Physical Inventory Listing (PIL)

Instructors:

- Alexandra Zeigler
- John Cettin
- Mitch Hembree
- Brian Horn
- Brandon Zack

Topics

1 What is a Physical Inventory Listing? — Alexandra Zeigler

- Purpose
- Regulatory Framework
- DOE/NRC Form 742C

2 How to complete and submit a Physical Inventory Listing. — Brian Horn | John Cettin

- Required MC&A Data
- Submittal Methods
- Quality Control and Validation process applied by NMMSS.

3 Case Study — Mitch Hembree | Brandon Zack

- Power Reactor
- DOE Facility

What is a Physical Inventory Listing?

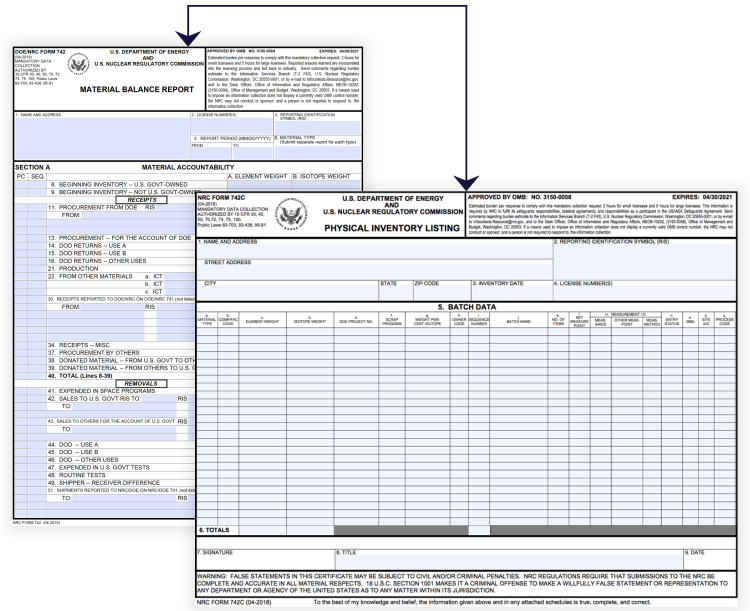
Topic 1

Physical Inventory

Regulations

U.S. facilities with reportable quantities of nuclear material in their possession must report an inventory to NMMSS on an annual basis, at a minimum.

Physical inventory indicates a facility's nuclear material holdings at a specified point in time.



The amount of material reported on a Physical Inventory Listing (PIL) (DOE/NRC Form 742c) must match the inventory balance reported on the site's MBR (DOE/NRC Form 742).

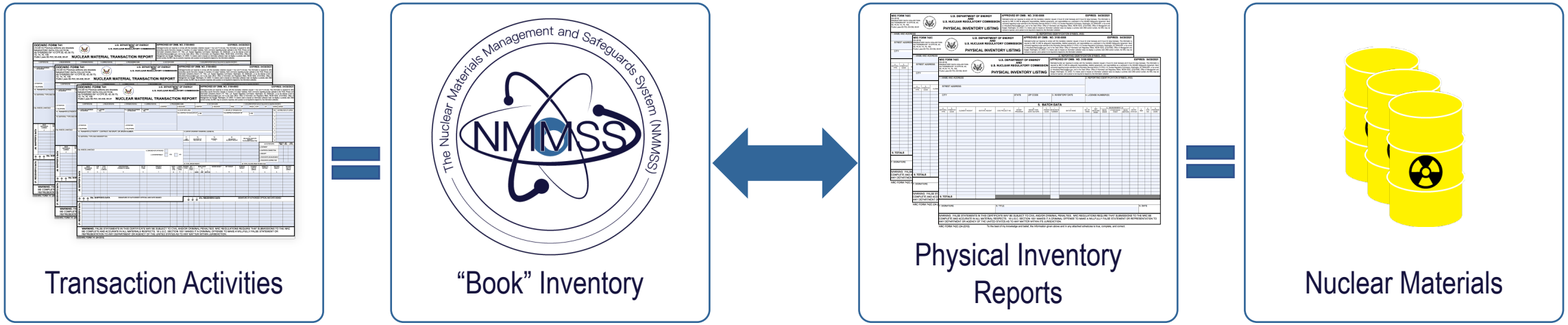
Developed by: LINK Technologies

Composition of Ending Inventory (COEI)

Reporting physical inventory to NMMSS is partitioned by the type of **nuclear material** with additional detailed breakdown of inventories by **chemical and/or physical composition, process, or use**.

