

**NMMSS Users Annual Training Meeting  
Atlanta, Georgia—May 22-24, 2007**

# **Department of Energy Draft Notice N 234.X**

**Reporting of Radioactive Sealed Sources**

**Fritz Strydom  
NAC International**

# Acknowledgement and Thanks

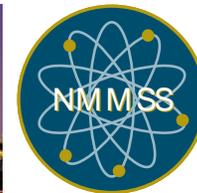
I'd like to thank the following people who contributed to the preparation of this presentation:

- Len Myers, SAIC
- Ruth Watkins, DOE/HS-71
- Melanie May, DOE/HS-71
- Joe Schelling, Sandia National Labs



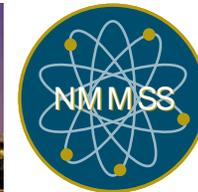
# Topics

- Draft Notice N 234.X
- Regulatory Authority
- Radiological Source Registry & Tracking (RSRT) database origins
- NRC/DOE interactions
- Draft Notice Contents
- Event Types Reported To DOE Central System
- Next Steps



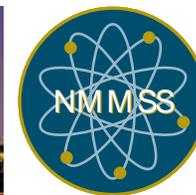
# Draft Notice Status

- DOE Draft Notice N 234.X
- Posted on DOE RevCom system for formal review and comment March 21, 2007
- HS-71 is currently coordinating comment resolution in RevCom for inclusion into final version of the notice
- Compliance required within 6 months of date of Final Notice



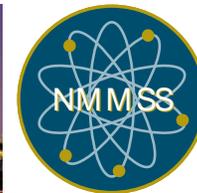
# Regulatory Authority

- 10 CFR Parts 20 and 32
  - NRC requirements amended in February 2007
  - Implements NSTS for Category 1 and 2 sealed sources
- DOE Draft N 234.X
  - Site inventory reporting to a central DOE database
  - Transaction reporting and reconciliation for select radioactive sealed sources
  - Reporting appropriate data to the National Source Tracking System (NSTS)
- 10 CFR Part 835, Subpart M and Appendix E
  - DOE requirements for health and safety aspects of usage, handling, and storage of sealed sources



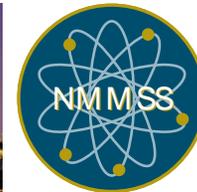
# RSRT System Origins

- Radiological Source Registry & Tracking database
- DOE/NRC Interagency Working Group on Radiological Dispersal Devices
  - Initiated as post-9/11 threat response
  - May 2003 report recommendations
- Based on International Atomic Energy Agency (IAEA) efforts
  - Objective to strengthen the safety and security of radioactive sources
  - Approved by Board of Governors September 2003

