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Part 12*

C.2

NUREG/BR-0007
Revision 2

United States
Nuclear Regulatory Commission



Instructions for Completing Material Balance Report and Physical Inventory Listing

(Forms DOE/NRC-742 and 742C)

Effective July 1, 1989

Issued by the Office of
Nuclear Material Safety and Safeguards

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INSTRUCTION TO LICENSEES FOR THE PREPARATION
AND DISTRIBUTION OF DOE/NRC FORM 742

U.S. NUCLEAR REGULATORY COMMISSION MATERIAL BALANCE REPORT

I. INTRODUCTION

The U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) jointly participate in a Nuclear Materials Management and Safeguards System (NMMSS), utilizing common reporting forms to minimize the reporting burden upon users of nuclear material required to provide nuclear materials data to one or both agencies in accordance with prevailing regulations or contractual obligations, as is the appropriate case. In this manner, the licensee is able to file one report and meet the reporting requirements of both NRC and DOE, rather than having to file different reports for each agency-required response. Compliance with specific reporting requirements is monitored by the agency for which the specific data is required. The DOE/NRC Forms or facsimile may be used.

NRC regulations require each licensee who is authorized to possess at any one time and location¹ special nuclear material (SNM) in a quantity totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, to prepare and submit reports concerning SNM received, produced, possessed, transferred, consumed, disposed of, or lost². Reports are to be made as of March 31 and September 30 of each year and filed within thirty (30) days after the end of the period covered by the report. If

¹A Reporting Identification Symbol (RIS) is assigned by NRC and/or DOE to each reporting location.

²Submission of DOE/NRC Form 742 may be required as a matter of contract or lease administration for all DOE-owned SNM, regardless of quantity.

licensees are reporting pursuant to 10 CFR Part 75, reports are to be dispatched as soon as possible and in any event within thirty (30) days after the start of the physical inventory taken as part of the licensee's material accounting and control procedures.

A separate DOE/NRC Form 742 shall be completed for each material type of SNM for which a reportable quantity is possessed or a reportable inventory change has occurred during the period. Reportable quantities are defined on page 1 of NUREG/BR-0006.

Also, each licensee, Federal or State, who is authorized to possess at any time or location, more than 1000 kilograms of source material or any combination thereof, must submit a statement of foreign origin source material inventory. A DOE/NRC Form 742 may be used. Reports are to be made as of September 30 of each year and filed within 30 days after the end of the period covered by the report, or as specified in Facility Attachments if the licensee is reporting pursuant to 10 CFR § 75.

In addition to DOE/NRC Form 742, licensees possessing DOE-owned SNM under a Lease Agreement are required, by the DOE contract, to complete Form DOE 742A and Form DOE 742B pursuant to supplemental instructions issued by DOE. These forms are not required for privately owned SNM.

The form has three sections in addition to facility identification data in blocks 1 through 5. Section A, "Material Accountability," lines 7 through 83, are to be used to report material accountability data such as receipts, shipments, usage, losses, gains, etc. Section B, "Country Control

Number Data," is to be used to report the distribution of the total inventory on hand by country of origin as defined in the instructions for completing DOE/NRC Form 741. Section C, "Certification," provides for the certification of all entries on the Form.

Proprietary information must be included in all reporting forms when necessary to provide an adequate response. An application to withhold such information from public disclosure may be made, and would be disposed of, in accordance with the provisions of 10 CFR 2.790. If any of this information is of particular sensitivity, a request may be made that such information not be physically transmitted to the IAEA; such a request must refer to, and must conform with, 10 CFR 75.12.

II. INSTRUCTIONS FOR COMPLETING DOE/NRC FORM 742

The numbered instructions which follow correspond to the numbered blocks or lines on DOE/NRC Form 742 to be completed by licensees. Shaded blocks and lines are not to be completed by licensees.

1. Name and Address - Enter the name and address as identified with your Reporting Identification Symbol (RIS).
2. License Number(s) - Enter the license number (or numbers) which authorizes possession of the SNM or source material for which DOE/NRC Form 742 is being completed.
3. Reporting Identification Symbol (RIS) - Enter the RIS which has been assigned and under which the SNM being reported is, or was, held. Submit a separate report for each RIS.