Types of Inventories

In addition to physical inventory reported to NMMSS through DOE/NRC Form 742C, NMMSS generates a "book" inventory based on transaction activity, DOE/NRC Form 741, reported to NMMSS.



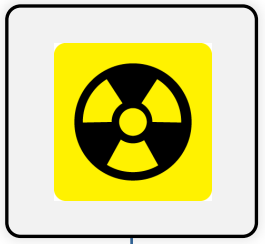
Regulatory Requirements

Inventory reports should be submitted to NMMSS:

For **September 30** or additionally if directed by DOE/NNSA line management

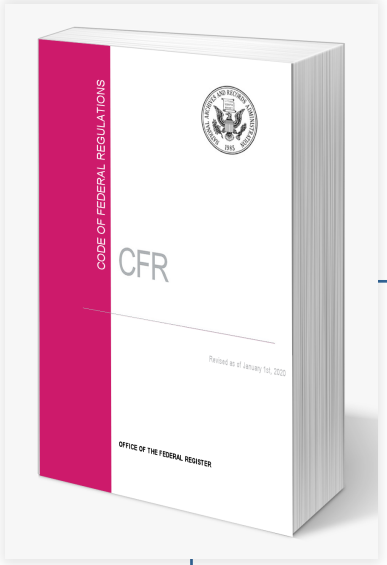
As specified in facility attachment or transitional facility attachments for DOE/NNSA facilities selected under the provisions of the **U.S. IAEA Safeguards Agreement**

Reports are due to NMMSS no later than the **15th calendar day of the month** following the due date of the inventory report



Nuclear material in transit at the end of a reporting period should be included in the receiver's reported inventory as if it reached the intended receiver within the reporting period (in transit rule)

Regulatory Requirements



NRC regulations for the preparation and submission of a physical Inventory Listing report to NMMSS are contained in Chapter 10, Parts 1-171 of the Code of Federal Regulations.

The regulations require each licensee that possess SNM during a material balance reporting period in a quantity totaling 1 gram or more of contained uranium (U)-235, U-233, or plutonium (Pu) to prepare and submit in computer-readable format DOE/NRC Forms 742 and 742C concerning SNM received, produced, possessed, transferred, consumed, disposed of, or lost.

In addition, licensees possessing source material during a material balance reporting period, in a quantity totaling 1 kilogram or more of some depleted uranium, natural uranium or thorium, to report their holdings of source material to NMMSS.

Regulatory Requirements *(Continued)*

Reporting periods are determined by the quantity of material possessed by the facility, specifically as follows:

Licensees subject to the requirements of 10 CFR 74.51, "Nuclear Material Control and Accounting for Strategic Special Nuclear Material," shall compile a report as of March 31 and September 30 of each year and file the report within 30 days after the end of the period covered by the report.

Licensees subject to the requirements of 10 CFR 74.19(c), 10 CFR 74.31(c)(5), 10 CFR 74.33(c)(4), or 10 CFR 74.43(c)(6) shall submit a report within 60 calendar days of the beginning of the physical inventory.

Licensees reporting pursuant to 10 CFR 75.35, "Material Status Reports," shall prepare and submit material status reports as described in Section 3.2 of NUREG/BR-0007.

DOE/NRC Form 742C:
Physical Inventory Listing

NRC FORM 742C
(05-2021)
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: 02/29/2024**

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, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0058), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. NAME AND ADDRESS			2. REPORTING IDENTIFICATION SYMBOL (RIS)
STREET ADDRESS			
CITY	STATE	ZIP CODE	3. INVENTORY DATE / 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. OTHER MEAS. POINT	m. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
6. TOTALS																		

7. SIGNATURE	8. TITLE	9. DATE

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.

