

Instructions for Completing Nuclear Material Transaction Reports

(DOE/NRC Forms 741 and 740M)

Effective Date: January 1, 2009

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Effective Date: January 1, 2009

Manuscript Completed: June 2008
Date Published: June 2008

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ABSTRACT

U.S. Nuclear Regulatory Commission (NRC) regulations require licensees who ship, receive, or adjust their physical inventory of source or special nuclear material (SNM) to document and report such activities. The reports are submitted using U.S. Department of Energy (DOE)/NRC Form 741. Licensees may need to provide additional information on some imports or exports of source or SNM. The additional information is reported using DOE/NRC Form 740M. This NUREG contains instructions for preparing these forms.

Paperwork Reduction Act Statement

The information collections contained in this NUREG are covered by DOE/NRC Forms 741 and 740M, which the Office of Management and Budget (OMB) approved under approval numbers 3150-0003 and 3150-0057.

Public Protection Notification

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.

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ABBREVIATIONS

ANSI	American National Standards Institute
BI	beginning inventory
CFR	<i>Code of Federal Regulations</i>
DOE	U.S. Department of Energy
EI	ending inventory
EURATOM	European Atomic Energy Commission
FA	facility attachment
g	gram
HEU	highly enriched uranium
IAEA	International Atomic Energy Agency
ICR	inventory change report
ICT	inventory change type
ID	inventory difference
kg	kilogram
KMP	key measurement point
LEU	low-enriched uranium
MBA	material balance area
MBR	material balance report
MT	material type
NMMSS	Nuclear Materials Management and Safeguards System
NRC	U.S. Nuclear Regulatory Commission
OMB	Office of Management and Budget
OMP	other measurement point
Pu	plutonium
RA	rounding adjustment
RIS	reporting identification symbol
SAMS	Safeguards Management Software
SNM	special nuclear material
SRD	shipper-receiver difference

ABBREVIATIONS (CONTINUED)

TFA	transitional facility attachment
U	uranium
UF ₆	uranium hexafluoride
UK	United Kingdom
WR	former Soviet Union weapons material

U.S. NUCLEAR REGULATORY COMMISSION INSTRUCTIONS FOR COMPLETING NUCLEAR MATERIAL TRANSACTION REPORTS

DOE/NRC Form 741, “Nuclear Material Transaction Report,” and DOE/NRC Form 740M, “Concise Note”

1 Introduction

The U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) jointly use the Nuclear Materials Management and Safeguards System (NMMSS). This system is the U.S. national database used by DOE and the NRC for tracking certain nuclear material.

Common reporting forms and formats are used to minimize the reporting burden on licensees¹ required to provide nuclear material data to one or both agencies in accordance with current regulations or contractual obligations. In this manner, licensees can file one report to meet the reporting requirements of both the NRC and DOE. Compliance with specific reporting requirements is monitored by the agency that requires the specific data. NRC regulations require that licensees submit the reports in computer-readable form. A licensee may use any blank blocks on the paper DOE/NRC forms for other business purposes.

DOE requires all NRC licensees to report to the NMMSS all receipts, transfers, and inventories of U.S. Government-owned, -loaned, or -leased material in their possession. Reports to the NMMSS for all U.S. Government-owned, -loaned, or -leased material must follow the U.S. Government’s reporting requirements as specified in DOE Orders Series 470 (DOE Order 470.4, “Safeguards and Security Program,” and DOE M 470.4-6, “Nuclear Material Control and Accountability”).

1.1 Material Transaction Reports

DOE/NRC Form 741, “Nuclear Material Transaction Report,” is the means for submitting transaction data to the NMMSS. DOE/NRC Form 741 must be completed in accordance with the instructions in this NUREG and must be submitted in computer-readable format. NMMSS Report D-24, “Personal Computer Data Input for NRC Licensees,” gives instructions for creating the computer-readable submittal.