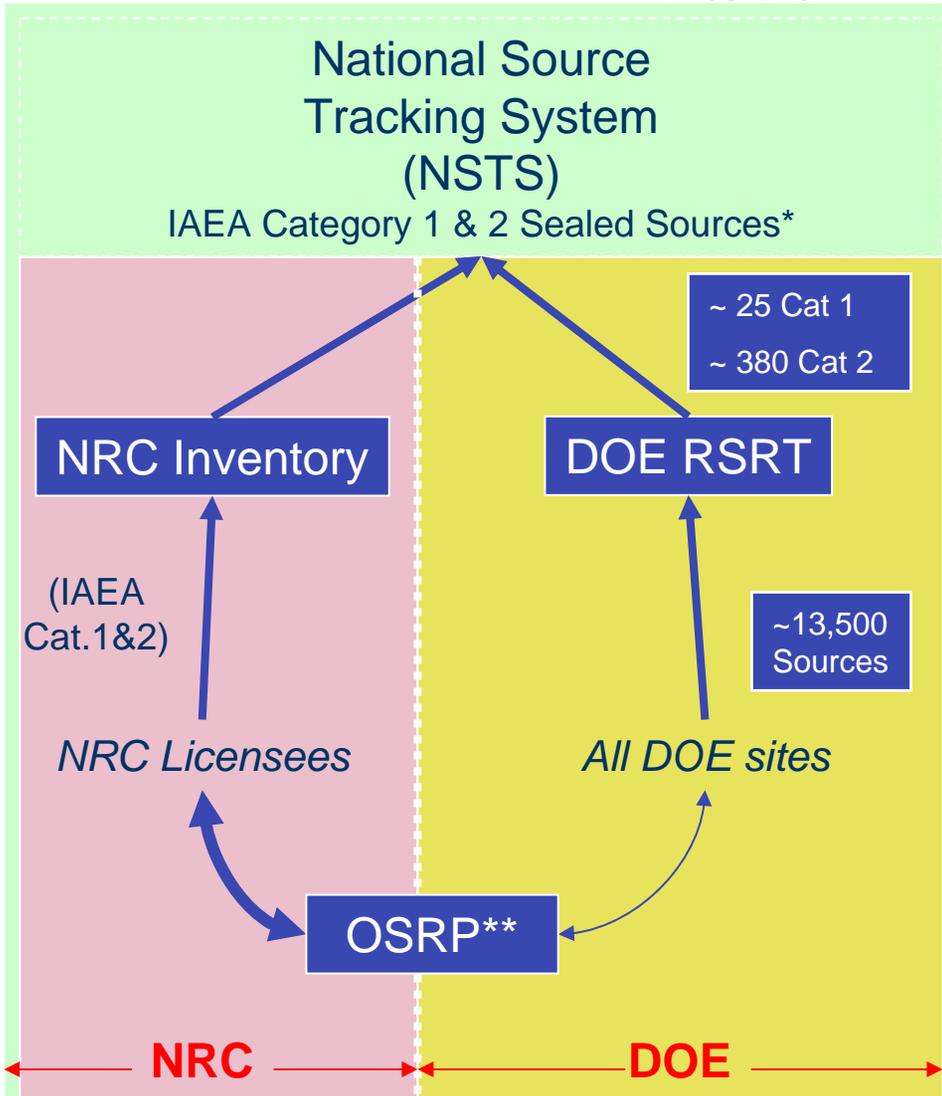


# RSRT System Origins

- Designed to interface with National Source Tracking System
  - Nuclear Regulatory Commission (NRC) led interagency development effort
  - IAEA designated Category 1 & 2 sources
- Nov 2003 - Interim database established
  - Based on data from existing Non-actinide Isotopes and Sealed Source (NISS) database
- March 2004 - DOE wide data call issued
  - Based on 10 CFR 835 health and safety requirements
  - Resulted in June 2004 updated baseline
  - Baseline last updated in 2005



# NRC/DOE Interactions



**NMMSS**

- National inventory (classified system)
- ~12 materials (U, Pu, Th, 9 others)
- DOE O 474.1A
- Bulk material rollup (including sealed sources)

← **DOE NRC MC&A**

Important nuclides not tracked by NMMSS:

- Co-60
- Cs-137
- Sr-90

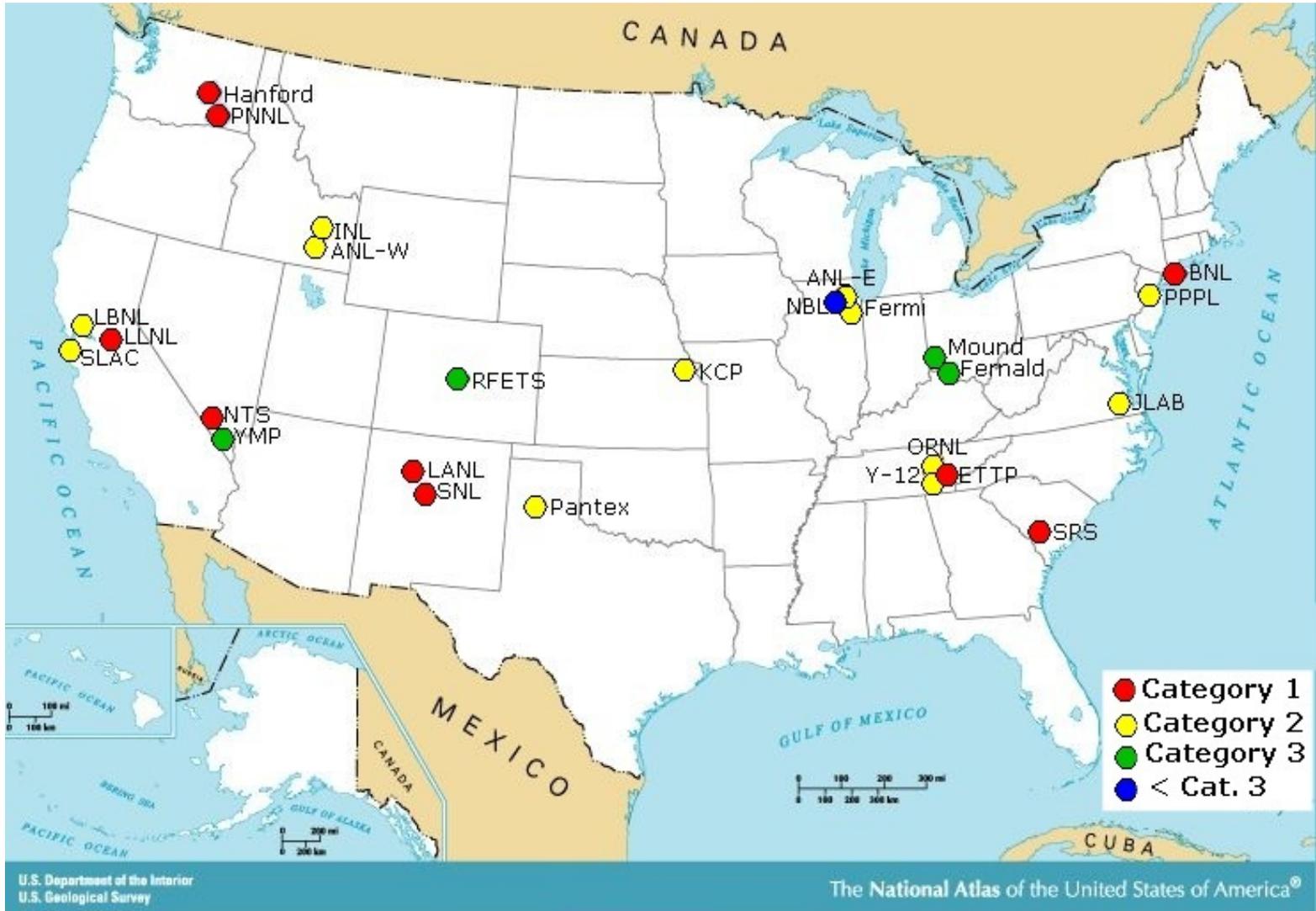
**\*\* OSRP: NNSA's Off-Site Source Recovery Program**