NRC FORM 742C (05-2021) To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

Developed by: LINK Technologies

DOE/NRC Form 742C: **Physical Inventory Listing**

Sections

Header Information — 1

Batch Data — 2

Signature and Date Block — 3

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DOE/NRC Form 742C: **Physical Inventory Listing**

Header Information 1

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STREET ADDRESS				
CITY	STATE	ZIP CODE	3. INVENTORY DATE	4. LICENSE NUMBER(S)

DOE/NRC Form 742C: **Physical Inventory Listing**

Batch Data 2

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				
6. TOTALS																		

DOE/NRC Form 742C: **Physical Inventory Listing**

Signature and Date Block

3

7. SIGNATURE	8. TITLE	9. DATE

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NRC FORM 742C (05-2021) To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

How to complete and submit a Physical Inventory Listing.

Topic 2

Developed by: LINK Technologies

DOE/NRC Form 742C: **Physical Inventory Listing**

Fields to be Populated:

Reporting Identification Symbol (RIS) — Box 2

Inventory Date — Box 3

Note: Inventory date must be the same date as the To Date of the 742 form.

Batch Data — Box 5

Signature — Box 7

Date — Box 9

NRC FORM 742C
(05-2021)
MANDATORY DATA COLLECTION AUTHORIZED BY 10 CFR 30, 40, 50, 70,72, 74, 75, 150, Public Laws 83-703, 93-438, 95-91

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STREET ADDRESS
CITY | STATE | ZIP CODE

2. REPORTING IDENTIFICATION SYMBOL (RIS)

3. INVENTORY DATE

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	OTHER MEAS. POINT	MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
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DOE/NRC Form 742C:
Physical Inventory Listing

Fields to be Completed in the Header Section

Header Information 1

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PHYSICAL INVENTORY LISTING

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STREET ADDRESS				
CITY	STATE	ZIP CODE	3. INVENTORY DATE	4. LICENSE NUMBER(S)

Site Name and Address — Box 1

Inventory Date — Box 3

Note: Enter the ending date of the reporting period for the material balance report.

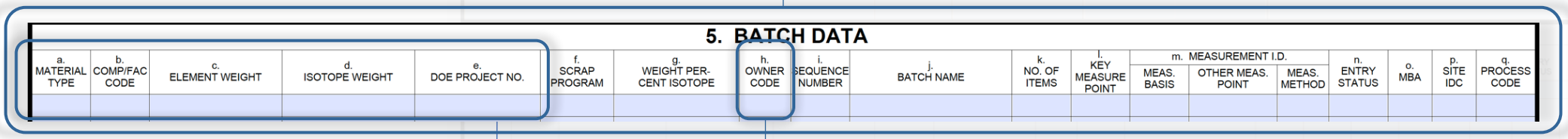
Reporting Identification Symbol (RIS) — Box 2

Developed by: LINK Technologies

DOE/NRC Form 742C:
Physical Inventory Listing

Fields to be Completed in the Batch Data Section

Batch Data 2



The following fields must be completed for each material "batch data"

- Material Type — Box 5a.
- Comp/Facility Code — Box 5b.
- Element weight — Box 5c.
- Isotope weight — Box 5d.
- DOE Project Number — Box 5e.
  Note: If the Material is DOE-owned.

Owner Code — Box 5h.

Note: Do not enter the owner code on the 899/total line.

All Material Types may be Combined into **One 742C Form**.

Each Material must have at Least One **"Detail Line"** and only one **"Total Line"** (Composition/Facility Code 899).

Developed by: LINK Technologies

Inventory Composition Codes

Required to Report Total Lines *(Comp Code 899)* for each Material Type

- Otherwise, DOE is not limited by the same inventory composition codes required by the NRC.
- DOE can use any composition code listed in the D-25 (the composition code report), at its discretion.

Developed by: LINK Technologies

Inventory Composition Codes

NRC licensees with non-DOE-owned material are required to use one of the codes on these slides per NUREG/BR-0007:

860 In Reactors and Critical Assemblies

- Enter this code for SNM or source material in reactors, test piles, and critical assemblies, and for SNM being used for radiation studies.
- Use code 864 to report excess, spare, or transiently used fuel elements.

861 In Cooling Basins

- Enter this code for irradiated SNM or source material in cooling basins held for future recovery or disposal (including reactor-produced SNM).
- Use this code also for spent fuel in dry storage.