4. Report Period - Enter the inclusive dates.
5. Material Type - Enter the appropriate Material Type Code for the material being reported, as follows:

<u>CODE</u>	<u>DESCRIPTION</u>
10	Depleted Uranium
20 ¹	Enriched Uranium
50	Plutonium
70	Uranium-233
81	Normal Uranium
83	Plutonium-238 ²
88	Thorium

Complete a separate DOE/NRC Form 742 for each SNM or source material type even in cases where two or more types are combined.

NOTE: When U-235 and U-233 are mixed, report the total element weight of the mixture in the element weight column of both the U-235 report and the U-233 report, and reflect this fact in a footnote on each report.

¹If reporting enriched uranium (material type 20), enter the appropriate enrichment level code in lieu of "20," as follows:

<u>Code</u>	<u>Description</u>
E1	Greater than normal but less than 5.00%
E2	5.00% or more, but less than 20.00%
E3	20.00% or more, but less than 80.00%
E4	80.00% or more

²Report as Pu-238 if the contained Pu-238 is greater than 10% of total Pu by weight; otherwise, report as plutonium.

A. SECTION A - MATERIAL ACCOUNTABILITY

Use Columns A and B to enter all numeric data by element and isotope weight.¹

Column A - Element Weight

Enter the total element weight of the SNM or source material being reported. If Pu-238, report to the nearest tenth gram. For all other SNM, report to the nearest gram and if source material, report to the nearest kilogram.

Column B - Isotope Weight

In the case of enriched uranium or U-233, enter the weight of the isotope U-235 or U-233 as appropriate; in the case of plutonium, enter the weight of the isotopes Pu-239 and Pu-241, and in the case of Pu-238, enter the weight of the isotope Pu-238. If Pu-238, report to the nearest tenth of a gram. For all others, report to the nearest gram. If depleted uranium enter the weight of the isotope U-235 to the nearest kilogram. Make no entry for other source material.

7. DOE/NRC Form 740M Attached - Check the appropriate box whether or not a DOE/NRC Form 740M (Concise Note) is attached.

8. Beginning Inventory DOE-Owned - Enter the inventory of DOE-owned special nuclear material or source material as of the beginning of business on the first day of the period covered by the report. The quantities reported on Line 8 (Columns A and B) must agree with the quantities on Line 80 on the last report submitted.

¹Round fractions of 0.5 or greater upward. For quantities of less than 0.5, enter an asterick(*).

9. Beginning Inventory Not DOE Owned - Enter the inventory of non-DOE-owned special nuclear material or source material as of the beginning of business on the first day of the period covered by the report. The quantities reported on Line 9 (Columns A and B) must agree with the quantities on Line 81 of the last report submitted.

RECEIPTS

11. Procurement from DOE - Enter quantities of special nuclear material (or source material) which have been purchased from DOE during the reporting period and reported to the NRC on DOE/NRC Form 741. This may be done by listing individual receipts for each individual RIS as reported on DOE/NRC Form 741 or a total of receipts for each individual RIS during the report period.
13. Procurement for the Account of DOE - Enter quantities of special nuclear material (or source material) which have been purchased for the account of DOE during the reporting period and reported to the NRC on DOE/NRC Form 741. This may be done by listing individual receipts for each individual RIS as reported on DOE/NRC Form 741 or a total of receipts for each individual RIS during the report period.
21. Production - Enter the calculated net quantity of plutonium or U-233 produced in the fuel and/or blanket material of a reactor during the reporting period. For licensees reporting under 10 CFR Part 75, if fuel from which the production resulted was removed or discharged from the reactor during this reporting period, enter discharged quantity on line 21 following the word "Production."

22. From Other Materials - Enter increases resulting from the introduction of another material into the material balance being reported. If the added quantity is the result of blending, identify the balance supplying the material by entering the appropriate code from the following list:

EN	Enriched to Normal
ED	Enriched to Depleted
NE	Normal to Enriched
ND	Normal to Depleted
DE	Depleted to Enriched
DN	Depleted to Normal
EE	Enriched (low) to Enriched (high) [Enriched to Enriched, i.e., E1 through E4 codes]

30. Receipts Reported to NRC on DOE/NRC Form 741 (not listed elsewhere) - Enter the SNM or source material received from others and reported to the NRC on Form DOE/NRC 741 not listed elsewhere on this Form. This may be done by listing individual receipts by RIS as reported on DOE/NRC Form 741, or a total of receipts from each individual RIS during the report period.