\*IAEA Cat. 1 typically >1000 Ci Cat. 2 typically 20 Ci > x >1000 Ci

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# Sources of Interest at DOE Facilities

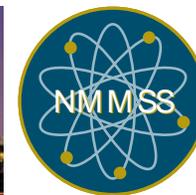


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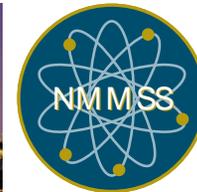
# Draft Notice Objectives

- Establish DOE inventory reporting requirements for radioactive sealed sources in support of IAEA Code of Conduct and guidance
- Establish DOE transaction reporting requirements for select sealed sources in support of the NSTS
- Integrate these security requirements with existing safety accountability and control functions for radioactive sealed sources
- Establish and assign responsibilities for required reporting



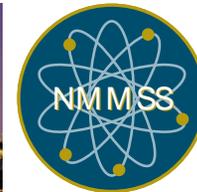
# Draft Notice Requirements

- DOE programs must help prevent sabotage involving sealed sources that could adversely affect national security and the health and safety of employees, the public, and the environment
- DOE will maintain a centralized reporting capability to provide information required by the NSTS
- Unique serial numbers must be assigned to any newly manufactured Category 1 or 2 sealed sources
- Each DOE site must report its initial inventory and annually verify their book inventory (all 10 CFR 835, Appendix E sources)
- For Category 1 and 2 sources, transaction reporting is required and physical inventories must be reconciled with the centralized DOE system annually
- Verification of authorities for transfer of radioactive materials and radioactive sealed sources must be obtained



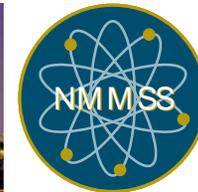
# Draft Notice Responsibilities

- Chief Health, Safety and Security Officer
  - Develop, coordinate, and clarify policies and standards for reporting of radioactive sealed sources as defined in the Notice
  - Operate and maintain the DOE centralized system
  - Report required data from the DOE central database to the NSTS when it becomes operational
  - Maintain national-level liaison and agreements with NRC and other Federal agencies



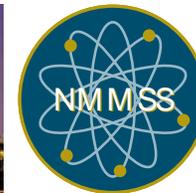
# Draft Notice Responsibilities

- Heads of DOE/NNSA Elements
  - Ensure programs are established and implemented to conform to the Notice requirements
  - Evaluate the established programs to ensure compliance with Department requirements
  - Review contracts and procurement requests as necessary to ensure requirements are included in contracts