Licensees use DOE/NRC Form 741 to report physical transfers of nuclear materials between facilities. The report is also used to convey information on transactions such as inventory corrections that otherwise increase or decrease obligation balances or nuclear material categories within a facility.

The NMMSS relies heavily on the quality of the data reported by the facilities involved in nuclear activities. The data submitted to the NMMSS are subject to evaluation according to the restrictions placed on nuclear activity by the policies of various governing agencies of the United

¹ The term “licensee” here denotes an NRC or Agreement State licensee or an NRC certificate holder.

States. The NMMSS accepts the data after they are verified as acceptable within the restrictions of the system.

NRC licensees must provide a DOE/NRC Form 741 to the NMMSS in a computer-readable format following the instructions in this NUREG and NMMSS Report D-24. Both the shipper and the receiver are required to submit DOE/NRC Form 741. The receiver should confirm that the quantity received is consistent with the shipper's report. When statistically significant shipper-receiver differences (SRDs), as defined in Title 10, Section 74.31, "Nuclear Material Control and Accounting for Special Nuclear Material of Low Strategic Significance," of the *Code of Federal Regulations* (10 CFR 74.31), 10 CFR 74.43, "Internal Controls, Inventory, and Records," or 10 CFR 74.59, "Quality Assurance and Accounting Requirements," are identified, they must be resolved and their root causes corrected. The regulatory intent is to require material control and accounting systems to promptly detect and resolve all significant SRDs. Comparisons of shippers' and receivers' reports are necessary both to confirm the acceptability of shippers' and receivers' values for establishing the book accounting amounts for received material and to detect unacceptable shippers' or receivers' values. Comparisons typically involve item verification, seal integrity, gross weights, nondestructive assay measurements (if appropriate), and destructive measurements (if appropriate).

1.2 Regulatory Authority

Title 10 of the *Code of Federal Regulations* sets forth reporting requirements for specified activities.

For reporting transactions for special nuclear material (SNM), NRC regulations 10 CFR 72.78, 10 CFR 74.15, 10 CFR 75.34, 10 CFR 76.113, 10 CFR 76.115, 10 CFR 76.117, and 10 CFR 150.16 require, in part, that each licensee who transfers or receives SNM of any origin must complete, in computer-readable format, a DOE/NRC Form 741. This should be done in accordance with instructions in this NUREG whenever the licensee or certificate holder transfers or receives a quantity of SNM of 1 gram or more contained uranium (U^{235} , U^{233} , or plutonium. Reporting for plutonium (Pu^{238}) is to the nearest one-tenth of a gram of the Pu^{238} isotope.

For reporting transactions for source material, NRC regulations 10 CFR 40.64, "Reports," and 10 CFR 150.16, "Submission to Commission of Nuclear Material Transfer Reports," state, in part, that except as specified within those sections, each licensee must complete and distribute a DOE/NRC Form 741 when the licensee in any manner transfers, receives, or adjusts the inventory of source material of foreign obligations by 1 kilogram or more or imports or exports 1 kilogram or more of uranium or thorium source material. In addition, a licensee who uses 1 kilogram or more of any uranium or thorium source material in enrichment services, downblending uranium that has an initial enrichment of the U^{235} isotope of 10 percent or more, or in the fabrication of mixed-oxide fuels. The licensee must complete DOE/NRC Form 741 in computer-readable format in accordance with instructions in this NUREG and in NMMSS Report D-24. Optionally, if using XML format, licensees may report source material to three decimal places; however, both the shipper and receiver must report at the kilogram unit, unless they both agree to report at the three-decimal unit. If using three-decimal reporting, then the reporting unit is to the nearest thousandth of a kilogram. For example, both the shipper and receiver may report 1655 grams as 1.655 kilograms. However, for consistency, the licensee must continue to report to the same decimal place for that material type. When reporting source

material to three decimal places, both the detail and obligation weight must be reported to the same decimal place.