NOTE: Multiple receipts of quantities of SNM falling below the reporting level for DOE/NRC Form 741 (less than 1 gram), but which cumulatively total more than 1 gram or more, should be listed on this line. Attach a subschedule showing: Name and RIS (if applicable) of the shipper, date of transaction, and quantity received. A DOE/NRC Form 741 reporting miscellaneous receipts (inventory change type 34) shall be completed.

38. Donated Material - From DOE to Others - Enter the amount of material received as a donation by DOE.
39. Donated Material - From Others to DOE - Enter the amount of material received as a donation by others to the account of DOE.
40. Total - Enter the sum of Lines 8 through 39.

REMOVALS

42. Sales to DOE - Enter quantities of special nuclear material which have been sold to DOE during the reporting period and have been reported to NRC on DOE/NRC Form 741. This may be done by listing individual shipments by RIS as reported on DOE/NRC Form 741, or a total of shipments to each individual RIS during the report period. (SNM quantities entered on Line 42 shall not be entered on Line 51.)
43. Sales to Others for the Account of DOE - Enter quantities of special nuclear material which have been sold for the account of DOE during the reporting period and have reported to NRC on DOE/NRC Form 741. This may be done by listing individual shipments by RIS as reported on DOE/NRC Form 741, or a total of shipments to each individual RIS during the report period. (SNM quantities entered on Line 43 shall not be entered on Line 51.)
51. Shipments Reported to NRC/DOE on DOE/NRC Form 741 (Not Listed Elsewhere) - Enter the quantities of special nuclear material or source material shipped

to others and reported to the NRC on DOE/NRC Form 741 not listed elsewhere on this form. This may be done by listing individual shipments by RIS as reported on DOE/NRC Form 741, or a total of shipments to each individual RIS during the report period.

NOTE: Multiple shipments of quantities of SNM falling below the reporting level for DOE/NRC Form 741 (less than 1 gram), but which cumulatively total 1 gram or more, should be listed on this line. Attach a subschedule showing: Name of the receiver and (if applicable) RIS, date of transaction, and quantity shipped. A DOE/NRC Form 741 reporting miscellaneous shipments (inventory change type 54) shall be completed. Facilities reporting pursuant to 10 CFR Part 75 also include transfers to burials on this line in lieu of line 74.

58. Donated Material - To DOE by Others - Enter the amount of material removed by a donation to DOE.
59. Donated Material - To Others by DOE - Enter the amount of material removed by donation from a DOE account to others.
71. Degradation to Other Materials - Enter decreases resulting from the introduction of other material into the material balance being reported. If the decreased quantity is the result of blending, identify the balance losing the material by entering the appropriate code from the list in 22 above.

72. Decay - Enter the amount of radioactive decay which occurred during the reporting period for plutonium and Pu-238. When the SNM being reported is plutonium, enter the amount of radioactive decay of the isotope Pu-241 if the decay is 1 gram or more. The decay factors for calculating the decay of Pu-241 (based upon a half-life of 14.39 years) are as follows:

<u>Time Possessed</u>	<u>Decay Factor</u>
1 month	0.9960
2 months	0.9920
3 months	0.9880
4 months	0.9841
5 months	0.9801
6 months	0.9762

When the SNM being reported is Pu-238, enter the amount of radioactive decay if decay is 0.1 gram or more. Pu-238 decay is calculated monthly using a decay factor of 0.000668 based on a half-life of 86.4 years.

73. Fission and Transmutation - Enter the calculated quantities of SNM lost by fission and transmutation in a reactor.
74. Normal Operational Losses/Measured Discards - Normal Operational Loss (NOL)/Measured Discards (MD) is a loss of material determined by measurement or by estimate on the basis of measurement, which, whether in the form of solids, liquids, or gases, has been discarded. Facilities reporting pursuant to 10 CFR Part 75 do not include transfers to burials on this line but should report such transfers on line 51. For all other facilities include on this line all material discarded, including material transferred to an authorized recipient for disposal (a subschedule should be attached detailing transfers to burial facilities; such transfers

should not be included on Line 51, "Shipments Reported on DOE/NRC Form 741").

All material that leaves the inventory through this process must be accounted for on a DOE/NRC Form 741. In order to account for these types of discards, the following codes are to be used:

If the discard is to the atmosphere (A), a Form 741 will be prepared with the shipper's "RIS" entered in both the shipper's and receiver's block but with an "A" appended in the receiver's block.

