



Accountability
Performance
Accuracy

The Nuclear Materials Management Safeguards System

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Obligations Accounting

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Obligations Accounting

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Foreign Obligation Concepts

- Foreign obligations = Assurances that material or equipment is transferred pursuant to an Agreement for Peaceful Nuclear Cooperation
- License required to import/export obligated nuclear material
- Agreements for Cooperation are necessary, per Section 123 of the Atomic Energy Act of 1954, as amended
- Allow U.S. to trade nuclear material and equipment with foreign countries
- Provide Safeguards and peaceful use guarantees

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Activities that May Require Associated Obligations

- Imports of material
 - Natural uranium to conversion and enrichment plants
 - Enriched uranium to fuel fabrication facilities
 - Return of spent fuel from foreign research reactors
- Exports of material
 - Enriched uranium
 - Natural uranium
 - Fabricated fuel assemblies
- Retransfers
- Obligation Exchanges



Activities that May Require Associated Obligations (Continued)

- Nuclear loss
 - Plutonium Decay
 - U^{235} fission
- Production
 - Pu production
- Category changes
 - NU → DU and EU in enrichment
 - NU → LEU via blending
- Others
 - Shipper/receiver differences
 - Use of Equipment

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123 Agreement Communications

U. S. Bilateral Agreements for Peaceful Nuclear Cooperation Pursuant to Section 123 of the Atomic Energy Act of 1954, as amended, Agreements in Force as of September 2014:

- Argentina
- Australia
- Bangladesh
- Brazil
- Canada
- China
- Colombia
- Egypt
- European Atomic Energy Community (Euratom)
- India
- Indonesia
- International Atomic Energy Agency (IAEA)
- Japan
- Kazakhstan
- Korea, Republic of
- Morocco
- Norway
- Russia
- South Africa
- Switzerland
- Taiwan
- Thailand
- Turkey
- Ukraine



123 Agreement Communications (Continued)

Prior Notifications

Typical process regarding Prior Notifications

- Facility associated with foreign entity applies for license
- Entity issues Prior Notification Communication to U.S.
 - Assure material, upon receipt, will be subject to the terms and agreement of the associated 123 agreement
 - Proposed recipient has authorization to receive material
 - Proposed recipient accepts responsibility to physically protect material.
- U.S. Acknowledges receipt of request

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123 Agreement Communications (Continued)

Confirmation Notifications

Typical process regarding Confirmation Notifications

- Entity issues Confirmation Communication to U.S.
- If a retransfer, Entity issues Confirmation Communication to respective 3rd Country/Entity
- U.S. Acknowledges receipt of confirmation