For reporting transactions for source material or SNM in accordance with an agreement with the International Atomic Energy Agency (IAEA), NRC regulation 10 CFR 75.31, "General Requirements," requires licensees to complete and distribute DOE/NRC Form 741 for all source material or SNM inventory changes, including shipments, receipts, onsite gains and losses, and any other inventory adjustments. These reports must be in computer-readable format and must be based on the records kept in accordance with 10 CFR 75.22, 10 CFR 75.31, 10 CFR 75.32, 10 CFR 75.33, 10 CFR 75.34, and 10 CFR 75.35.

Licensees can comply with these reporting requirements by completing DOE/NRC Form 741 and transmitting it in computer-readable format following the guidance in this NUREG and in NMMSS Report D-24.

In addition, the submission of DOE/NRC Form 741 is normally required as a matter of contract or lease administration for all Government-owned nuclear material transferred (see DOE Orders Series 470 (DOE Order 470.4 and DOE M 470.4-6)).

1.3 Reporting/Distribution Requirements

Reports are required whenever nuclear material in the types and amounts stated in the preceding section moves between locations or operations that have been assigned different reporting identification symbols (RISs) and whenever SNM and source material inventories change. The nuclear material change data (including burnup, production, measured discards, category changes, and decay) must be documented and reported to the NMMSS before or at the same time as the physical inventory taking, unless the NRC has authorized another arrangement.

The shipper initiates a DOE/NRC Form 741. If the licensee is involved in a transfer of material with a party that is not required to prepare a DOE/NRC Form 741, the licensee must prepare and submit both the shipper's and the receiver's section of DOE/NRC Form 741. The most common situation is when a domestic facility is involved in export/import activities. The domestic facility must obtain the information necessary to complete DOE/NRC Form 741 for the foreign facility for all imports of SNM and source material. In the case of exports, the shipper initiates a DOE/NRC Form 741 report, and the NMMSS will generate a DOE/NRC Form 741 report using shipper information. However, if a significant SRD is identified between the U.S. shipper and foreign receiver (as defined in 10 CFR 74.31, 10 CFR 74.43, or 10 CFR 74.59 for SNM, or if there is an indication of loss, theft, or diversion of quantities of source material delineated in 10 CFR 40.64(c)(1)), the shipper is required to document the foreign party's values in a DOE/NRC Form 741 report to the NMMSS. Submittal for a foreign facility does not indicate a responsibility for the other facility or its shipment/receipt of materials.

Reports of physical shipments between RISs must document the actual movement of material. In addition, any reportable information associated with the material must also be reported. In particular, the obligation of material by a foreign entity must follow the physical movement of material between RISs. The transfer of obligations between RISs with no physical movement of material is reported by using action codes X and Y.

1.4 Methods for Preparing and Submitting Data to the Nuclear Materials Management and Safeguards System

The Safeguards Management Software (SAMS) is a miniature version of the NMMSS. This software allows the user to import and export data, make edit checks, generate various reports, and create material balance, inventory data, and transaction data. It has the capability to export data into the required NMMSS predefined computer-readable format outlined in NMMSS Report D-24. The SAMS program may be obtained from the NMMSS operator free of charge.

Licensees can submit data to the NMMSS via the following three methods:

(1) Telephonic Transfers

A licensee may submit DOE/NRC Form 741 electronically by using a modem. To establish an electronic connection with the NMMSS, licensees must contact the NMMSS security officer to request the establishment of a connection with the direct link. If the facility is a valid facility for the type of link requested (classified or unclassified), then the security officer will provide the requester with the appropriate forms to complete.

Upon receipt of the completed forms, the security officer will create a user identification and password and establish an account for the facility. The user identification and password will then be forwarded to the user facility along with a password acknowledgment form. The licensee will sign the acknowledgment form and return it to the security officer, who will then activate the user identification and password.

(2) Data Submittals on Computer Media

NMMSS Report D-24 provides instructions on packaging, data format requirements, acceptable media types, and the mailing address for the submittal of data on computer media.

