatory control over the safety and security of radioactive sources is mainly under the authority of the NRC. The NRC and state regulatory agencies have worked together to create a strong and effective regulatory framework that includes licensing, inspection, and enforcement. This partnership ensures the security of 32 civilian nuclear research and test reactors and over 70,000 high-risk radioactive sources without adversely impacting their beneficial uses. This framework provides a common baseline level of security to ensure adequate protection of public health and safety and the common defense and security. Key elements include: limiting access to only approved individuals through the use of background checks that include fingerprinting, as well as employment history, education, and reference checks; enhanced physical barriers and intrusion detection systems, including guards and alarms, to monitor and detect, assess and respond to unauthorized access; coordination with local law enforcement to respond to an actual or attempted theft, sabotage, or diversion of nuclear or radioactive materials; prompt notification of incidents to the appropriate government agency; and close monitoring of shipments to ensure the security of nuclear and radioactive material during transit. In 2009, the NRC implemented the National Source Tracking System (NSTS) to track and account for, from cradle to grave, all the radioactive sources that warrant greatest control, as recommended in the Code of Conduct. The information in the NSTS is available for all federal and state agencies on a need-to-know basis.

### **Domestic Voluntary Security Enhancements**

The ultimate responsibility for securing nuclear and radioactive materials in the United States rests with the licensees which 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. Examples of these voluntary enhancements include: removal of disused radioactive sources, including packaging, transport, and secure disposition; security upgrades based on best practices, including federally funded upgrades such as cesium-chloride irradiator hardening and facility specific security upgrades (e.g., installation of devices or features that enhance deterrence, control, detection, delay, and/or remote monitoring to ensure response, including sustainability of these enhancements); specialized training for

local law enforcement so they can better protect themselves and their communities when responding to alarms at facilities with nuclear and radioactive materials; no-fault tabletop exercises, co-sponsored with the Federal Bureau of Investigation, to promote cross-communication, cooperation, and training in response to terrorist acts involving nuclear and radioactive materials; and transportation security, including a test bed and voluntary pilot demonstration of cargo hardening, alarm assessment, and shipment tracking.

These voluntary security enhancements are complementary to and do not replace the licensees' obligation to meet NRC and Agreement State regulatory requirements. The voluntary security enhancements are sound, cost-effective, and prudent best practices, which further improve security above regulatory requirements.

NNSA is also working on alternative technologies research and development (R&D), focusing on non-radioactive replacements (e.g. x-rays) to study alternatives for some radioactive sources.

These efforts are excellent examples of Federal, State, Tribal, and local agencies working in cooperation with the private sector to further reduce the risks of terrorism involving nuclear and radioactive materials in the United States.

## **International Efforts**

NRC, NNSA and other U.S. Government agencies have complementary and coordinated programs aimed at assisting our international counterparts to improve the security of nuclear and radioactive materials. These efforts include working bilaterally with the host country, regionally with the host and other donor countries, and/or in partnership with the IAEA.

NNSA's program includes a variety of security activities including: searching for, securing, and/or recovering orphaned and abandoned radioactive sources; designing and installing physical protection enhancements for sites with nuclear and radioactive materials; assessing security of the transportation of nuclear and radioactive materials and providing training and transportation security upgrades; conducting response force training; and assisting countries in sustaining and properly operating such nuclear and radiological security upgrades by assisting in the establishment of national-level regulations and inspection mechanisms.

NRC assists select international regulatory counterparts to implement key provisions of the Code of Conduct. Rather than make recommendations to countries on how to protect sources, and consistent with article 20(n) of the Code of Conduct, the NRC discusses its program to protect sources, demonstrating best practices and lessons learned since 2001. These activities include: development and maintenance of national registries of radioactive sources; development of sustainable legal, technical, and licensing bases for safety and security regulatory oversight; conducting workshops that describe NRC's physical protection requirements for radioactive materials and provision of an overview of the U.S. legal and regulatory framework, source security requirements, increased controls, security inspections and enforcement.

For example, since June 2009, the NRC has conducted two regional workshops internationally on the physical protection of radioactive sources, which focus on NRC regulatory requirements. Specific topics include, but are not limited to: U.S. Regulatory Oversight; the Legal and Regulatory Framework and Rulemaking; Basic Security, Threat Concepts and Consequences of Concern; Source Security Requirements; Comparison of IAEA and NRC Source Security Requirements; and Security Inspections and Enforcement.