Inventory Composition Codes *(Continued)*

862 In Conversion and Fabrication Processes

- Enter this code for SNM or source material in conversion or fabrication processes that change its chemical or physical Form.
- Sealed sources, unopened receipts, and ultimate products maintained under tamper-safe conditions are not considered to be “in process.”
- Use this code also to reflect uranium within an enrichment plant (i.e., cascade).

863 In Recovery Processes

- Enter this code for SNM or source material in a recovery process (i.e., nuclear material in the process of being separated from original fuel and other reactor products, and nuclear material in the process of being removed from undesired materials and converted to usable Forms).

Inventory Composition Codes *(Continued)*

864 Materials Not in Process

- Enter this code for SNM or source material in all unopened receipts, sealed sources, and ultimate products maintained under tamper-safe conditions.

865 Unirradiated Scrap Awaiting Recovery

- Enter this code for SNM or source material in unirradiated scrap material that is awaiting in- house or offsite recovery.

866 Unirradiated Scrap Awaiting Disposal

- Enter this code for SNM or source material in unirradiated scrap material that is awaiting transfer to an authorized disposal facility.

Inventory Composition Codes *(Continued)* | *Total Line*

899 Inventory Total Line

- Enter the cumulative total reported for each material type.

Line **MUST** be designated with the "generic material type code".

- e.g., E1, E2, E3, total line = Material Type 20

Line for Material Type on DOE/NRC Form 742C MUST match the total of lines 80 and 81 (on Form 742) for each material type.

Physical Inventory Material Type Codes

Report to the Whole Unit

- Micrograms
- Grams
- Kilograms

Material Type Code and Descriptions

- Assay Range (detail), ex. MT E1-E4 or 21-39.
- Total (generic/summary), ex. MT 20

Developed by: LINK Technologies

Reporting Units for DOE/NRC Form 742C

Enriched Uranium

U.S.NRC
United States Nuclear Regulatory Commission

Reporting of Enriched Uranium

E-1

Greater then **0.711%** but less then **5.00%**

E-2

5.00% or more, but less than **20.00%**

E-3

20.00% or more, but less than **80.00%**

E-4

80.00% or more

DOE-Owned MT 20

MT Code	Type Description	Reporting Unit
20	Total	
21	> 0.712 to < 0.90% U-235	gm
22	0.90 to < 1.15% U-235	gm
23	1.15 to < 1.60% U-235	gm
24	1.60 to < 2.00% U-235	gm
25	2.00 to < 2.60% U-235	gm
26	2.60 to < 2.90% U-235	gm
27	2.90 to < 3.10% U-235	gm
28	3.10 to < 3.40% U-235	gm
29	3.40 to < 3.90% U-235	gm

MT Code	Type Description	Reporting Unit
30	3.90 to < 4.10% U-235	gm
31	4.10 to < 5.00% U-235	gm
32	5.00 to < 10.00% U-235	gm
33	10.00 to < 20.00% U-235	gm
34	20.00 to < 35.00% U-235	gm
35	35.00 to < 45.00% U-235	gm
36	45.00 to < 80.00% U-235	gm
37	80.00 to < 92.00% U-235	gm
38	92.00 to < 94.00% U-235	gm
39	94.00% and above U-235	gm

DOE-Owned MT 10

MT Code	Type Description	Reporting Unit
10	Total	
11	< 0.21 U-235	kg
12	0.21 to < 0.24% U-235	kg
13	0.24 to < 0.26% U-235	kg
14	0.26 to < 0.28% U-235	kg
15	0.28 to < 0.31% U-235	kg
16	0.31 to < 0.50% U-235	kg
17	0.50 to < 0.60% U-235	kg
18	0.60 to < 0.710% U-235	kg

DOE-Owned MT 50

MT Code	Type Description	Reporting Unit
50	Total	
51	< 4.00 Pu-240	gm
52	4.00 to < 7.00% Pu-240	gm
53	7.00 to < 10.00% Pu-240	gm
54	10.00 to < 13.00% Pu-240	gm
55	13.00 to < 16.00% Pu-240	gm
56	16.00 to < 19.00% Pu-240	gm
57	19.00 and above Pu-240	gm

DOE/NRC Form 742C:
Physical Inventory Listing

PIL Signature and Date Block

Signature and Date Block 3

7. SIGNATURE	8. TITLE	9. DATE

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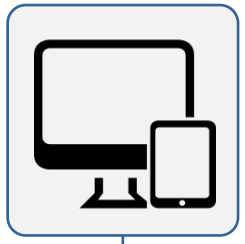
NRC FORM 742C (05-2021) To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

