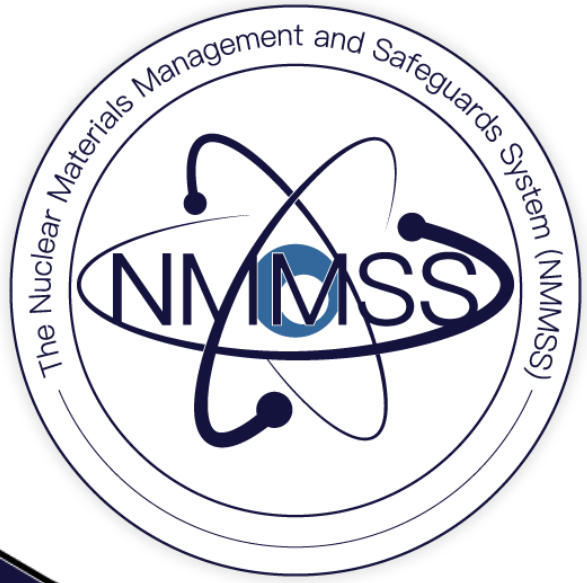

Reconciliation Case Study

Presented by:

- Mitch Hembree

Project Number Reconciliation Case Study

Case Study

Initial Facility Project Number Status:

Project Number Reconciliation

Project inventories derived from reported transactions

Central Nuclear Corporation (RIS BCD)

Project inventories derived from reported physical inventory

The A-200 report provides the status of project number balances at the time of physical inventory.

NMMSS REPORT A-200 — U. S. NUCLEAR MATERIALS MANAGEMENT AND SAFEGUARDS SYSTEM

REPORT PERIOD DATE 09/30/2015 — SUMMARY OF ENDING INVENTORY COMPARISON — RUNTIME 10/15/2015 07:27:37

CENTRAL NUCLEAR CORPORATION

	Project Transaction		COEI		Difference	
Project No.	Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
BCD, DEPLETED URANIUM						
GCD10010UE	461		461			
GCD100100R	1,844	4	1,844	4		
GGE01110RM	613	2	613	2		
TOTALS	2,918	6	2,918	6		
BCD, ENRICHED URANIUM						
GCD10010UE	4,200,575	76,990	4,200,275	76,986	300	4
GCD100100R	300,681	6,967	300,682	6,968	-1	-1
GGE01110RM	631,430	9,547	631,729	9,550	-299	-3
GGE011100F	3,407	1,123	2,324	644	1,083	479
GGE011181R	11,662,282	343,651	11,662,282	343,651		
TOTALS	16,798,375	438,278	16,797,292	437,799	1,083	479
BCD, ENRICHED LITHIUM						
GGE011181R	159,685	113,380	159,685	113,380		
TOTALS	159,685	113,380	159,685	113,380		
BCD, NORMAL URANIUM						
GCD10010UE	984		1,004		-20	
GGE01110RM	65		45		20	
TOTALS	1,049		1,049			
BCD, PU-238						
GCD10010UE	2.20	1.80	2.20	1.80		
TOTALS	2.20	1.80	2.20	1.80		

UNCLASSIFIED

Project Numbers.

Discrepancy between reported transactions and reported physical inventory

Project number quantities not reconciled with NMMSS

Developed by: LINK Technologies

Case Study

Reconciliation Worksheet

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

	GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
	Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM						
PROJECT: GCD10010UE						
	984		1,004		-20	
PROJECT: CGE01110RM						
	65		45		+20	
ENRICHED URANIUM						
PROJECT: GCD10010UE						
	4,200,575	76,990	4,200,275	76,986	+300	+4
PROJECT: GCD100100R						
	300,681	6,967	300,682	6,968	-1	-1
PROJECT: GGE01110RM						
	631,430	9,547	631,729	9,550	-299	-3
PROJECT: GGE011100F						
	3,407	1,123	2,324	644	+1083	+479

UNCLASSIFIED

Project inventories derived from reported transactions

Project Numbers.