NRC and NNSA anticipated the need for close coordination to ensure maximum effect of their complementary international programs. Beginning in 2006, both NRC and NNSA participated in a

number of IAEA-hosted consultants' meetings to develop and refine a draft nuclear security guidance document. This document was developed to be used by countries in developing national security policy and regulatory requirements to establish and enhance control over radioactive sources. The guidance was based on extensive input from technical and legal experts, integrating NRC regulatory requirements, NNSA practices, and both agencies' experiences and best practices. The preparation of this publication involved extensive consultations within the U.S. Government, as well as with other countries, including open-ended technical meetings to achieve consensus and resolution of issues from 2006 to 2008. As a final step, the draft was circulated by IAEA to all Member States to solicit comments and suggestions before publication in 2009 as Nuclear Security Series (NSS) No. 11, "Security of Radioactive Sources." It includes guidance and recommended measures for the prevention of, detection of, and response to malicious acts involving radioactive sources. It is intended to help Member States (regulators, users of materials and law enforcement) in developing policies that are consistent with the Code of Conduct and fulfill certain obligations under the International Convention for the Suppression of Acts of Nuclear Terrorism. The guidance in NSS No. 11 is consistent with the source security requirements that are implemented in the U.S. by NRC and the source security enhancements and upgrades that are implemented by NNSA under its Global Threat Reduction Initiative (GTRI) overseas. NSS No. 11 may be also used in countries that may not have any regulatory security requirements or infrastructure for response for sources; as a result it also includes different security recommendations. The guidance provided in the NSS No. 11 is not binding on any IAEA Member State, except to the extent an individual country, acting in accordance with its national processes, incorporates all or part of the guidance into its national law or regulations.

By cooperating and coordinating to set international guidance on the security of sources, both NRC and NNSA use the NSS implementing guide enhanced by their technical experience to assist countries in nuclear and radiological security. Cooperative efforts such as these assist national regulators to develop and enact permanent domestic regulatory requirements for security of sources as well as support the overall goal of preventing the loss of control of such sources anywhere in the world.

### **NRC/NNSA Cooperation**

Since September 11, 2001, the NRC and NNSA have worked together on a numerous activities, both domestically and internationally, to strengthen the protection of radioactive sources. Noted below are recent examples of completed and ongoing joint activities.

- Recent meeting between the NNSA Administrator and NRC Chairman to maintain alignment on common goals and objectives. Frequent NNSA Assistant Deputy Administrator-level one-on-one coordination meetings with peers at NRC to further improve cooperation and discuss priority actions.
- Updates to the GTRI Protection and Sustainability Criteria Document (published February 2010) with input from the NRC and other agencies.
- Updated joint Regulatory Information Summary documents that NRC sends to the State regulatory agencies and licensees explaining and endorsing GTRI voluntary security enhancements.
- NRC invited GTRI to observe NRC Increased Controls inspection at radiological site and GTRI invited NRC to a recent voluntary security assessment visit at a research test reactor.
- GTRI invited NRC, DHS, FBI, and others to observe GTRI Alarm Response Training at Y-12 National Nuclear Security Complex located in Oak Ridge, TN, and Table Top Exercises.
- Joint NRC-NNSA-DHS testimony before the House Committee on Homeland Security.
- Participation in two inter-agency working groups and quarterly trilateral meetings between NRC-NNSA-DHS senior management.

- NRC and NNSA/GTRI developed an integrated “Partnership for Securing Nuclear and Radiological Materials” document to explain each agency’s roles to both domestic and international partners. This will be the basis for a more detailed coordination of responsibilities on the international efforts.
- GTRI and NRC work together with partners in the nuclear sector in the Critical Infrastructure Partnership Advisory Council (CIPAC) as members of the Government Coordinating Council (GCC) and Research and Test Reactor (RTR) Sub-council.
- NNSA/GTRI and NRC, as well as a number of other Federal and State representatives, work closely together in the Radiation Source Protection and Security Task Force, established by the Energy Policy Act of 2005, which is chaired by the NRC.
- GTRI invited the NRC to attend a World Institute for Nuclear Security (WINS) workshop in June 2010; and NRC invited GTRI to present on its security enhancements program at an upcoming workshop in China.

NNSA and NRC efforts, in total, improve long-term nuclear and radiological security by ensuring that nuclear and radioactive materials are subject to continuous, effective nuclear regulatory safety and security oversight.