Box 7 | Box 9

Sign and Date to Signify Approval in this Section

- When submitting electronically, the “signature” is implied by submission
  - Letter that accompanies CD
  - Signature on email

Physical Inventory Listing Submittal



Data may be Submitted either **Electronically**, or on Paper

Electronically is Preferred

Paper Submission must be Coordinated in Advance with the **NMMSS Program**

Physical Inventory Listing Submittal *(Continued)*

DOE Facilities' Inventory Reports should be Submitted to NMMSS

- By **September 30** or additionally if directed by DOE/NNSA line management
- As specified in facility attachment or transitional facility attachments for DOE/NNSA facilities selected under the provisions of the U.S. IAEA Safeguards Agreement.
- Nuclear material in transit at the end of a reporting period should be included in the receiver's reported inventory as if it reached the intended receiver within the reporting period (in transit rule).

NRC facilities with Reportable Quantities of Nuclear Material Report to NMMSS at least **Once** every **365 days**

Developed by: LINK Technologies

Physical Inventory Listing Submittal *(Continued)*

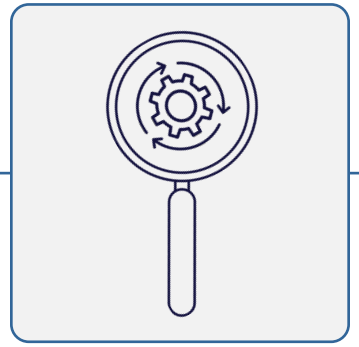
DOE facilities, reports are due to NMMSS no later than the **15th calendar day** of the month following the due date of the inventory report.

NRC licensees, reports are due between **January 1** and **March 31** of each year, or within **30-60 days** of their inventory being taken.

Developed by: LINK Technologies

Inventory Validation

Validation of Inventory is part of the **NMMSS Daily Run Process**



The Validation Process is **Repeated** until **all Errors** are **Resolved**

Inventory Validation *(Continued)*

Common Inventory Validation Errors Include:

Invalid **RIS**	Invalid **Material Type Code**	Invalid **Composition Code**

- Material total line quantities do not match inventory COEI details
- Project Number is required when the Owner Code is G
- Isotope weight must be equal to or less than the element weight
- Inventory Date can not be future to the date that the data is received and processed

Reconciliation

Reconciliation involves a systematic process to ensure NMMSS records are in agreement with the physical inventory data and material balance records (NRC only) provided by the facility.

Each reportable material is reconciled separately by ownership category (DOE-owned or non DOE-owned), as is material subject to U.S. agreements with foreign governments (obligations).

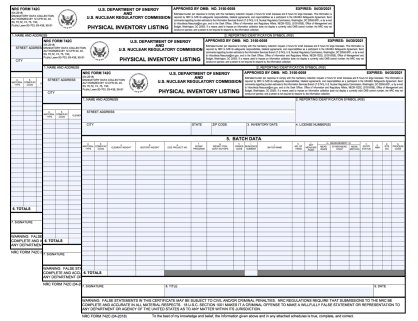
Reconciliation

Close of September Accounting Periods

Project and Owner Code Balances must Match

NMMSS Generated Book Inventory compared with Reported Inventory

"Book" Inventory



Reported Inventory

Reconciliation

Quality Control Facility Reports

- Facility reported transactions
- Facility reported Material Status Report (MSR)

