Accountability
Performance
Accuracy

The Nuclear Materials Management Safeguards System

NMMSS 2016

Annual Users Training Meeting

May 9-12, 2016 | New Orleans, LA

Forms and Instructions

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- **Forms and instructions**
  - Forms used for reporting to NMMSS
  - Basic instructions for filling out the forms
    - NRC instructions
      » NUREG/BR 0006 and 0007
    - DOE instructions
      » DOE O 474.2 and NMMSS User Guide

- **Forms for reporting to NMMSS**
  - DOE/NRC Form 741 - Nuclear Material Transaction Report
  - DOE/NRC Form 742 - Material Balance Report
  - DOE/NRC Form 742C - Physical Inventory Listing
  - DOE/NRC Form 740M - Concise Note

- **Today's focus is on the transaction form 741**
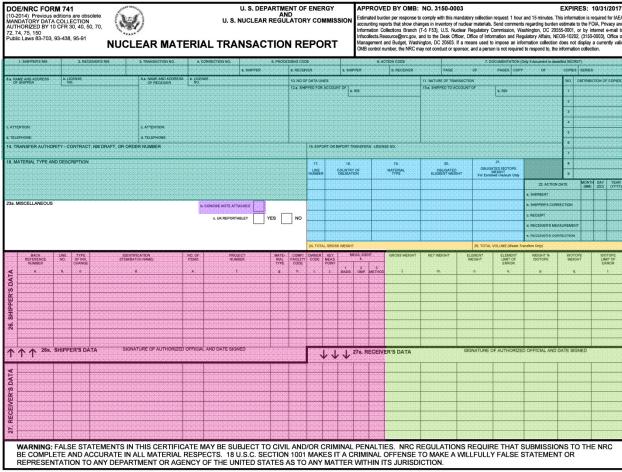 - Used by DOE and NRC

DOE/NRC Form 741
Record Types

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1. Header
2. Descriptive (Detail)
3. Import/Export
4. Gross Weight/Volume
5. Quantitative (Detail)
6. Concise Notes
7. Obligated Material

- Form 741 is used to show all activity that cause gains and losses to your site inventory
  - Shipping and receiving
  - Decay
  - Rounding
  - Normal operating loss
  - Production
  - Fission and Transmutation
  - Corrections

- **Nuclear Material Transaction Report**
  - What do I do with this form?
    - Boxes 1- 27s – Do I have to fill in all blanks?
    - What are these titles?
      - » RIS
      - » Transaction number
      - » Processing Code
      - » Action Code

- Some of the boxes on the form are always used
  - Box 1 Shipper's RIS
  - Box 2 Receiver's RIS
  - Box 3 Transaction No.
  - Box 5 Processing Code
  - Box 6 Action Code
  - Box 22 Action Date

- Other fields are used sometimes
  - Box 4 Correction No. (Used only when correcting an existing document)
  - Box 11. Nature of Transaction
  - Box 26 Shipper's Data
  - Box 27 Receiver's Data

- In the following slides we will discuss what is to be input into the boxes of the 741

- ## What is a RIS?
  - Reporting Identification Symbol – Unique to each facility
    - NRC sites usually start with letters X, Y, or Z
      - » XYZ, YBX, ZZY
    - DOE sites start with A, C, D, F, G, H, J, K, L, N, P, S, T, and U
      - » ACD, FDD, LXA
    - Waste RIS's starting with "V" can be DOE or NRC
      - » VDM
    - Foreign RISs start with "R" and have 4 characters
      - » RDAY
    - Department of Defense RISs start with "Q"
      - » QZA

- **What is a RIS? (continued)**
  - Identifies a site in NMMSS
    - Site may have more than one RIS
    - Contact information – NMMSS directories: D2 (DOE/NNSA), D3 (NRC), and D15 (Foreign)
      - Facility name
      - Address
      - Personnel
    - NMMSS reports for a site are generated by RIS
      - Transactions
      - Inventory
      - Material Balance Report