(3) New and Modified Methods of Transferring Electronic Data

The NRC may authorize new and modified methods of transferring electronic DOE/NRC Form 741 data to the NMMSS. Licensees may confirm authorization to use additional methods for the transfer of these data by contacting the NMMSS operator.

1.5 Documentation and Distribution

The completed DOE/NRC Form 741, in computer-readable format, must be submitted to the NMMSS operator. Licensees can confirm the address and mechanism for providing data to the NMMSS by calling the NMMSS operator. Specific submission instructions depend on whether the DOE/NRC Form 741 is classified or unclassified information. Sections 2.3, 3.3, and 4.4 of this NUREG contain additional distribution information.

Any DOE/NRC Form 741 that is classified must be documented and handled in accordance with all pertinent security requirements. All other submissions that are not classified are considered to be proprietary material control and accounting information and may be requested to be withheld as defined by 10 CFR 2.390, "Public Inspections, Exemptions, Requests for

Withholding.” Each person who is to receive a copy of the report must be verified as a qualified recipient before distribution. Licensees should confirm the address before sending documents to the NMMSS or other recipients. They should also formally provide classification guidance to the NMMSS operator after a decision to classify, declassify, or make any change in previously submitted guidance. To submit Safeguards Information, licensees should use Form 740M, “Concise Note,” stating that the submission is Safeguards Information and should be handled in accordance with 10 CFR 73.21, “Requirements for the Protection of Safeguards Information.”

2 GENERAL INSTRUCTIONS

2.1 Instructions for Completing DOE/NRC Form 741 Reports

If the DOE/NRC Form 741 report is documenting an onsite gain or loss, the licensee should review the instructions for block 6 (ACTION CODE) and the special instructions for the M action code in Section 3 of this NUREG before completing the form.

The numbered instructions below correspond to the numbered blocks on the paper copy of DOE/NRC Form 741. Each shipper of reportable quantities of SNM or source material (refer to blocks 26n and 26q) must send a DOE/NRC Form 741 report to the NMMSS operator and a copy to the receiver's business address no later than the close of business the next working day.

In the case of spent fuel shipments, in accordance with 10 CFR 73.37, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit," the date of shipment is Safeguards Information until 10 days after the shipment or the last shipment in a series of shipments is received. Therefore, DOE/NRC Form 741 should be identified as Safeguards Information, and a Concise Note Form 740M must be submitted stating that the submission is Safeguards Information and should be handled in accordance with 10 CFR 73.21. Concise Note Form 740M should also contain other pertinent information such as whether this is a single shipment or part of a series and the shipment number and total within the series.

For disposals, the burial site operator must prepare and transmit DOE/NRC Form 741 to the NMMSS to document receipt and disposal. NRC regulations stipulate that the DOE/NRC Form 741 reports be submitted in computer-readable format. NMMSS Report D-24 gives the electronic formats for DOE/NRC Form 741.

2.1.1 Reporting Shipper's Data

Licensees should complete DOE/NRC Form 741 in accordance with the following instructions:

1. SHIPPER'S RIS²—Enter the shipper's RIS.
2. RECEIVER'S RIS²—Enter the receiver's RIS.
3. TRANSACTION NUMBER—Enter a number for the same shipper-receiver combination. Numbers in the series must be consecutive (i.e., no skipped numbers).
4. CORRECTION NUMBER—This block is used to identify a transaction that is an adjustment to a previously issued DOE/NRC Form 741. Leave this block blank for an original submission of a DOE/NRC Form 741. Use consecutive numbers, starting with 1, for adjustments. Refer to NMMSS Report D-24 for field sizes. For corrections requiring

² NMMSS Reports D-2, D-3, and D-15 document RISs.

changes only to NMMSS data (and not to the other party's data), use letters (A, B, etc.) instead of numbers. See Section 4 of this NUREG.