Similarly, if the discard is to a lagoon or pond, use an "L" in the receiver's RIS; for a discard to the ground (G), append a "G"; if the material goes off the inventory into a holding (H) area for later removal to a burial site, append an "H" to the receiver's RIS. When the material is eventually shipped to a burial site, the transfer series on the Form 741 would show the shipper's RIS with an "H" appended and the appropriate "V" series RIS in the receiver's block.

NOTE: Remove discards from inventory only when the material has been disposed of (a) by transfer to an authorized recipient or holding area as provided in the regulations in 10 CFR Part 40 or 74; or (b) as authorized pursuant to 10 CFR § 20.302 (Commission approved disposal methods); or (c) as provided in 10 CFR § 20.303 or 10 CFR § 20.304, applicable respectively to the disposal of licensed material by release into sanitary sewerage systems or burial in soil, or in 10 CFR § 20.106 (concentrations in effluents

to unrestricted areas) or (d) as provided in corresponding regulation of Agreement States.

75. Accidental Losses - Accidental loss is the irretrievable and inadvertent loss of a known quantity of SNM as the result of an operational accident and which loss has been determined by measurement or by estimate on the basis of measurement.
76. Approved Write Offs - Not applicable.
77. Inventory Difference - Inventory Difference (ID) is the difference between physical inventory and book inventory after the book has been adjusted for all receipts and removals.
80. Ending Inventory DOE Owned - Enter the ending inventory which is DOE owned as of the end of the last day of the period covered by this report.
81. Ending Inventory Not DOE Owned - Enter the ending inventory which is not DOE owned as of the last day of the period covered by this report.
82. Total - Enter the sums of Lines 42, 43, 51, 58, 59, 71 through 75, 77, 80, and 81.

NOTE: The totals reported on this line must agree with those on Line 40.

83. Bias Adjustment - The inventory difference bias adjustment is that quantity of material which should be added to or subtracted from the inventory

difference quantity on Line 77 to produce the best estimate of an unbiased inventory difference. The adjustment represents the algebraic summation of the impact of measurement system biases on each component of the measured plant material balance (BI, A, R, EI). Include on this line the sum total of the bias adjustments for the inventory difference for the current period. Any prior period adjustments should also be included on this line. Do not include bias adjustments that have already been applied to the source data in the material balance equation. (This line applies only to those licensees subject to the requirements of 10 CFR 74.13.)

SECTION B - COUNTRY CONTROL NUMBER DATA

The total amount of nuclear material on hand as of the date of the report (amount on Line 80 or 81 or the sum of lines 80 and 81) must be accounted for by country of origin within material type.

The following entries, by column, are required:

1. Country Control Number - Enter the unique country control number for each category of nuclear material, as defined in the instructions for completing Nuclear Material Transaction Report, DOE/NRC Form 741.
2. Element Weight - Enter the weight of the contained special nuclear material or source material in the reporting units listed in Part I, Section A.
3. Isotope Weight - Enter the isotope weight. If enriched uranium or U-233, enter weight to the nearest gram of U-235 or U-233, as appropriate. If plutonium, enter the sum of Pu-239 and Pu-241 to the nearest gram. If

Pu-238, enter the weight of the isotope Pu-238 to the nearest 1/10 of a gram. For depleted uranium, enter the isotope weight to the nearest kilogram. Make no entry for other source material.

4. Total Weight - Enter the totals for both Columns 2 and 3. These totals must agree with the totals on Lines 80 or 81 or the sum of 80 and 81.

C. SECTION C - CERTIFICATION

Date, Signature, and Title Line - The report shall be signed by an authorized representative of the licensee. Enter the date and title of the person signing the report.

D. DISTRIBUTION OF COMPLETED FORM DOE/NRC-742

Distribute the completed report as follows:

1. Send one copy of the completed report and all supporting schedules to:

Martin Marietta Energy Systems, Inc.
CS/ORGDP Site
Nuclear Material Control - Mail Stop 19
P.O. Box P
Oak Ridge, Tennessee 37831

2. Retain one copy for your file

III. INSTRUCTIONS FOR COMPLETING DOE/NRC FORM 742C PHYSICAL INVENTORY LISTING

The DOE/NRC Form 742C, describes the status of the nuclear material reported on Lines 80 and 81 of DOE/NRC Form 742, as of the end of the reporting period.