Non-reconciled data extracted from the A-200 report into the Reconciliation Case Study Worksheet

Project Number Reconciliation

Discrepancy between reported transactions and reported physical inventory

Project inventories derived from reported physical inventory

Project number quantities not reconciled with NMMSS

Developed by: LINK Technologies

Case Study

Actions to Achieve Reconciliation with NMMSS

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

3. During the process month of September 2014, BCD reported transaction 930301 to record their inventory difference for the current process month. Transaction 930301 consisted of only this one line. The material is enriched uranium. An element weight of 888 grams and an isotope weight of 10 grams (1.1261%) were reported. The correct element weight should be 1188 grams and the isotope weight should be 14 grams (1.1785%). The material is in project Uranium Processing (GCD10010UE). A clerical error was made in reporting the transaction to NMMSS.

4. BCD received five items of enriched uranium from Advanced Biophysics Foundry (RIS ABF) on transaction 10. The material was received in the previous fiscal year. A recent laboratory analysis determined that an additional gram of both element and isotope was received. This material is in project Uranium Recovery (GCD100100R) and is in the form of standards (composition code 771). The document in error contained only one detail line. The element weight was 300,681 grams and the isotope weight was 6,967 grams.

5. Extended Nuclear Enterprise (RIS EZY) made a shipment of one item of enriched uranium to BCD on transaction 422 in a previous process period. The element weight reported was one gram and the isotope weight was zero (0.7500%). BCD issued a corrected 741 document to reflect a change to both element and isotope weights. The element weight should be 300 grams and isotope weight should be 3 grams (1.0000%). The material is in project Rough Machining Process Startup (GGE01110RM) and in the form of In Other R&D Usage. The 741 provided to EZY was also incorrect.

6. BCD reported (during the current reporting period) a gain (from other materials – use code 22) for enriched uranium on transaction number 930331. The element weight was 477 grams and isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the “Was” line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action

1

Action 1

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU) .

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014.

Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of residues to be leached (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU) .

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

5. Extended Nuclear Enterprise (RIS EZY) made a shipment of one item of enriched uranium to BCD on transaction 422 in a previous process period. The element weight reported was one gram and the isotope weight was zero (0.7500%). BCD issued a corrected 741 document to reflect a change to both element and isotope weights. The element weight should be 300 grams and isotope weight should be 3 grams (1.0000%). The material is in project Rough Machining Process Startup (GGE01110RM) and in the form of In Other R&D Usage. The 741 provided to EZY was also incorrect.

6. BCD reported (during the current reporting period) a gain (from other materials – use code 22) for enriched uranium on transaction number 930331. The element weight was 477 grams and isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the “Was” line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 1

Solution:

Project Number Reconciliation

DOE/NRC Form 742C re-submitted to NMMSS with corrected element weight

NRC FORM 742C
(09-2014)
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

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0058 **EXPIRES: 08/31/2017**

Estimated burden per response to comply with this mandatory collection request: 2 hours for small licensees and 6 hours for large licensees. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. 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 Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0058), 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.

1. NAME AND ADDRESS: Central Nuclear Corporation
STREET ADDRESS:
2. REPORTING IDENTIFICATION SYMBOL (RIS): BCD

CITY	STATE	ZIP CODE	3. INVENTORY DATE	4. LICENSE NUMBER(S)
			9/30/2014	

5. BATCH DATA

a. MATERIAL TYPE	b. COMP/FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PER-CENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D.			n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
												MEAS. BASIS	OTHER MEAS. POINT	MEAS. METHOD				
81	729	977		GCD10010UE			G	1										
81	725	7		GCD10010UE			G	2										
81	771	65		GGE01110RM			G	3										
81	899	1049						4										

Developed by: LINK Technologies

Action 1

Solution: (continued)

Reporting of the corrected DOE/NRC Form 742c (Physical Inventory Listing) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
ENRICHED URANIUM					
PROJECT: GCD10010UE					
4,200,575	76,990	4,200,275	76,986	+300	+4
PROJECT: GCD100100R					
300,681	6,967	300,682	6,968	-1	-1
				-299	-3
3,407	1,123	2,324	644	+1083	+479

UNCLASSIFIED

Originally Reported	Replaced with	Difference
997	977	-20

Project Number Reconciliation

Project GCD100100UE for normal uranium now reconciled with NMMSS.

Developed by: LINK Technologies

Action 2

Action 2

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM).

