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## **NRC Initiatives on National Source Tracking**

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## Overview

- Background
- Interim Source Inventory
- National Source Tracking System
- Summary and Conclusions



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## **Licensing Background**

- ❖ NRC and Agreement States issue specific licenses (paper)
- ❖ License specifies authorized isotopes, quantities, uses, users and other license conditions
- ❖ Wide range of licenses – almost 22,000 total
  
- ❖ Some devices can be distributed to users without a paper license; vendor advises user of regulations and notifies the regulator of the distribution
- ❖ Safety built-in, lower activity usually
- ❖ Users known as General Licensee
- ❖ Devices tracked by NRC or Agreement States by jurisdiction



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## **Background**

- ❖ Joint NRC/DOE report on RDD recommends development of a national source tracking system
- ❖ IAEA Code of Conduct recommends establishment of a national register
- ❖ NRC develops Interim Database
- ❖ NRC publishes proposed rule in Federal Register on July 28, 2005
- ❖ Final rule to be published Summer, 2006
- ❖ Energy Policy Act of 2005



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### **IAEA Code of Conduct on the Safety and Security of Radioactive Sources**

- ❖ Specifies minimal regulatory measures for IAEA member states to establish
- ❖ Establishes higher level of security for Category 1 and 2 sources including:
  - ❖ A national register of sources
  - ❖ Greater control over import and export of sources
  - ❖ Labeling of high activity sources
  - ❖ Emergency preparedness and response
  - ❖ Prioritization for regaining control over orphan sources
- ❖ Communication to the public



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# Interim Source Inventory

- ❖ Provides “snapshot” of high-risk sources
- ❖ Includes NRC and Agreement State licensees
- ❖ Includes IAEA Category 1 and 2 sources
- ❖ Currently has information on sources possessed by almost 1,400 licensees



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## **Interim Source Inventory (continued)**

- ❖ Each licensee updated yearly
  
- ❖ Database has been used to;
  - Locate sources following Gulf hurricanes
  - Issue advisories and orders for enhanced control measures by licensees
  
- ❖ Database will be used to;
  - Inform the National Source Tracking system design parameters
  - Provide baseline data



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## Licensee Main Information Screen

**Radioactive Sources Interim Inventory**

**2005 NRC Interim Inventory**

**General Information:**

**License Number:**

**License Name:**

License Name 2 or Doing Business As:

**Address1:**

Address2:

**City:**  **State:**  **Zip Code:**

**Primary Contact:** **Backup Contact:**

<b>First Name:</b> <input type="text"/>	<b>Last Name:</b> <input type="text"/>	<b>First Name:</b> <input type="text"/>	<b>Last Name:</b> <input type="text"/>
<b>Telephone:</b> <input type="text"/>		<b>Telephone:</b> <input type="text"/>	
<b>Email:</b> <input type="text"/>		<b>Email:</b> <input type="text"/>	
<b>Title:</b> <input type="text"/>			
CHP, RSO <input type="text"/>			
<b>Fax:</b> <input type="text"/>		<b>Fax:</b> <input type="text"/>	

**Main Business Type:**

Industrial - Manufacturing and Distribution - Other

If an "Other" business type is selected, please be more specific below:

**Number of authorized storage locations:**

four to eight

Mark this License as completed?

Mark this License as updated on  5/19/2005 ?



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## Source Data Information Screen

### Radioactive Sources Interim Inventory

#### 2005 NRC Interim Inventory

##### Sources of Concern:

Incomplete source records are pre-checked in the "Edit?" column.