There are two separate sets of procedures for filing DOE/NRC Form 742C. They are based on the following authorities:

1. Licensees required to report pursuant to 10 CFR § 74.13.
2. Licensees required to report under 10 CFR Part 75.

The following instructions are presented in two sections, corresponding to the above categories.

Non-DOE-owned source material when reported as bulk material is exempt from this DOE/NRC Form 742C requirement.

A. LICENSEES REPORTING UNDER 10 CFR § 74.13

The numbered instructions which follow correspond to the numbered blocks or lines to be completed by licensees on the Physical Inventory Listing (PIL), DOE/NRC Form 742C for non-DOE-owned inventory. Refer to the DOE orders 5630 series for DOE-owned.

1. Name and Address - Enter the name and address of the reporting facility.
2. DOE/NRC Form 740M Attached - Check the appropriate box to indicate whether or not a DOE/NRC Form 740M is attached.
3. Inventory Date - Enter the ending date for which the material balance report is based, March 31, 19XX or September 30, 19XX.
4. Reporting Identification Symbol (RIS) - Enter the RIS of the reporting facility.

5. License Number(s) - Enter the license number or numbers under which the subject nuclear material is held.
6. Batch Data - Nuclear material should be grouped into "batches" as defined by the codes in 6.b below. Enter the required data for each "batch" of material as identified by a unique code on separate lines as follows:

a. Material Type

Enter the appropriate special nuclear material type code, as follows:

<u>Code</u>	<u>Description</u>
10	Depleted Uranium
20 ¹	Enriched Uranium
50	Plutonium
70	U-233
81	Normal Uranium
83	Pu-238
88	Thorium

- b. Composition/Facility Code - Enter the appropriate code from the following table:

¹If reporting enriched uranium (material type 20), enter the appropriate enrichment level code in lieu of "20" as follows:

<u>Code</u>	<u>Description</u>
E1	Greater than normal but less than 5.00%
E2	5.00% or more, but less than 20.00%
E3	20.00% or more, but less than 80.00%
E4	80.00% or more

<u>Composition/Facility Code¹</u>	<u>Description</u>
860	In reactors and critical assemblies
861	In cooling
862	In conversion and fabrication processes
863	In recovery processes
864	Material not in process
865	Unirradiated scrap awaiting recovery
866	Unirradiated scrap awaiting disposal

- c. Element Weight - Enter element weight as described for Columns A and B in II.A of the basic DOE/NRC Form 742 instructions.
- d. Isotope Weight - Enter isotope weights as described for Columns A and B in II.A of the basic DOE/NRC Form 742 instructions.
- e. DOE Project Number - Make no entry.
- f. Scrap Program - Make no entry.
- g. Weight Percent Isotope - No entry required.
- h. Owner Code - No entry required.

¹See Appendix I for further description of codes.

- i. Sequence Number - Enter the line sequence number with lines numbered consecutively. Do not repeat or skip numbers.
 - j. Batch Name - No entry required. Can be used as licensee desires.
 - k. Number of Items - Make no entry.
 - l. Key Measurement Point - Make no entry.
 - m. Measurement ID - Make no entry.
 - n. Entry Status - No entry required.
7. Totals - Enter the total non-DOE-owned inventory reported in the above categories. This total must agree with the quantity entered on Line 81, "Ending Inventory Not DOE Owned," on the DOE/NRC Form 742.
8. Signature - The report shall be signed by an authorized representative of the licensee.
9. Title - Enter the title of the person signing the report.
10. Date - Enter the date the report was signed.

DOE Order 5630 series contains requirements for reporting the status of nuclear material for DOE-owned inventory. Reporting inventory data for DOE-owned

inventory in an expanded level of detail is a DOE reporting requirement which also meets inventory reporting requirements of NRC. The total of DOE-owned inventory on which inventory data is reported must agree with the quantity entered on line 80, "Ending Inventory DOE Owned," on the DOE/NRC Form 742.

Reports filed under this section are to be made as of March 31 and September 30 of each year and are to be filed within thirty (30) days after the end of the period covered by the report.