The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

6. BCD reported (during the current reporting period) a gain (from other materials – use code 22) for enriched uranium on transaction number 930331. The element weight was 477 grams and isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 2

Solution:

Project Number Reconciliation

DOE/NRC Form 742C re-submitted to NMMSS with corrected element weight

NRC FORM 742C
(09-2014)
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

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0058 **EXPIRES: 08/31/2017**

Estimated burden per response to comply with this mandatory collection request: 2 hours for small licensees and 6 hours for large licensees. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. 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 Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0058), 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.

1. NAME AND ADDRESS: Central Nuclear Corporation
STREET ADDRESS:
CITY:
STATE:
ZIP CODE:

2. REPORTING IDENTIFICATION SYMBOL (RIS): BCD

3. INVENTORY DATE: 9/30/2014

4. LICENSE NUMBER(S):

5. BATCH DATA

a. MATERIAL TYPE	b. COMP/FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PER-CENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D. MEAS. BASIS	m. MEASUREMENT I.D. OTHER MEAS. POINT	m. MEASUREMENT I.D. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
81	729	977		GCD10010UE			G	1										
81	725	7		GCD10010UE			G	2										
81	771	65		GGE01110RM			G	3										
81	899	1049						4										

Developed by: LINK Technologies

Action 2

Solution: (continued)

Reporting of the corrected DOE/NRC Form 742c (Physical Inventory Listing) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
ENRICHED URANIUM					
PROJECT: GCD10010UE					
4,200,575	76,990	4,200,275	76,986	+300	+4
				-1	-1
				-299	-3
PROJECT: GGE011100F					
3,407	1,123	2,324	644	+1083	+479

UNCLASSIFIED

Originally Reported	Replaced with	Difference
45	65	+20

Project GGE01110RM for normal uranium now reconciled with NMMSS.

Project Number Reconciliation

Developed by: LINK Technologies

Action 3

Action 3

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

3. During the process month of September 2014, BCD reported transaction 930301 to record their inventory difference for the current process month. Transaction 930301 consisted of only this one line. The material is enriched uranium. An element weight of 888 grams and an isotope weight of 10 grams (1.1261%) were reported. The correct element weight should be 1188 grams and the isotope weight should be 14 grams (1.1785%). The material is in project Uranium Processing (GCD10010UE). A clerical error was made in reporting the transaction to NMMSS.

During the process month of September 2014, BCD reported transaction 930301 to record their inventory difference for the current process month. Transaction 930301 consisted of only this one line. The material is enriched uranium. An element weight of 888 grams and an isotope weight of 10 grams (1.1261%) were reported. The correct element weight should be 1188 grams and the isotope weight should be 14 grams (1.1785%). The material is in project Uranium Processing (GCD10010UE). A clerical error was made in reporting the transaction to NMMSS.

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 3

Solution:

Project Number Reconciliation

DOE/NRC Form 741 replacement reported to NMMSS with corrected quantities

DOE/NRC FORM 741
(04-2018) 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 **EXPIRES: 04/30/2021**
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollects@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.

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER	7. DOCUMENTATION (Only if document is classified SECRET) PAGE OF PAGES	COPY OF COPIES	SERIES
BCD	BCD	930301		C		M				

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
c. ATTENTION: d. TELEPHONE:		c. ATTENTION: d. TELEPHONE:		1	

12.a. SHIPPED FOR ACCOUNT OF b. RIS

13.a. SHIPPED TO ACCOUNT OF b. RIS

NO.	DISTRIBUTION OF COPIES
1	
2	
3	
4	
5	
6	
7	
8	
9	

14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.

16. MATERIAL TYPE AND DESCRIPTION

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT	09	30	2014
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION			

23a. MISCELLANEOUS b. CONCISE NOTE ATTACHED c. UK REPORTABLE? YES NO

24. TOTAL GROSS WEIGHT 25. TOTAL VOLUME *(Waste Transfers Only)*

26. SHIPPER'S DATA

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATERIAL TYPE g.	COMP/ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT. k. 1 BASIS	2 OMP	3 METHOD	GROSS WEIGHT l.	NET WEIGHT m.	ELEMENT WEIGHT	ELEMENT LIMIT OF ERROR	WEIGHT % ISOTOPE	ISOTOPE WEIGHT	ISOTOPE LIMIT OF ERROR
	1	77			GCD10010UE	20		G							1188		1.1785	14	

