



# Changes to DOE Policy Related to NMMSS Reporting

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# DOE M 470.4-6 Under Revision



- Major Revision – No longer Parts A and B
- New manual - General MC&A requirements, detailed requirements in site MC&A plan, system effectiveness evaluation required
- NMMSS reporting instructions moved to instruction's manual/user's guide managed by HS-1.22



# Role of NMMSS

## Ownership of NMMSS

## Reporting Requirements

- NMMSS supports many programs:  
Domestic safeguards & security, materials management, financial accounting, international reporting, possibly emergency management
- Currently NMMSS instructions are part of security policy. Should they be?
- Much of the cost of program not S&S related.



# NMMSS/NMIS Original Customers Circa 1964



- Major Organizations to be served by NMIS
- Divisions Responsible for
  - Procurement of Raw Materials
  - Production of Special Nuclear Materials
  - Military Applications
  - Naval Reactors
  - Administering Activities Associated with International Cooperation
  - Nuclear Materials Management, Control and Accounting
- Office of Controller in financial accounting for nuclear materials
- Office of Regulation for regulation of private nuclear industry



# Why Move Requirements

- Greater flexibility in revising reporting instructions; more appropriate in another document
- HS-1.22 has more in-depth knowledge of NMMSS, LANMAS, and non-S&S NMMSS customer needs
- Office of Security Policy can focus on Safeguards and Security matters



# Reporting Instructions

## Two Examples

### Example 1.

Facilities transmitting data to the NMMSS by automated means need not complete DOE F DP-749, but must follow the data format defined below.

- (1) Negative Values. Enter a minus sign or a dash preceding the digits to show a negative number.
- (2) Transaction Identification Information (columns 1–18 on DOE F DP-749), described below, is common to both header and detail records . . .



# Reporting Instructions Second Example

## Example 2.

INSTRUCTIONS FOR COMPLETING DOE/NRC F 742. Data submitted on paper will be reported as follows.

- a. **Block 1.** Enter the name and address of the facility.
- b. **Block 2.** Enter the appropriate possession license numbers if the reporting facility is a licensed contractor.
- c. **Block 3, RIS.** Enter the RIS under which the material being reported is or was held. Submit a separate DOE/NRC F 742 for each RIS.
- d. **Block 4, Report Period.** Enter inclusive dates (MM/DD/YYYY).
- e. **Block 5, Material Type.** Enter the name of the material (See Table XV-1). NOTE: Submit a separate report for each type . . .



# Precedents: SIMMS and FACTS Databases

- SIMMS – Safeguards and Security Information System
- FACTS – Foreign Travel Management System
- General requirement to report to database in DOE directives
- Specific reporting instructions provided in users' manuals.



# Where we are with Manual?



- Zero-based review came up with new draft – briefed at October MC&A quality panel
- Internal HS Review
  - Good statement of basic principles and objectives
  - Weren't enough performance metrics
- Five day meeting; Developed new objectives and metrics
- Distinct set of requirements for Feds and contractors
  - What is Federal role?
  - What is contractor role?
- Very Preliminary
  - Contractor: Objectives and performance metrics for operator. Criteria for determining if objectives met.
  - Feds: Requirements to review and approve contractor program. Provide set of criteria for determining if contractor meeting objectives.



# Different Subject - Source Materials



- Old issue – Should requirements for MC&A source material be part of the MC&A Manual? Affects how manual revised.
- Source materials - normal uranium, depleted uranium, and thorium
- Need to report to NMMSS for several reasons, but is it S&S?
- Where else might you include it – materials management, property management, financial accounting?
- Possible reasons for including as part of S&S MC&A
  - Proliferation concern from international safeguards perspective
  - Exported controlled
  - Required to be tracked under bilateral agreements if foreign-obligated



# Source materials International Safeguards

- Nonproliferation Treaty (NPT)/ INFCIRC 140
  - Article III
    - Non-weapons States. “Safeguards required by this article shall be applied on all source or special fissionable material in all peaceful nuclear activities . . .”
    - Each State Party to the Treaty. undertakes not to provide :  
(a) source or special fissionable material or (b) equipment or material . . . to any non-nuclear-weapons State unless the source or special fissionable material is subject to the safeguards required by this Article.



# Source materials International Safeguards

- IAEA INFCIRC 153/ The Structure and Content of Agreements Between the Agency and States
  - • •
  - “the State shall establish and maintain a system of accounting and control of all nuclear materials subject to safeguards under the agreement.”
  - can terminate safeguards on materials consumed or “diluted in such a way that is no longer usable from the point of view of safeguards, or has become practically irrecoverable.”



# Source materials International Safeguards

- IAEA INFCIRC 153/ The Structure and Content of Agreements Between the Agency and States
  - . . .
  - State can exempt up to
    - Ten metric tons of natural and depleted uranium (above 0.59% enrichment)
    - Twenty metric tons of depleted uranium with an enrichment of 0.59% enrichment or less
    - Twenty metric tons of thorium
  - Significant quantity of high enriched uranium is 25 kg
    - From IAEA Safeguards Glossary



# Source Materials/ Export Controls



- 10 CFR 110.22 -- Export and Import of Nuclear Equipment and Material
  - General license for source material
    - 10 kilograms per shipment
    - 1000 kilograms per year to any one country
  - Excluded countries
    - Embargoed destinations: Cuba, Iran, Iraq, North Korea, Sudan, Syria
    - Restricted destinations: 10 countries, includes Afghanistan, India, Israel, and Pakistan



# Source Materials/ Export Controls



- IAEA INFCIRC 254, *Communications Received from Certain Members States Regarding Guidelines for the Export of Nuclear Material, Equipment, and Technology*
- Export Trigger List, INFCIRC 254, Appendix A. Exempts quantities of source material less than
  - 500 kilograms natural uranium
  - 1000 kilograms depleted uranium
  - 1000 kilograms thorium
  - Additionally, government must be satisfied material is to be used in non-nuclear activities, e.g. production of alloys or ceramics



# What Should MC&A Requirements be for Source Materials?



- Current requirements
  - Account for; document inventories and transactions
  - Report to NMMSS
  - Inventory in a frequency and manner approved by the DOE Cognizant Security Authority (CSA)
  - Other requirements determined by DOE CSA
- What should inventory requirements be?
- Minimal quantities? Inventory crates, boxes, or drums as items? Loss detection criteria? What level of assurance? Suggestions?



# Summary



- Still like to remove reporting instructions manual can be better addressed through a users manual than a DOE directive
- In process of developing less compliance-based, more performance-based requirements for site MC&A systems.
- Export control, international safeguards, and foreign obligations concerns with source material
- Depleted and normal uranium part of overall uranium balance at enrichment and down-blending facilities.