B. LICENSEES REPORTING UNDER 10 CFR PART 75

The instructions in this section apply only to facilities which have been notified by letter from the NRC, as provided in 10 CFR § 75.11, that they have been identified under the US/IAEA Safeguards Agreement. Facilities who are required to submit INITIAL inventory reports under 10 CFR § 75.32, and a physical inventory is not performed, shall prepare DOE/NRC Form 742 according to the instructions in II.A, Page 5, of these procedures: completing Items 1, 2, 3, 4, 5, 80, 81, and 82. The information in the initial inventory report may be based upon the licensee's book record. Facilities reporting under this section will file Subsequent Material Balance Reports based upon a physical inventory and are required to attach a completed DOE/NRC Form 742C, Physical Inventory Listing (PIL). Such reports are required with respect to each physical inventory taken as part of the material accounting and control procedures required by 10 CFR § 75.21. Unless otherwise specified by license conditions, such reports shall be dispatched as soon as possible and in any event within thirty (30) days after the start of the physical inventory.

The numbered instructions which follow correspond to the numbered blocks or lines to be completed by licensees on the PIL.

1. Name and Address - Enter the name and address of the reporting facility.
2. DOE/NRC Form 740M Attached - Check the appropriate box to indicate whether or not a DOE/NRC Form 740M is attached.
3. Inventory Date - Enter the ending date of the inventory on which the Material Balance Report is based.
4. Reporting Identification Symbol (RIS) - Enter the RIS of the reporting MBA.
5. License Number(s) - Enter the license number or numbers under which the subject nuclear material is held.
6. Batch Data - The basic reporting entity is the batch, defined as:

"...a portion of nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of specifications or measurements. The nuclear material may be in bulk form or contained in a number of separate items."

A batch may have only one value for:

- batch name
- number of items
- composition/facility code
- key measurement point

- measurement basis
- scrap program
- owner code

In general, all of the data for one batch will be entered on one line of block 6 of the DOE/NRC Form 742C. One exception would be if a single discrete item contains more than one material (e.g., irradiated fuel containing both uranium and plutonium); in such a case, a separate line should be used for the data for each material, with all data common to all materials in the batch entered only on the first line.

- a. Material Type Code - Enter the applicable two-digit material type code for each line entry. MT codes for the various nuclear materials are as follows:

<u>Code</u>	<u>Description</u>
10	Depleted Uranium
20 ¹	Enriched Uranium
50	Plutonium
70	U-233
E1	Normal Uranium
83	Pu-238
88	Thorium

¹If reporting enriched uranium (material type 20), enter the appropriate enrichment level code in lieu of "20," as follows:

<u>Code</u>	<u>Description</u>
E1	Greater than normal but less than 5.00%
E2	5.00% or more, but less than 20.00%
E3	20.00% or more, but less than 80.00%
E4	80.00% or more

- b. Composition/Facility Code - Enter the appropriate code from the list developed during the formulation and negotiation of the Facility Attachment.
- c. Element Weight - Enter the weight of the contained special nuclear material or source material in the same units as listed in Section A of these procedures.
- d. Isotope Weight - Enter the isotope weight. If enriched uranium or U-233, enter the weight to the nearest gram of U-235 or U-233, as appropriate. If plutonium, enter the sum of Pu-239 and Pu-241 to the nearest gram. If Pu-238, enter the weight of the isotope Pu-238 to the nearest 1/10 of a gram. For depleted uranium, enter the U-235 isotope weight to the nearest kilogram. Make no entry for other source material.
- e. Project Number - For DOE-owned nuclear material, except lease or loan material, a project number is required for all entries. An entry shall be made for each active project number by MT code, showing the quantities of nuclear material assigned to the project number.
- f. Scrap Program - Refer to DOE Order 5630 series for reporting instructions.
- g. Weight Percent Isotope - Enter the weight percent of the isotope U-235 if uranium enriched or depleted in U-235. If plutonium, enter

the weight percent of the isotope Pu-240. If Pu-238, enter the weight percent of the isotope Pu-238. Report weight percent to at least two, but not more than four, decimal places, depending upon the accuracy yielded by the measurement method employed. Example of weight percent isotope to four decimal places: XX.XXXX%. For U-233, enter the parts per million of U-232. Does not apply for normal uranium or thorium. Use separate lines to report material of different enrichments.

- h. Owner Code - Enter in this block the applicable owner code from the following:

<u>Owner Code</u>	<u>Type of Ownership of Material</u>
A	DOE-Owned, Lease Agreement - Waiver of Use Charge (Loan)
B	DOE-Owned, Lease Agreement - Non-Waiver of Use Charge
G	DOE-Owned
H	Owned by other U.S. Government Agencies
J	Privately Owned (Domestic)
R	Privately Owned (Foreign)
S	DOE-Owned, Lease or Loan Agreement (Foreign)

- i. Sequence Number - Enter the line sequence number with lines numbered consecutively. Do not repeat or skip numbers.