26s. SHIPPER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27s. RECEIVER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

Developed by: LINK Technologies

Action 3

Solution:

Reporting of the replacement DOE/NRC Form 741 (Nuclear Material Transaction Report) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
ENRICHED URANIUM					
PROJECT: GCD10010UE					
4,200,575	76,990	4,200,275	76,986	+300	+4
-300	-4				
4,200,275	76,986	4,200,275	76,986	0	0
PROJECT: GCD100100R					
300,681	6,967	300,682	6,968	-1	-1
PROJECT: GGE01110RM					
		631,729	9,550	-299	-3
		2,324	644	+1083	+479

UNCLASSIFIED

Originally Reported	Replaced with	Difference
888 element 10 isotope	1188 element 14 isotope	-300 -4

Project Number Reconciliation

Project GCD10010UE for enriched uranium now reconciled with NMMSS.

Developed by: LINK Technologies

Action

4

Action 4

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

3. During the process month of September 2014, BCD reported transaction 930301 to record their inventory difference for the current process month. Transaction 930301 consisted of only this one line. The material is enriched uranium. An element weight of 888 grams and an isotope weight of 10 grams (1.1261%) were reported. The correct element weight should be 1188 grams and the isotope weight should be 14 grams (1.1785%). The material is in project Uranium Processing (GCD10010UE). A clerical error was made in reporting the transaction to NMMSS.

4. BCD received five items of enriched uranium from Advanced Biophysics Foundry (RIS ABF) on transaction 10. The material was received in the previous fiscal year. A recent laboratory analysis determined that an additional gram of both element and isotope was received. This material is in project Uranium Recovery (GCD100100R) and is in the form of standards (composition code 771). The document in error contained only one detail line. The element weight was 300,681 grams and the isotope weight was 6,967 grams.

BCD received five items of enriched uranium from Advanced Biophysics Foundry (RIS ABF) on transaction 10. The material was received in the previous fiscal year. A recent laboratory analysis determined that an additional gram of both element and isotope was received. This material is in project Uranium Recovery (GCD100100R) and is in the form of standards (composition code 771).

The document in error contained only one detail line. The element weight was 300,681 grams and the isotope weight was 6,967 grams.

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 910 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 4

Solution:

Project Number Reconciliation

DOE/NRC Form 741 adjustment reported to NMMSS with corrected quantities

DOE/NRC FORM 741
(04-2018) 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 **EXPIRES: 04/30/2021**
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollects@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.

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		
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14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.

16. MATERIAL TYPE AND DESCRIPTION

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT			
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION	09	30	2014

23a. MISCELLANEOUS — b. CONCISE NOTE ATTACHED — c. UK REPORTABLE? YES NO

24. TOTAL GROSS WEIGHT

25. TOTAL VOLUME *(Waste Transfers Only)*

26. SHIPPER'S DATA

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATERIAL TYPE g.	COMP/ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT. k. 1 BASIS	2 OMP	3 METHOD	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			-5	GCD100100R	20	771	G							-300681		2.3171	-6967	
	2			5	GCD100100R	20	771	G							300682		2.3174	6968	

26s. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27s. RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

Developed by: LINK Technologies

Action 4

Solution:

Project Number Reconciliation

Reporting of the adjustment DOE/NRC Form 741 (Nuclear Material Transaction Report) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
ENRICHED URANIUM					
PROJECT: GCD10010UE					
4,200,575	76,990	4,200,275	76,986	+300	+4
-300	-4				
4,200,275	76,986	4,200,275	76,986	0	0
PROJECT: GCD100100R					
300,681	6,967	300,682	6,968	-1	-1
+1	+1				
300,682	6,968	300,682	6,968	0	0
PROJECT: GGE01110RM					
631,430	9,547	631,729	9,550	-299	-3
		2,324	644	+1083	+479

UNCLASSIFIED

Project GCD100100R for enriched uranium now reconciled with NMMSS.