5. PROCESS CODE—Enter process code A, C, D, or Z.

- A refers to the initial entry of data.
- C refers to the replacement of data. With the concurrence of the other party to the transaction, up to an entire data set may be replaced at any time before the close of the NMMSS processing period in which the initial submittal was made.
- D refers to the deletion of data. An entire data set may be deleted at any time before the close of the NMMSS processing period in which the initial submittal was made, with the concurrence of the other party to the transaction.
- Z refers to the receiver's acceptance of other party's correction. This processing code can be used only with action code D. Receivers reporting in accordance with 10 CFR Part 75, "Safeguards on Nuclear Material—Implementation of U.S./IAEA Agreement," may not use the Z code.

6. ACTION CODE—This block is used to identify the type of transaction being reported on DOE/NRC Form 741 as specified in 6a and 6b below.

6a. SHIPPER—Enter one of the following action codes:

- A The shipper is reporting a transaction that has taken place between the stated parties.
- C The shipper is adjusting the initial DOE/NRC Form 741 for the shipment or a previous adjustment to the same initial report, acknowledging an adjustment originated by the receiver, or accepting and agreeing with the receiver's adjustment to DOE/NRC Form 741. See Section 4 of this NUREG.
- M The shipper is reporting a one-party transaction or an adjustment to a one-party transaction (e.g., an onsite gain or loss of material as the result of burnup, production, measured discards, category changes, etc.). DOE/NRC Form 742, "Material Balance Report," shows such inventory changes. See Section 3 of this NUREG.
- R The shipper is identifying a one-party transaction to delete an obligated amount of material from the facility's inventory. This code is applicable only to former Soviet Union weapons (WR) material after the fresh low-enriched uranium (LEU) is irradiated in a reactor core. Use of this code implies a removal of WR material; therefore, the value should be entered as a positive number.
- X The shipper is reporting a transfer of obligation that involves no physical movement of material. No obligation transfers of WR material are permitted. No shipper (block 26) or receiver (block 27) detail data need be entered.

- 6b. **RECEIVER**—Enter one of the following action codes:
- B The receiver is reporting that a shipment has been received and that the weights reported by the shipper on DOE/NRC Form 741 were accepted as final receipt values.
 - E The receiver is reporting that a shipment was received, that independent measurements were made, and that the values resulting from the independent measurements are being reported.
 - D The receiver is adjusting the initial DOE/NRC Form 741 that documented the receipt of a shipment or a previous adjustment to the same initial report, or acknowledging an adjustment originated by the shipper, or accepting and agreeing with the shipper's adjustment to DOE/NRC Form 741. See Section 4 of this NUREG.
 - M The receiver is reporting a one-party transaction or an adjustment to a one-party transaction (i.e., an onsite gain or loss of material as the result of burnup, production, measured discards, etc.). DOE/NRC Form 742 shows such inventory changes. See Section 3 of this NUREG.
 - N The receiver is reporting physical receipt of a shipment but will delay the quantity determinations for the shipment of material for more than 10 days but no more than 60 days for source and LEU, or no more than 45 days for highly enriched uranium (HEU). At the end of this time, the receiver will prepare a DOE/NRC Form 741 with a B or E action code to report the receiver's quantity determinations. Use of this code (N) requires no entry of detailed data (block 27) by the receiver.
 - Y The receiver is reporting an acceptance of transfer of obligation that involves no physical movement of material. No shipper (block 26) or receiver (block 27) detailed data need be entered.
7. **DOCUMENTATION**—This block is for paper-copy submissions only. Enter the number of pages if the submission is classified.
8. **SHIPPER**—Leave blank.
9. **RECEIVER**—Leave blank.
10. **NUMBER OF DATA LINES**—After completing block 26 (SHIPPER'S DATA), or block 27 (RECEIVER'S DATA), enter the total number of detail lines in block 26 or 27. The shipper and receiver must report the same number of entries, and the material types must agree line for line.
11. **NATURE OF TRANSACTION**— Leave blank.
12. **SHIPPED FOR ACCOUNT OF**—Leave blank.