- j. Batch Name (Identification) - Enter a unique identifier for the batch as defined in 6 above. If the batch is a discrete item with a unique identifying serial number or name (e.g., a fuel assembly, sealed source, or UF₆ cylinder), enter the identification number or name (up to a maximum of 16 characters). If the batch is composed of bulk material or a number of items, enter any alphanumeric identifier (of 16 characters or less). Note that the same batch name must not appear twice in the same report.
- k. Number of Items - If the batch is composed of a number of discrete items, enter the number of items. If the batch is bulk material, or generally where the number of items is not meaningful, enter zero. If more than one line is used to report data on the batch, the number of data items should be repeated on each line.
- l. Key Measurement Point - Enter the code for the appropriate inventory key measurement point, as specified in the Facility Attachment or Transitional Facility Attachment.
- m. Measurement Identification Code: Fill in the three sections of this data field as follows:

(1) Basis:

Enter the pertinent one-character code from the following:

- N - if batch data are based on measurements made in an IAEA MBA (RIS) other than the reporting MBA (RIS).
- L - if batch data are based on measurements made in another IAEA MBA (RIS) and have been previously reported by the reporting MBA (RIS) in a DOE/NRC Form 741 (Nuclear Materials Transaction Report) or a DOE/NRC Form 742 (Physical Inventory Listing).
- M - if batch data are based on measurements made in the reporting IAEA MBA (RIS) and the data were not previously reported.
- T - if batch data are based on measurements in the reporting IAEA MBA (RIS) and have been previously reported for that MBA (RIS) in a DOE/NRC Form 741 or a DOE/NRC Form 742C.
- (2) Other Measurement Point - If the batch data are based on measurements made at a different KMP from the one specified above, enter the one-letter identification of the key measurement point at which the measurements were made.
- (3) Method - In some cases, the Facility Attachment or Transitional Facility Attachment may provide codes for identifying the measurement method used. In such cases, enter the appropriate code.

- n. Entry Status - Enter the appropriate code from the table below to indicate whether this is a new entry, or a correction to a previous entry. To correct an entry on a previously submitted Form 742C, use 2 lines - a "W" line showing the entry to be corrected, and an "S" line showing the correct values. To delete a line, use only a "W" line. To add a line, use only an "S" line. Note that "W" lines should have all data fields completed exactly like the original entry, except that the number of items and element and isotope weight fields should have the opposite arithmetic sign from the original entry (thus these fields are usually negative in "W" entries).

<u>Entry Status Code</u>	<u>Meaning</u>
N	new data
W	"was" - indicates line contains data to be corrected or deleted
S	"should be" - indicates line contains data correcting a mistake or new data to be added

7. Totals - Enter the total for columns C, D, and K as indicated.
8. Signature - The form must be signed by an authorized representative of the firm.
9. Title - Enter the title of the person who signed the form.
10. Date - Enter the date the form was signed.

APPENDIX

COMPOSITION CODE DESCRIPTION

860. In Reactors and Critical Assemblies

Enter SNM in reactors, test piles, critical assemblies, and SNM being used for radiation studies. Excess, spare, or transiently used fuel elements are to be reported in Code 864, Materials Not In Process.

861. In Cooling

Enter irradiated SNM in cooling basins held for future recovery or disposal (includes reactor produced SNM).

862. In Conversion and Fabrication Processes

Enter SNM in conversion or fabrication processes which change its chemical or physical form. Sealed sources, unopened receipts, and ultimate products maintained under tamper-safing are not considered "in process" and are not to be included on this line.

863. In Recovery Processes

Enter SNM in a recovery process (i.e., SNM in the process of being separated from original fuel and other reactor products; SNM in the process of being removed from undesired materials and converted to usable forms).

864. Materials Not in Process

Enter SNM in all unopened receipts, sealed sources, and ultimate product maintained under tamper-safing.

865. Unirradiated Scrap Awaiting Recovery

Enter SNM in unirradiated scrap material which is awaiting in-house or offsite recovery.

866. Unirradiated Scrap Awaiting Disposal

Enter SNM in unirradiated scrap material which is awaiting transfer to an authorized disposal facility.