Originally Reported	Adjusted to	Difference
300,681 element 6,967 isotope	300,682 element 6,968 isotope	+1 +1

Action 5

Action 5

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

3. During the process month of September 2014, BCD reported transaction 930301 to record their inventory difference for the current process month. Transaction 930301 consisted of only this one line. The material is enriched uranium. An element weight of 888 grams and an isotope weight of 10 grams (1.1261%) were reported. The correct element weight should be 1188 grams and the isotope weight should be 14 grams (1.1785%). The material is in project Uranium Processing (GCD10010UE). A clerical error was made in reporting the transaction to NMMSS.

4. BCD received five items of enriched uranium from Advanced Biophysics Foundry (RIS ABF) on transaction 10. The material was received in the previous fiscal year. A recent laboratory analysis determined that an additional gram of both element and isotope was received. This material is in project Uranium Recovery (GCD100100R) and is in the form of standards (composition code 771). The document in error contained only one detail line. The element weight was 300,681 grams and the isotope weight was 6,967 grams.

5. Extended Nuclear Enterprise (RIS EZY) made a shipment of one item of enriched uranium to BCD on transaction 422 in a previous process period. The element weight reported was one gram and the isotope weight was zero (0.7500%). BCD issued a corrected 741 document to reflect a change to both element and isotope weights. The element weight should be 300 grams and isotope weight should be 3 grams (1.0000%). The material is in project Rough Machining Process Startup (GGE01110RM) and in the form of In Other R&D Usage. The 741 provided to EZY was also incorrect.

Extended Nuclear Enterprise (RIS EZY) made a shipment of one item of enriched uranium to BCD on transaction 422 in a previous process period. The element weight reported was one gram and the isotope weight was zero (0.7500%). BCD issued a corrected 741 document to reflect a change to both element and isotope weights. The element weight should be 300 grams and isotope weight should be 3 grams (1.0000%). The material is in project Rough Machining Process Startup (GGE01110RM) and in the form of In Other R&D Usage. The 741 provided to EZY was also incorrect.

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

Populate the reconciliation worksheet based on the seven actions listed above.

Action 5

Solution:

Project Number Reconciliation

DOE/NRC Form 741 adjustment reported to NMMSS with corrected quantities

DOE/NRC FORM 741
(04-2018) 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 **EXPIRES: 04/30/2021**
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollects@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.

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)				
EZY	BCD	422	1	a. SHIPPER	b. RECEIVER A	a. SHIPPER	b. RECEIVER D	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 2	11. NATURE OF TRANSACTION
c. ATTENTION: d. TELEPHONE:		c. ATTENTION: d. TELEPHONE:		12.a. SHIPPED FOR ACCOUNT OF b. RIS	13.a. SHIPPED TO ACCOUNT OF b. RIS

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14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.

16. MATERIAL TYPE AND DESCRIPTION

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT			
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION	09	30	2014

23a. MISCELLANEOUS
b. CONCISE NOTE ATTACHED
c. UK REPORTABLE? YES NO

24. TOTAL GROSS WEIGHT

25. TOTAL VOLUME *(Waste Transfers Only)*

26. SHIPPER'S DATA

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATERIAL TYPE g.	COMP/ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT. k. 1 BASIS	2 OMP	3 METHOD	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.

26s. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27s. RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

ER'S DATA

	1			-1	GGE01110RM	20	746	G							-1		0.7500	0	
	2			1	GGE01110RM	20	746	G							300		1.0000	3	

Developed by: LINK Technologies

Action 5

Solution:

Project Number Reconciliation

Reporting of the adjustment DOE/NRC Form 741 (Nuclear Material Transaction Report) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
PROJE					
PROJECT: GCD100100R					
300,681	6,967	300,682	6,968	-1	-1
+1	+1				
300,682	6,968	300,682	6,968	0	0
PROJECT: GGE01110RM					
631,430	9,547	631,729	9,550	-299	-3
+299	+3				
631,729	9,550	631,729	9,550	0	0
PROJECT: GGE011100F					
3,407	1,123	2,324	644	+1083	+479

UNCLASSIFIED

Originally Reported	Adjusted to	Difference
1 element 0 isotope	300 element 3 isotope	+299 +3

Project GGE01110RM for enriched uranium now reconciled with NMMSS.