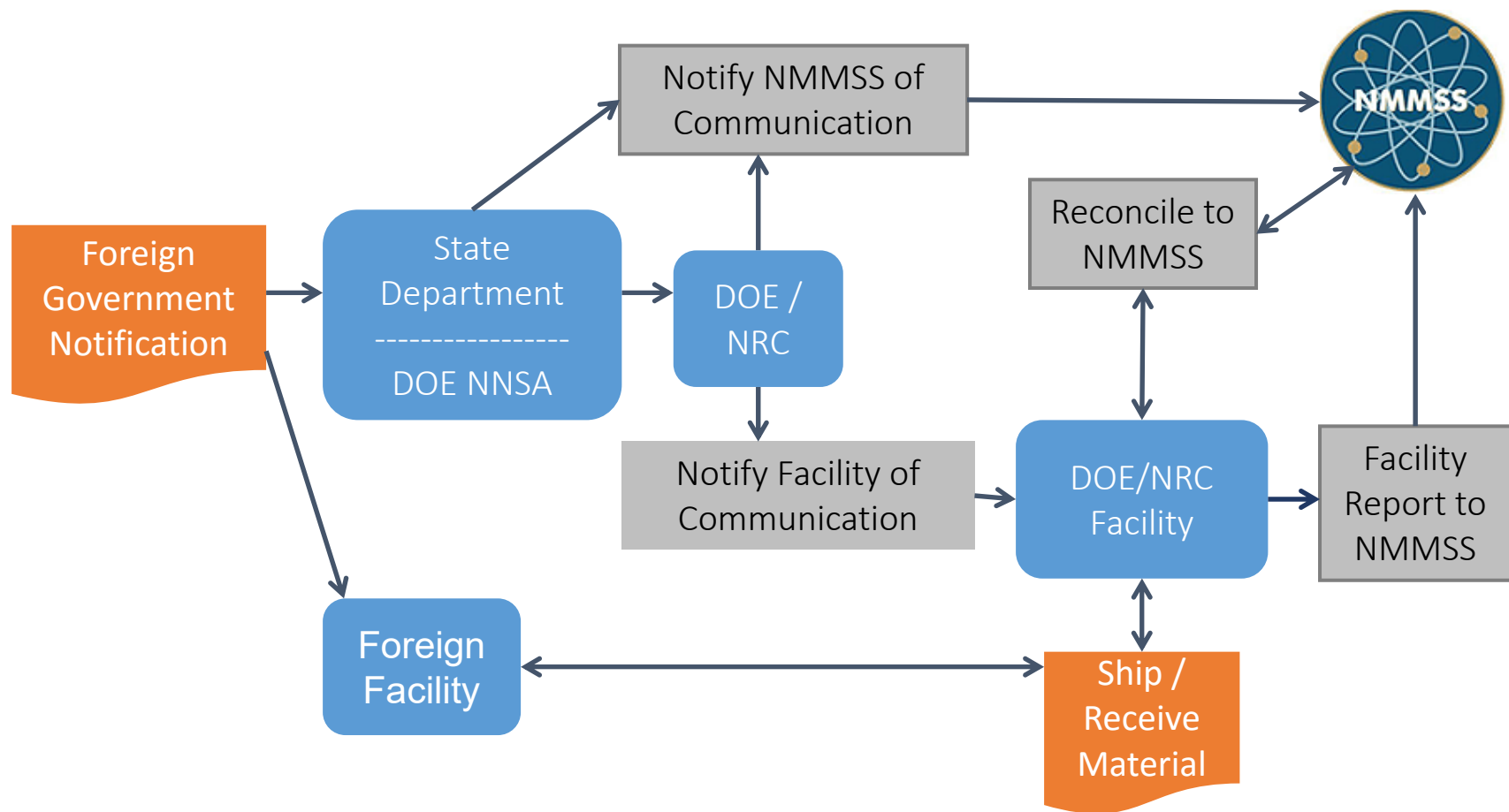
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Requirements for Reporting (Continued)

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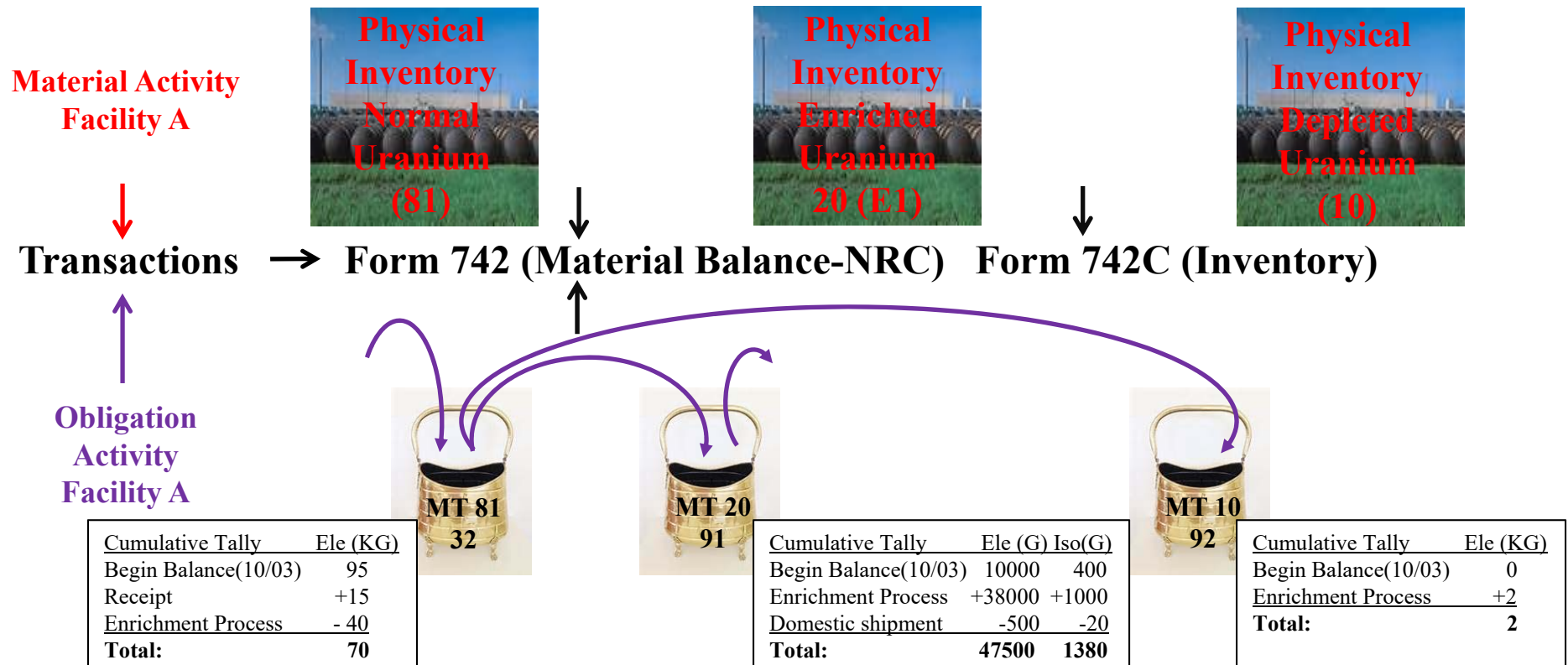
NMMSS Implementation of Foreign Obligations