13. SHIPPED TO ACCOUNT OF—Leave blank.
14. TRANSFER AUTHORITY—Leave blank.
15. EXPORT OR IMPORT TRANSFERS—For all export or import transfers, enter the NRC export or import license number under which SNM or source material is being transferred. Where transfers are authorized by an NRC general license, enter GEN-LIC. In some cases, the transfer may be exempt from licensing, such as exports of IAEA safeguards samples; then enter LIC-EXEMPT. If several batches authorized by separate licenses are combined into one shipment, a separate DOE/NRC Form 741 must be completed for the portion associated with each import/export license.
16. MATERIAL TYPE AND DESCRIPTION—Leave blank.
17. LINE NUMBER—Enter a sequential line number beginning with the number 1. Refer to the NMMSS Report D-24 for field sizes.
18. COUNTRY OF OBLIGATION—Enter the two-character country or entity designation from Table 1 in Appendix F for the line numbers entered in block 17. See Appendix F to this NUREG for further instructions.
19. MATERIAL TYPE—Enter the material type to which the obligation is attached. Refer to Table 2 in Appendix F. The only material types to be reported are 10, 20, 50, 70, 81, and 88.
20. OBLIGATED ELEMENT WEIGHT—Enter the weight of the obligated amount of the element. Refer to NMMSS Report D-24 for field sizes. See Appendix F for further instructions. Positive or negative values should be entered to appropriately account for material addition or removal, respectively. Reports with an action code of A, B, E, R, X, or Y must be reported with a positive weight. All others can be reported with a positive or negative weight. The sum of obligated material for a material type cannot exceed the sum of the weight value listed in the detail lines.
21. OBLIGATED ISOTOPE WEIGHT—FOR ENRICHED URANIUM ONLY—Enter the weight of the obligated amount of the isotope. Refer to NMMSS Report D-24 for field sizes. For in-place activity, positive or negative values should be entered to appropriately account for material addition or removal, respectively. Reports with an action code of A, B, E, R, X, or Y must be reported with a positive weight. All others can be reported with a positive or negative weight. The sum of obligated material for a material type cannot exceed the sum of the weight value listed in the detail lines.
22. ACTION DATE—Follow the instructions below for blocks 22a through 22e.
 - 22a. SHIPMENT (entry required by shipper)—Enter the date the nuclear material is shipped.
 - 22b. SHIPPER'S CORRECTION (entry required by shipper)—If the document is an acknowledgment of or a correction to a previously issued transaction report, enter the date the correction is recorded or the acknowledgment made, as appropriate. However, dates on acknowledgments must not precede the action date listed on the receiver's correction. Additionally, be aware that if a date preceding the current unreconciled

period is used, the effect of the correction will be reflected in the current period, not the prior period(s) covered by postdated documents.

- 22c. RECEIPT (entry required by receiver)—Enter the date the nuclear material is received.
- 22d. RECEIVER'S MEASUREMENT (entry required by receiver)—This entry is required only if the receiver's action code is E. Enter the date the nuclear material is measured by the receiver.
- 22e. RECEIVER'S CORRECTION (entry required by receiver)—If the document is an acknowledgment or a correction to a previously issued transaction report, enter the date the correction is recorded or the acknowledgment made, as appropriate. However, dates on acknowledgments must not precede the action date listed on the receiver's correction. Additionally, be aware that if a date preceding the current unreconciled period is used, the effect of the correction will be reflected in the current period, not the prior period(s) covered by postdated documents.

Note that in the case of all imports (and for some exports, see Section 1.3), licensees must complete a separate DOE/NRC Form 741 to document the foreign party action, including action dates in blocks 22a and 22c, as applicable.

- 23a. MISCELLANEOUS—Leave blank.
- 23b. CONCISE NOTE ATTACHED— Leave blank.
- 23c. UK REPORTABLE—Facilities reporting material transfers involving facilities in the United Kingdom must indicate in this block whether the shipment is reportable or nonreportable to IAEA. Check YES for reportable or NO for nonreportable.