Developed by: LINK Technologies

Action

6

Action 6

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729)

BCD reported (during the current reporting period) a gain (from other materials – use code 22) for enriched uranium on transaction number 930331. The element weight was 477 grams and isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

NOTE: Remember that data lines with blending use codes (i.e., 22, 77, ED, EN, DE, etc.) must ALWAYS be paired.

6. BCD reported (during the current reporting period) a gain (from other materials – use code 22) for enriched uranium on transaction number 930331. The element weight was 477 grams and isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 6

Solution:

Project Number Reconciliation

DOE/NRC Form 741 replacement reported to NMMSS with corrected quantities

DOE/NRC FORM 741
(04-2018) 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 **EXPIRES: 04/30/2021**
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollects@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.

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER	7. DOCUMENTATION (Only if document is classified SECRET) PAGE	OF	PAGES	COPY	OF	COPIES	SERIES
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c. ATTENTION: d. TELEPHONE:		c. ATTENTION: d. TELEPHONE:		12.a. SHIPPED FOR ACCOUNT OF b. RIS	13.a. SHIPPED TO ACCOUNT OF b. RIS

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14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.

16. MATERIAL TYPE AND DESCRIPTION

23a. MISCELLANEOUS b. CONCISE NOTE ATTACHED c. UK REPORTABLE? YES NO

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT	09	30	2014
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION			

24. TOTAL GROSS WEIGHT

25. TOTAL VOLUME *(Waste Transfers Only)*

26. SHIPPER'S DATA

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATERIAL TYPE g.	COMP./ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT k. 1 BASIS	2 OMP	3 METHOD	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	22			GGE011100F	20	103	G							494		58.9069	291	
	2	71			GGE011100F	10	103	G							0		0.1110	0	

26s. SHIPPER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27s. RECEIVER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

Developed by: LINK Technologies

Action 6

Solution:

Project Number Reconciliation

Reporting of the replacement DOE/NRC Form 741 (Nuclear Material Transaction Report) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
PROJE					
PROJE					
300,682	6,968	300,682	6,968	0	0
PROJECT: GGE01110RM					
631,430	9,547	631,729	9,550	-299	-3
+299	+3				
631,729	9,550	631,729	9,550	0	0
PROJECT: GGE011100F					
3,407	1,123	2,324	644	+1083	+479
+17	+21				
3,424	1,144	2,324	644	+1,100	+61

UNCLASSIFIED

Originally Reported	Replaced with	Difference
477 element 270 isotope	494 element 291 isotope	+17 +21

Project GGE011100F for enriched uranium is not yet reconciled with NMMSS.

Developed by: LINK Technologies

Action

7

Action 7

Project Number Reconciliation

1. Central Nuclear Corporation (RIS BCD) reported their ending inventory as of September 30, 2014. Normal uranium in the form of Process Residues (Unirradiated) (composition code 729) was incorrectly reported as 997 kilograms. The correct value is 977 kilograms. The material is in project Uranium Processing (GCD10010EU).

2. BCD reported an ending inventory for normal uranium in the form of samples and standards (composition code 771). This inventory reflects quantities in inventory as of September 30, 2014. BCD reported a quantity of 45 kilograms in project Rough Machining Process Startup (GGE01110RM). The correct element weight is 65 kilograms. The form of the material and the project were originally reported correctly.

BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Identify the entry on the appropriate NMMSS report. Show the solution for correcting their entry with NMMSS. Complete a worksheet to display the results of the correcting entry.

isotope weight was 270 grams (56.6038%). This gain was a result of the degradation of depleted uranium (use code 71). The depleted uranium was reported as zero kilograms element weight and zero kilograms isotope weight (0.1110%). Production personnel informed you that an error existed in their reported weights for the enriched uranium. The element weight should be 494 grams and the isotope weight should be 291 grams (58.9069%). The depleted uranium values did not change. The material is in the project Fabrication – General Account (GGE011100F) and in the form of hexafluoride product (composition code 103).