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Example: Facility A and the Obligation Challenge!



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NMMSS Implementation of Foreign Obligations (Continued)

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- Action codes X/Y implement foreign obligations exchanges between facilities
- Obligations effective for transactions with an action date of 10/1/03 and later
- Majority of foreign obligations are held at NRC facilities.
- Periodic foreign entity reporting: all activity reported to foreign governments originate from 741 data.



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Foreign Obligated Material Types

Type	Domestic Code	Import/Export Code	Reportable Unit of Measurement
Depleted Uranium	10	D	Kilogram Uranium
Enriched Uranium	20	EG	Gram Uranium Gram U-235
Plutonium	50	P	Gram Plutonium
Uranium-233	70	EK	Gram Uranium Gram U-233
Natural Uranium	81	N	Kilogram Uranium
Thorium	88	T	Kilogram Thorium



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Foreign Obligation Country Codes (Transactions)

Code	Country Obligation
31	Australia
32	Canada
33	Euratom
34	Japan
35	People's Republic of China
36	Russia
37	Switzerland
38	Argentina
39	Brazil
40	Chile
65	Japan/Russia
66	Euratom/Russia
67	Australia/Japan/Russia
68	Canada/Japan/Russia

Code	Country Obligation
69	Euratom/Japan/Russia
81	Australia/Japan
82	Canada/Japan
83	Euratom/Japan
84	Australia/Euratom/Japan
85	Canada/Euratom/Japan
86	China/Japan
87	Australia/Japan
88	Australia/Canada/Euratom
91	Australia/Euratom
92	Canada/Euratom
96	Australia/Russia
97	Canada/Russia



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Foreign Obligation Country Codes (Transactions)

Code	Country Obligation
70	LES Centrifuge Enrichment/Japan
71	Australia/Japan/LES Centrifuge Enrichment
72	Canada/Japan/LES Centrifuge Enrichment
73	Euratom/Japan/LES Centrifuge Enrichment
74	Australia/Euratom/Japan/LES Centrifuge Enrichment
75	Canada/Euratom/Japan/LES Centrifuge Enrichment
76	China/Japan/LES Centrifuge Enrichment
77	Australia/Canada/Euratom/Japan/LES Centrifuge Enrichment
90	LES Centrifuge Enrichment
93	LES Centrifuge Enrichment/Australia
94	LES Centrifuge Enrichment/Canada
95	LES Centrifuge Enrichment/Euratom



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Facility Transaction Reporting (DOE/NRC Form 741)

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DOE/NRC FORM 741
(10-2014) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70,
72, 74, 75, 150
Public Laws 83-703, 93-438, 95-91

**U. S. DEPARTMENT OF ENERGY
AND
U. S. NUCLEAR REGULATORY COMMISSION**

APPROVED BY OMB: NO. 3150-0003
Estimated burden per response to comply with this mandatory collection request: 1 hour and 15 minutes. This information is required for IAEA accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