No.	Isotope	Activity	Manufacturer	Model	Serial #	Date <sup>1</sup>	Edit?	Remove?
1.	Co-60	104.0 Ci	Amersham		1006C-1	03/19/1990	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.	Co-60	104.0 Ci	Amersham		1006C-2	03/19/1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.	Co-60	104.0 Ci	Amersham		1006C-3	03/19/1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.	Co-60	4686.0 Ci	International Isotopes Idaho, Inc.	INIS-SF-2.8-4.2-AD	0505-01	06/01/2005	<input type="checkbox"/>	<input type="checkbox"/>
5.	Co-60	5990.0 Ci	International Isotopes Idaho, Inc.	OUR Scientific C375/SCS-210	OSI/I 1-2,4,6-32	12/14/1999	<input type="checkbox"/>	<input type="checkbox"/>
6.	Co-60	6012.0 Ci	General Electric Company	AB Elekta 43047	GH1-GH201	09/01/2000	<input type="checkbox"/>	<input type="checkbox"/>
7.	Co-60	6141.0 Ci	General Electric Company	AB Elekta 43047	DB1-DB201	07/01/1997	<input type="checkbox"/>	<input type="checkbox"/>

Continue



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## Source Data Screen

### Radioactive Sources Interim Inventory

#### 2005 NRC Interim Inventory

##### Edit Source Data:

Please complete or modify the 3 sources that were identified on the previous screen and click on button to proceed to the next screen.

##### Source Number 1

Isotope	Activity	Units	Serial No.	Other ID	Date <sup>1</sup>
Co-60	104.0	curies	1006C-1		03/19/1990
Manufacturer			If "not listed" Write in Here:		
Amersham					
Model Number			If "not listed" Write in Here:		
--not listed--					

##### Source Number 2

Isotope	Activity	Units	Serial No.	Other ID	Date <sup>1</sup>
Co-60	104.0	curies	1006C-2		03/19/1999
Manufacturer			If "not listed" Write in Here:		
Amersham					
Model Number			If "not listed" Write in Here:		
--not listed--					



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# National Source Tracking System

- System will allow State and Federal agencies to track transactions
- Covers sources from origin (fabrication, import) to disposition (disposal, export, decay below Category 2 level)
- Will include Agreement State, DOE, & NRC sources
- Licensees will be able to enter information online or by fax or mail (by close of business, next business day after transaction)
- Does not track location in real time and does not track transportation other than notifications of shipment and arrival



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## **National Source Tracking Final Rule**

- Reporting is mandatory
- Manufacturers required to assign unique serial number
- Initial reporting of Inventory
- Source transaction reporting
- Correction of errors within 5 business days of discovery
- Annual reconciliation and verification
- Methods for reporting



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## **Final Rule**

### Thresholds for Reporting

- IAEA Code of Conduct Categories 1 and 2
  - Commission added 4 isotopes to list
- Most common isotopes
  - Co-60 (0.3 TBq)
  - Cs-137 (1 TBq)
  - Ir-192 (0.8 TBq)
  - Am-241 (0.6 TBq)



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## **Final Rule Initial Inventory**

- Licensees shall report initial inventory
- Data from interim database will be transferred to NSTS
  - Licensees verify/update



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## **Final Rule Source Transactions**

- Licensees will be required to report
  - Manufacture of new sources
  - Transfer to another licensee
  - Receipt of sources
  - Disposal of sources
  - Disassembly of sources
- System will automatically account for decay below Category 2 threshold and offer to remove the source with licensee confirmation



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## **Final Rule Manufacture**

- Company identification information
- Radioactive material in source
- Initial source strength at the time of manufacture
- Manufacturer, model, and serial number
- Manufacture date



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## **Final Rule Transfer and Receipt**

- Company identification information of shipping and receiving company
- Source information
- Shipping date
- Estimated arrival date
- Actual receipt date
- Waste manifest number and container identification, if applicable



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## **Final Rule Disposal**

- Company identification information
- Manifest number
- Container identification
- Date of disposal
- Method of disposal



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## **Final Rule Error Correction**

- Correct errors in previously filed reports
- File missed transaction report
- Within 5 business days of discovery



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## Summary and Conclusion

- Used to meet international commitments for IAEA Code of Conduct
- Final rule Summer 2006
- System development ongoing
  - First release of system planned for Spring 2007
  - Second release planned for Spring 2008



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