7. BCD issued a corrected 741 document for a receipt of three items of enriched uranium from Midway Enrichment Manufacturing (MEM) on transaction 4, correction 1. The items are in the form of samples and standards (composition code 771). You discover an error on 741 sent to NMMSS. The element weight was entered as a negative 11 grams and the isotope weight was entered as a negative 10 grams (90.9091%) on the "Was" line (back out). The correct element weight is a negative 1,111 grams and correct isotope weight is a negative 510 grams (45.9046%). The 741 provided to Midway was correct, but keystroke errors were made in sending the data to NMMSS. The material is in project Fabrication – General Account (GGE011100F).

Populate the reconciliation worksheet based on the seven actions listed above.

Action 7

Solution:

Project Number Reconciliation

DOE/NRC Form 741 replacement reported to NMMSS with corrected quantities

DOE/NRC FORM 741
(04-2018) 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 **EXPIRES: 04/30/2021**
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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollects@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.

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)				
MEM	BCD	4	1	a. SHIPPER	b. RECEIVER C	a. SHIPPER	b. RECEIVER D	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
c. ATTENTION: d. TELEPHONE:		c. ATTENTION: d. TELEPHONE:		12.a. SHIPPED FOR ACCOUNT OF b. RIS	13.a. SHIPPED TO ACCOUNT OF b. RIS

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14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.

16. MATERIAL TYPE AND DESCRIPTION

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT			
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION	09	30	2014

23a. MISCELLANEOUS b. CONCISE NOTE ATTACHED c. UK REPORTABLE? YES NO

24. TOTAL GROSS WEIGHT 25. TOTAL VOLUME *(Waste Transfers Only)*

26. SHIPPER'S DATA

BACK REFERENCE NUMBER a.	LINE NO. b.	TYPE OF INV. CHANGE c.	IDENTIFICATION (ITEM/BATCH NAME) d.	NO. OF ITEMS e.	PROJECT NUMBER f.	MATERIAL TYPE g.	COMP/ FACILITY CODE h.	OWNER CODE i.	KEY MEAS. POINT j.	MEAS. IDENT. k. 1 BASIS	2 OMP	3 METHOD	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.

26s. SHIPPER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27s. RECEIVER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

DATA

	1			-3	GGE011100F	20	771	G							-1111		45.9046	-510	

Action 7

Solution:

Project Number Reconciliation

Reporting of the replacement DOE/NRC Form 741 (Nuclear Material Transaction Report) impacted the reconciliation worksheet as follows:

UNCLASSIFIED
NMM-112
RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
ENRICHED URANIUM					
PROJE					
PROJE					
PROJECT: GGE01110RM					
631,430	9,547	631,729	9,550	-299	-3
+299	+3				
631,729	9,550	631,729	9,550	0	0
PROJECT: GGE011100F					
3,407	1,123	2,324	644	+1083	+479
+17	+21				
-1,100	-500				
2,324	644	2,324	644	0	0

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Originally Reported	Replaced with	Difference
-11 element -10 isotope	-1111 element -510 isotope	-1100 -500

Project GGE011100F for enriched uranium is reconciled with NMMSS.

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Actions

1-7

Solution:

UNCLASSIFIED

NMM-112

RECONCILIATION CASE STUDY WORKSHEET

GENERATED BOOK INVENTORY		COEI		DIFFERENCE	
Element Weight	Isotope Weight	Element Weight	Isotope Weight	Element Weight	Isotope Weight
NORMAL URANIUM					
PROJECT: GCD10010UE					
984		1,004		-20	
		-20			
984		984		0	
PROJECT: CGE01110RM					
65		45		+20	
		+20			
65		65		0	
ENRICHED URANIUM					
PROJECT: GCD10010UE					
4,200,575	76,990	4,200,275	76,986	+300	+4
-300	-4				
4,200,275	76,986	4,200,275	76,986	0	0
PROJECT: GCD100100R					
300,681	6,967	300,682	6,968	-1	-1
+1	+1				
300,682	6,968	300,682	6,968	0	0
PROJECT: GGE01110RM					
631,430	9,547	631,729	9,550	-299	-3
+299	+3				
631,729	9,550	631,729	9,550	0	0
PROJECT: GGE011100F					
3,407	1,123	2,324	644	+1083	+479
+17	+21				
-1,100	-500				
2,324	644	2,324	644	0	0

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Project Number Reconciliation

All project numbers for Central Nuclear Corporation (RIS BCD) are reconciled with NMMSS.

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Questions