EXPIRES: 10/31/2017

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS		2. RECEIVER'S RIS		3. TRANSACTION NO.		4. CORRECTION NO.		5. PROCESSING CODE		6. ACTION CODE		7. DOCUMENTATION (Only if document is classified SECRET)	
a. SHIPPER		b. RECEIVER		a. SHIPPER		b. RECEIVER		PAGE OF		PAGES COPY OF		COPIES SERIES	
8. a. NAME AND ADDRESS OF SHIPPER		b. LICENSE NO.		9. a. NAME AND ADDRESS OF RECEIVER		b. LICENSE NO.		10. NO OF DATA LINES		11. NATURE OF TRANSACTION		12. a. SHIPPED TO ACCOUNT OF	
c. ATTENTION:		d. ATTENTION:		e. ATTENTION:		f. ATTENTION:		13. a. SHIPPED TO ACCOUNT OF		b. RIS		14. DISTRIBUTION OF COPIES	
14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER		15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.		17. LINE NUMBER		18. COUNTRY OF OBLIGATION		19. MATERIAL TYPE		20. OBLIGATED ELEMENT WEIGHT		21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only	
16. MATERIAL TYPE AND DESCRIPTION		22. ACTION DATE		MONTH (MM)		DAY (DD)		YEAR (YYYY)		a. SHIPMENT		b. SHIPPER'S CORRECTION	
23a. MISCELLANEOUS		b. CONCISE NOTE ATTACHED		c. RECEIPT		d. RECEIVER'S MEASUREMENT		e. RECEIVER'S CORRECTION		f. WEIGHT % ISOTOPE		g. ISOTOPE WEIGHT	
26. SHIPPER'S DATA		26s. SHIPPER'S DATA		27. RECEIVER'S DATA		27s. RECEIVER'S DATA		28. OFFICIAL AND DATE SIGNED		29. OFFICIAL AND DATE SIGNED		30. OFFICIAL AND DATE SIGNED	

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.



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741 Detail Lines Versus 741 Obligation Lines

The sum of 741 obligation lines for a given material type can not be greater than the declared 741 detail line(s) sum for the material type.

741 Obligations

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only
1	31	81	1238	
2	92	20	2026	97

741 Detail Lines

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATE- RIAL TYPE g.	COMP/ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT. k.			GROSS WEIGHT l.	NET WEIGHT m.	ELEMENT WEIGHT n.	ELEMENT LIMIT OF ERROR o.	WEIGHT % ISOTOPE p.	ISOTOPE WEIGHT q.	ISOTOPE LIMIT OF ERROR r.
										1 BASIS	2 OMP	3 METHOD							
	1			1		81	776	J							1238				
	2			1		20	776	J							2026	4.79	97		



Obligations and Material Balance Reporting (NRC Only)

Material Balance Categories

DOE/NRC Form 742 - Section B

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Material Balance Categories

Material Balance Category	Country Obligation (Country Code)
85	Australia (31)
86	Canada (32)
87	Euratom (33)
88	Japan (34)
89	People's Republic of China (35)
C1	Russia (36)
A8	Switzerland (37)
A1	Argentina (38)
A2	Brazil (39)
A3	Chile (40)
C4	Japan/Russia (65)
C5	Euratom/Russia (66)
C6	Australia/Japan/Russia (67)
C7	Canada/Japan/Russia (68)

Material Balance Category	Country Obligation (Country Code)
C8	Euratom/Japan/Russia (69)
94	Australia/Japan (81)
95	Canada/Japan (82)
96	Euratom/Japan (83)
97	Australia/Euratom/Japan (84)
98	Canada/Euratom/Japan (85)
99	China/Japan (86)
I1	Australia/Japan (87)
I2	Australia/Canada/Euratom (88)
91	Australia/Euratom (91)
92	Canada/Euratom (92)
C2	Australia/Russia (96)
C3	Canada/Russia (97)



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Material Balance Categories (Continued)

Material Balance Category	Country Obligation (Country Code)
B1	LES Centrifuge Enrichment/Japan (70)
B2	Australia/Japan/LES Centrifuge Enrichment (71)
B3	Canada/Japan/LES Centrifuge Enrichment (72)
B4	Euratom/Japan/LES Centrifuge Enrichment (73)
B5	Australia/Euratom/Japan/LES Centrifuge Enrichment (74)
B6	Canada/Euratom/Japan/LES Centrifuge Enrichment (75)
B7	China/Japan/LES Centrifuge Enrichment (76)
A9	Australia/Canada/Euratom/Japan/LES Centrifuge Enrichment (77)
A4	LES Centrifuge Enrichment (90)
A5	LES Centrifuge Enrichment/Australia (93)
A6	LES Centrifuge Enrichment/Canada (94)
A7	LES Centrifuge Enrichment/Euratom (95)



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QUESTIONS?