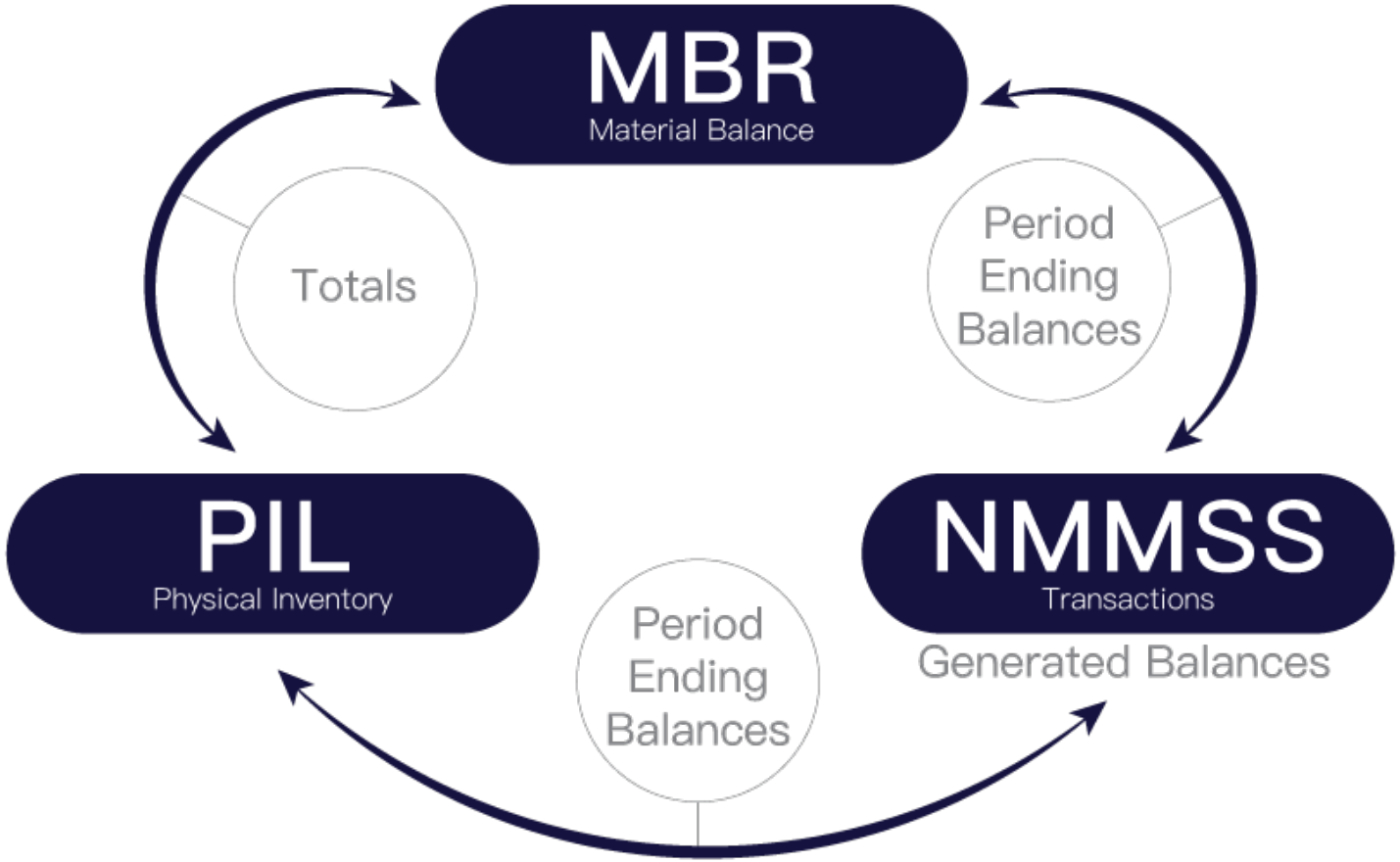
Compare Facility Submitted MSR to NMMSS Generated MSR

- Use prior year facility MSR and all reported transactions during the reporting period to generate NMMSS MSR

Discuss Discrepancies, if any, with Facility

- Physical Inventory List (PIL)
- Material Balance Report (MBR)
- Inventory changes

Reconciliation Process



Case Study

Topic 3

Case Study 1

NRC facility Acme Energy **(RIS YYO)** is preparing their composition of ending inventory for **6/17/2020**. The facility has the following material at time of inventory:

Type of Material	Element Weight	Isotope Weight	Material Composition
Depleted Uranium	153,000	960	In Cooling Basins (861)
Enriched Uranium	164,000,000	3,280,000	In Reactors and Critical Assemblies (860)
Enriched Uranium	1,000,000,000	9,900,000	In Cooling Basins (861)
Enriched Uranium	36,000,000	1,548,000	Materials Not in Process (864)
Enriched Uranium	60	54	Materials Not in Process (864)
Plutonium	1,430,000	1,050,922	In Reactors and Critical Assemblies (860)
Plutonium	16,000,000	11,000,000	In Cooling Basins (861)

All material is **non-DOE-owned**. Prepare the physical inventory listing (PIL), DOE/NRC Form 742C, for **Acme Energy**.

