Overview of the Nuclear Regulatory Commission Program for Regulating Radioactive Sources

Licenses to possess and use radioactive materials are issued, and safety and security controls are applied, using a graded, risk-informed approach. Certain radioactive materials are exempt from possession and use licensing. Exempt quantities of radioactive materials are manufactured in accordance with a U.S. Nuclear Regulatory Commission (NRC) or Agreement State license. An Agreement State is a State that has signed an agreement with the NRC, as provided by the Atomic Energy Act, allowing the State to regulate specified non-Federal use of radioactive material within that State. Use of these materials is exempt from licensing due to the extremely small quantity of radioactive material contained (e.g., smoke detectors). General licenses for somewhat larger quantities of radioactive material are authorizations that do not require an application or issuance of a licensing document but, in some cases, do require an annual registration of sources with NRC. These generally licensed devices are designed and manufactured so that even in accident scenarios, there is no unacceptable risk to public health and safety. Specific licenses for even larger quantities of radioactive material contain specific conditions to ensure the safe use of the material and are issued as individual documents. The NRC administers approximately 4,350 specific radioactive materials licenses, and thirty-four Agreement States administer approximately 17,450 specific radioactive materials licenses.

NRC has considered the full range of radioactive materials within NRC and Agreement State regulatory jurisdiction and has implemented the U.S. Government's position regarding the IAEA Code of Conduct by applying additional controls to, and by maintaining a national registry or inventory of, the Category 1 and Category 2 sources. These sources were identified in the U.S. Department of Energy (DOE)/NRC joint study and in the International Atomic Energy Agency (IAEA) Code of Conduct because they present the greatest risk for potential use in a radiological dispersal device. NRC and the Agreement States have issued orders for enhanced security measures and increased controls to licensees with Category 1 and Category 2 materials. The enclosed charts and table illustrate the NRC's risk-informed approach to security of risk-significant sources. As indicated in these enclosures, NRC took early action after the IAEA Code of Conduct was finalized in 2003 to place Category 1 and Category 2 sources under additional controls. The NRC has also developed an Interim Inventory to identify the NRC and Agreement State licensees with Category 1 and Category 2 sources and is developing a National Source Tracking System (NSTS) to more closely monitor these sources. Additionally, as part of the NSTS rulemaking, the Commission has directed the staff to develop a proposed rule to include Category 3 sources in the NSTS, and to complete expansion of the NSTS within three years. Finally, the NRC is evaluating its existing programs as they apply to sources below Category 2 quantities to identify areas where increased licensee accountability or access control requirements may be warranted.

Import or export of Category 1 and Category 2 radioactive material requires a specific import or export license from NRC before the sources are transported into or out of the country. Note that import and/or export licenses are separate and distinct from the possession and use licenses discussed above, and there is no exempt quantity threshold for imports and exports. Importers and exporters, or shippers, are not required to carry import or export licenses, or licenses for possession of radioactive sources with shipments; however, NRC now receives prior notification of imports of Category 1 and Category 2 radioactive material. NRC's NSTS, when implemented, will capture information on all Category 1 and Category 2 sources, including those being imported or exported. Imports and exports of sources below Category 2 are covered under a general license.

Categories of Cesium-137 Sources Defined in the International Atomic Energy Agency (IAEA) Code of Conduct on the Safety and Security of Radioactive Sources

IAEA Category	Threshold Quantities of Cesium-137 (curies)	Examples of Use
Category 1	2,700.0	Food Irradiators
Category 2 [1]	27.0	Brachytherapy (medical)
Category 3	2.7	Well logging
Category 4	0.027	Moisture gauges
Category 5	< 0.027	
Examples of NRC regulatory limits within Category 5:		
Quantity above which NRC's general license tracking system applies to generally-licensed devices containing cesium-137	$ 0.010	Thickness gauges
Exempt quantity	0.00001 [2]	One radiation detector check source purchased by GAO (GAO used 15 such sources during its border investigation)[3]

[1] Import of sources containing cesium-137 (or any of 15 other radionuclides) in Category 1 or 2 quantities requires a specific import license.

[2] This is a quantity below which persons are exempt from NRC licensing requirements. It is 2,700,000 times less than the Category 2 threshold for risk-significant sources, above which NRC has issued Orders for enhanced safety and security of radioactive sources, and for which NRC is developing a National Source Tracking System to track risk-significant sources, as recommended by the IAEA Code of Conduct. However, many devices containing cesium-137 sources above this 0.00001 curie threshold are generally licensed pursuant to 10 CFR 31.5(a). Generally licensed devices containing cesium-137 sources above 0.01 curies are subject to annual registration under NRC's general license tracking system (10 CFR 31.5(b)(13)).

[3] GAO holds a specific license from NRC to possess multiple sources that may each contain slightly more than an exempt quantity.