- Lets start filling in a 741
  - Some of the boxes require specific codes that can be found in the following:
    - NRC NUREG/BR-0006
    - NMMSS User Guide (DOE)

  - These will be discussed as we work through the 741

- Example – Shipper XYZ ships element weight 100 grams enriched uranium and isotope weight 5 grams U235 (4.95% U235) of privately owned material to receiver ZZY (This is XYZ's sixth shipment to this receiver) We are filling in the shipper's document. Gross weight of shipping package is 50 kilograms.
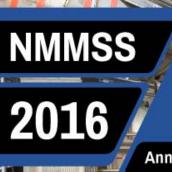
- Box 1 Shipper RIS - XYZ

- Box 2 Receiver RIS - ZZY

- Box 3 Transaction number – 6
  - Transaction number can only be used one time for a shipper and receiver RIS combination

Process Codes

Code	Description
A	ADD
	Initial entry of data
C	REPLACE
	Replacement of an existing entry
D	DELETE
	Removal of an existing entry

- Box 5 Processing Code – A
  - "A" means initial time this document is sent to NMMSS
  - Processing codes can be used by shipper and receiver

Action Codes

Code	Description	Ship	Recv
A	Identifies shipper's original data	X	
B	Identifies receiver's data accepting weights without measurement		X
C	Identifies shipper's adjustment or acceptance/ acknowledgment of a receiver's adjustment	X	
D	Identifies receiver's adjustment or acceptance/acknowledgement of a shipper's adjustment		X
E	Identified receiver's independent measurement		X

- **Box 6 Action Code – A**
  - "A" means this is the shipper's original data
  - Action codes are unique to shipper and receiver

- **Box 10 No of Data Lines**
  - Enter number of lines that will be listed in Box 26 Shipper's Data

- **Box 22.a. Shipment action date**
  - Do not send with future date

- **Box 24 Total gross weight of package shipped**
  - Weight of package in kilograms

- **Any questions on what has been filled in top portion of the form?**

- Box 26 Shipper's Data

- Box 26.b. Line No.
  - Begin with line #1 and continue consecutively if there are multiple lines

- Box 26.e. No. of Items
  - Number of items in the shipment for each detail line

Nuclear Material	Material Type	Units
Depleted Uranium	10	Whole Kilogram
Enriched Uranium	20	Whole Gram
Plutonium-242	40	Whole Gram
Americium-241	44	Whole Gram
Americium-243	45	Whole Gram
Curium	46	Whole Gram
Californium	48	Whole Microgram
Plutonium	50	Whole Gram

Material Types, Codes, & Reporting Units

Material Type	Material Type	Units
Enriched Lithium	60	Whole Kilogram
Uranium-233	70	Whole Gram
Normal Uranium	81	Whole Kilogram
Neptunium-237	82	Whole Gram
Plutonium-238	83	Gram to Tenth
Deuterium	86	Tenth of Kilogram
Tritium	87	Hundredth of Kilogram
Thorium	88	Whole Kilogram
Uranium in Cascades	89	Nuclear Material

- **Box 26.g. Material Type**
  - Enriched uranium is material type 20

- **Box 26.h. Comp/Facility Code**
  - Describes the physical and chemical form of the material
  - Find comp codes in NMMSS report D-25 or Appendix A of NUREG/BR-0006
    - Assembled Items Product comp code 309

Owner Code	Type of Ownership of Material
G	DOE owned material
J	Non-DOE owned material

Box 26.i.Owner code
   Use private material code J

- Box 26.n. Element Weight
  - Use 100 grams for element weight

- Box 26.p. Weight % Isotope
  - Use weight percent of U235 - 4.95%

- Box 26.q. Isotope Weight
  - Use isotope weight 5 grams U235

- Box 26s. Signature of Authorized Official and Date signed

Questions?