Case Study 1

Enter PIL Header Information

NRC FORM 742C
(05-2021)
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: 02/29/2024**

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, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0058), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. NAME AND ADDRESS			2. REPORTING IDENTIFICATION SYMBOL (RIS)
STREET ADDRESS			YYO
CITY	STATE	ZIP CODE	3. INVENTORY DATE: 6/17/2020 / 4. LICENSE NUMBER(S)

Box 2 Reporting Identification Symbol (RIS)

Box 3 Inventory date

Case Study 1

Enter PIL Batch Data for **Depleted Uranium**

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				
10	861	153000	960				J	1										
10	899	153000	960					2										

Box **a.** Material Type

Box **b.** Comp/Fac Code

Box **c. & d.** Element & Isotope Weight

Box **i.** Sequence Number

Box **h.** Owner Code

Case Study 1

Enter PIL Batch Data for **Enriched Uranium**

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				
10	861	153000	960				J	1										
10	899	153000	960					2										
E1	860	164000000	3280000				J	3										
E1	861	1000000000	9900000				J	4										
E1	864	36000000	1548000				J	5										
E1	864	60	54				J	6										
20	899	1200000060	14728054					7										

Note: Blank lines are permitted on hardcopy DOE/NRC Form 742C.

Box **a.** Material Type

Box **b.** Comp/Fac Code

Box **c. & d.** Element & Isotope Weight

Box **i.** Sequence Number

Box **h.** Owner Code

Developed by: LINK Technologies

Case Study 1

Enter PIL Batch Data for **Plutonium**

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				
10	861	153000	960				J	1										
10	899	153000	960					2										
E1	860	164000000	3280000				J	3										
E1	861	1000000000	9900000				J	4										
E1	864	36000000	1548000				J	5										
E1	864	60	54				J	6										
E1	899	1200000060	14728054					7										
50	860	1430000	1050922				J	8										
50	861	16000000	11000000				J	9										
50	899	17430000	12050922					10										

Box **a.** Material Type

Box **b.** Comp/Fac Code

Box **c. & d.** Element & Isotope Weight

Box **i.** Sequence Number

Box **h.** Owner Code

Developed by: LINK Technologies

Case Study 2

DOE site Eternal Energy Enterprise **(RIS EEE)** is preparing their composition of ending inventory for **9/30/2020**. The facility has the following material at time of inventory:

Type of Material	Element Weight	Isotope Weight	Project Number	Material Composition
Enriched Uranium	144	16	DEMO00000S	Solutions(Unirradiated) (728)
Enriched Uranium	1	1	DEMO00000R	Samples & Standards(771)

All material is **DOE-owned**. Prepare the physical inventory listing (PIL), DOE/NRC Form 742C, for **Eternal Energy Enterprise**.

Case Study 2

Enter PIL Header Information

NRC FORM 742C
(05-2021)
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: 02/29/2024**

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, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0058), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. NAME AND ADDRESS			2. REPORTING IDENTIFICATION SYMBOL (RIS)
STREET ADDRESS			EEE
CITY	STATE	ZIP CODE	3. INVENTORY DATE: 9/30/2020 / 4. LICENSE NUMBER(S)

Box 2 Reporting Identification Symbol (RIS)

Box 3 Inventory date

Case Study 2

Enter PIL Batch Data for **Enriched Uranium**

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				
33	728	144	16	DEMO0000S			G	1										
39	771	1	1	DEMO0000R			G	2										
20	899	145	17					3										

Box **a.** Material Type

Box **b.** Comp/Fac Code

Box **c. & d.** Element & Isotope Weight

Box **e.** DOE Project Number

Box **i.** Sequence Number

Box **h.** Owner Code

Summary

1 What is a Physical Inventory Listing?

- Purpose
- Regulatory Framework
- DOE/NRC Form 742C

2 How to complete and submit a physical inventory listing.

- Required MC&A Data
- Submittal Methods
- Quality Control and Validation process applied by NMMSS.

3 Case Study

- Power Reactor
- DOE Facility

Questions