



# National Source Tracking System (NSTS)

May 25, 2006

# Background

- Joint NRC/DOE report on Radiological Dispersal Devices recommends development of a national source tracking system
- IAEA Code of Conduct on Safety and Security of Radioactive Sources ([http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004_web.pdf)) recommends establishment of a national register
  - Work underway before 9/11/2001
- Energy Policy Act of 2005 codified requirement for rule and placed requirements on system

# Approach

- Two phase
  - Interim inventory now provides database on sources – short term solution; gathered valuable data to locate sources, permit implementation of security measures and provide baseline data for NSTS
  - National source tracking system – new system entirely separate from NMMSS

# Identification and Tracking for Materials of Concern

- Whom will it benefit?
- Whom will it involve?
- Worked with NRC, DOE, other Federal agencies, States and internationally

# Interim Inventory

- A ‘snapshot’ survey begun in 2004 – NRC and Agreement State licensees, not DOE sources
- IAEA Category 1 and 2
- Annual update until National Source Tracking System in place
- DOE data call

# National Source Tracking System

- Requirements for design were guided by a working group
  - NRC, DOE & Agreement State membership
- Approved by Steering Committee with NRC, DOE, and Agreement State membership and Interagency Committee comprised of representatives from NRC, DOE, Agreement States, and ten other Federal agencies

# National Source Tracking System

- Will include sealed sources from NRC & Agreement State licensees and DOE facilities – intended to be a nationwide system for sealed sources
- Will not include SNM except Pu-239/Be and Pu-238 sources (listed in Code of Conduct) – some information on these and some thorium sources will be collected by both NMMSS and NSTS
- A life cycle account of each source
- Transaction based

## APPENDIX E TO PART 20 - NATIONALLY TRACKED SOURCE THRESHOLDS

The Terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only and are rounded after conversion.

	<u>Cat 1 (TBq)</u>	<u>Cat 1 (Ci)</u>	<u>Cat 2 (TBq)</u>	<u>Cat 2 (Ci)</u>
• Actinium-227	20	540	0.2	5.4
• Americium-241	60	1,600	0.6	16
• Americium-241/Be	60	1,600	0.6	16
• Californium-252	20	540	0.2	5.4
• Cobalt-60	30	810	0.3	8.1
• Curium-244	50	1,400	0.5	14
• Cesium-137	100	2,700	1	27
• Gadolinium-153	1,000	27,000	10	270
• Iridium-192	80	2,200	0.8	22
• Plutonium-238	60	1,600	0.6	16
• Plutonium-239/Be	60	1,600	0.6	16
• Polonium-210	60	1,600	0.6	16
• Promethium-147	40,000	1,100,000	400	11,000
• Radium-226	40	1,100	0.4	11
• Selenium-75	200	5,400	2	54
• Strontium-90	1,000	27,000	10	270
• Thorium-228	20	540	0.2	5.4
• Thorium-229	20	540	0.2	5.4
• Thulium-170	20,000	540,000	200	5,400
• Ytterbium-169	300	8,100	3	81

# National Source Tracking System

- Rule will require licensees to report manufacture, transfer, receipt, disassembly, and disposal of nationally tracked sources
- Nationally tracked sources are IAEA Category 1 and 2, and 4 additional isotopes (actinium (Ac) 227, polonium (Po) 210, thorium (Th) 228, and Th 229)
- Licensees provide initial inventory of Category 1 and 2 sources to the NSTS and annually verify and reconcile the information in the system with the licensee's actual inventory.
- Manufacturers must assign a unique serial number to each nationally tracked source.

# National Source Tracking System

- Improve source accountability and give better information to decision-makers
- Data to be Official Use Only
- Be primarily Web-based – simplified online reporting with help desk. Options for reporting by fax, mail, phone
- Will require rulemaking and IT development to implement



# National Source Tracking - Schedule

## Schedule:

- Rulemaking
  - Proposed rule published July 28, 2005
  - Final rule sent to Commission for approval April 6, 2006 following extensive public comment and public meetings
  - To be in place by August, 2006
- System Development
  - Contract awarded in December, 2005 to OAO Lockheed Martin Information Technology
  - Stakeholder workshops for training
  - Operation expected by summer, 2007
  - Second phase with additional user features by summer, 2008