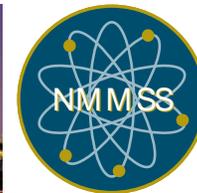
# Draft Notice Responsibilities

- Heads of DOE/NNSA Field Elements
  - Develop and implement programs to conform to the notice requirements
  - Identify and categorize radioactive sealed sources under their cognizance
  - Ensure the maintenance of records
  - Conduct oversight tests and evaluations of implemented programs
  - Ensure personnel assigned to implement the programs have training appropriate to the task and understand their responsibilities



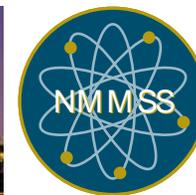
# Draft Notice Responsibilities

- Contracting Officers
  - After being notified, incorporate the DOE N 234.X Contractor Requirements Document (CRD) into affected DOE contracts
  - Assist originators of procurement requests who want to incorporate requirements of the CRD in new contracts, as appropriate



# Required Fields

Data Field	Inventory Reporting (Appendix E 10 CFR 835)	Transaction Reporting for Cat 1 and 2 Sources				
		Manufacture	Shipment	Receipt	Disassemble	Dispose
Unique Site Source ID	X	X	X	X	X	X
Radionuclide(s) in the source (single or multiple)	X	X	X	X	X	X
Initial or current activity in Terabecquerels (TBq).	X	X	X	X	X	X
Activity Date	X	X	X	X	X	X
Neutron component (Yes/No)	X	X	X	X	X	X
Manufacture date of source (if known)	X	X	X	X	X	X
The Reporting Identification Symbol (RIS Code)	X	X	X	X	X	X
Facility/building name	X	X	X	X	X	X
Description of the source	X	X	X	X	X	X
Physical Form (solid/liquid)	X	X				
Manufacturer, model, serial number or other unique identifier.	X	X	X	X	X	X
Name and phone number for Individual preparing the report	X	X	X	X	X	X



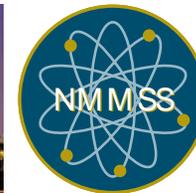
# Required Fields

Data Field	Inventory Reporting (Appendix E 10 CFR 835)	Transaction Reporting for Cat 1 and 2 Sources				
		Manufacture	Shipment	Receipt	Disassemble	Dispose
Name/address of shipping and/or recipient facilities and License number (if appropriate)			X	X	X	X
Date of shipment or receipt			X	X	X	X
Estimated arrival date						
Waste manifest number (if applicable)			X	X	X	X
Container ID			X	X	X	X
Import/Export License number (if appropriate)			X	X	X	X
Disposal / disassembly date					X	X
Method of Disposal					X	X
Container ID for final disposition					X	X



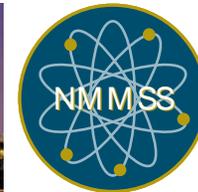
# Events Reported to DOE Central System

- Initial inventory and any subsequent corrections
- Additions to inventory
  - Manufacture
  - Receipt
  - Recycle Receipt
  - Import Receipt
- Removals from inventory
  - Transfer (Shipment)
  - Disposal (endpoint)
  - Export (endpoint)
  - Disassemble (endpoint)
  - Recycle Removal (Retains same serial # so is not an endpoint)
  - Loss/Theft
  - Destroy (endpoint)



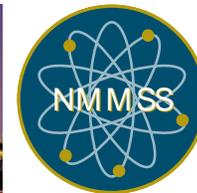
# Next Steps

- Office of Health, Safety and Security
  - Complete RevCom review and issue final notice
  - Establish DOE centralized reporting and tracking system (~13,500 sources in inventory of which ~ 405 Cat 1 and Cat 2 will require tracking through transaction reporting)
  - Document procedures for reporting to the DOE centralized system



# Next Steps

- Heads of DOE/NNSA Elements
  - Ensure programs are established and implemented to conform to the Notice requirements at field elements under their cognizance
- Heads of DOE/NNSA Field Elements
  - Develop and implement programs to conform to the Notice requirements



# Summary

- Radiological Source Registry & Tracking has been underway since FY 2003
- DOE requirements formalized by DOE N 234.X
- DOE policy reflects national and international efforts for control of select sealed sources
- Emerging sealed source security requirements are being integrated with the existing safety accountability and control functions
- Approximately 13,500 DOE sources would be subject to inventory reporting
- Of these approximately 25 Cat 1 and 380 Cat 2 would be subject to transaction reporting to NSTS