Note that typically all licensee shipments to/from the United Kingdom are reportable.

- 24. TOTAL GROSS WEIGHT—Enter the total gross weight of the shipment rounded to the nearest kilogram. An approximate or estimated gross weight rounded to the nearest kilogram is acceptable. Make no entry for M action code transactions, receipts, obligation transfers, and correction documents.
- 25. TOTAL VOLUME (WASTE TRANSFERS ONLY)—For transfers of nuclear material to nuclear waste sites (i.e., receiver RIS begins with the letter V), enter the volume of the material to be buried, stated in cubic feet rounded to the nearest cubic foot. An entry in block 25 is not required for transfers to nuclear laundry services.
- 26. SHIPPER'S DATA—Enter the shipper's data in block 26. Enter the receiver's data in block 27. Receivers should review the additional instructions for block 27 before completing the form.

Shipper and receiver measurement data are entered on DOE/NRC Form 741 for each batch of material. For licensees reporting pursuant to the requirements of 10 CFR Part 75, or if the transfer is an import or an export, a batch is a portion of nuclear material that is handled as a unit for accounting purposes at a key measurement point (KMP) and whose composition and quantity are defined by a single set of specifications

or measurements. The batch may be in bulk form or contained in a number of separate items. If the shipment is an export or is being reported pursuant to 10 CFR Part 75, fuel assemblies or loose rods or fuel pins must be listed separately with the identifying label serving as a unique batch name. Fuel assemblies can be reported as “average” enrichment as long as the appropriate accounts (material types 10, 20, 81, etc.) are properly adjusted. Material being transferred may be listed on one line of DOE/NRC Form 741 if the material is all of the same material type, composition, ownership, and weight percent of isotope (except as noted in the next paragraph). Material differing in any of these data elements must be listed on separate lines.

Two or more lines may be necessary to describe a single batch (e.g., spent fuel assemblies, mixed-oxide fuel). If a batch consists of several types of nuclear material, several consecutive lines should be used to describe the batch. The batch name should be repeated on all lines used to describe a single batch. In block 26e, the number of items is also repeated on all lines with the same batch name.

The above general rules for grouping or batching material for reporting purposes are also applicable to licensees reporting imports or exports pursuant to 10 CFR Part 40, “Domestic Licensing of Source Material,” 10 CFR Part 74, “Material Control and Accounting of Special Nuclear Material,” or 10 CFR Part 75. Batch names are optional for other transactions reported pursuant to 10 CFR Part 40 or 10 CFR Part 74.

- 26a. **BACK REFERENCE NUMBER**—Enter the appropriate back-reference number adjustments to previously completed DOE/NRC Form 741 documents.

Licensees must enter the back-reference numbers for action codes C and D and for action code M when reporting adjustments. Licensees must report both the back-reference change digit and the back-reference line number.

The back-reference change digit represents the change digit of the document being corrected for a nullifying entry and the change digit of the document now being completed for a correcting entry. For example, if the DOE/NRC Form 741 being corrected is the original, or if the line being entered represents an addition only, enter 0 (zero).

The back-reference line number represents the line number of the line being corrected for a nullifying entry and the line number of the corresponding nullifying line for a correction entry. If the line being entered represents an addition only or represents a net change, enter zeros.

- 26b. **LINE NUMBER**—In providing detailed measurement data, enter a line number beginning with 1 for the first line of detailed shipper’s data and increase the line number by one for each additional line of detailed shipper’s data entered on the form. When two or more lines of measurement data refer to a single batch, repeat the unique batch name for each line of the batch data. For example, repeat the batch name when different material types of multi-enrichment fuel rods are entered on separate lines or when uranium hexafluoride (UF₆) product material and UF₆ heel material in a cylinder are reported on separate lines.

26c. TYPE OF INVENTORY CHANGE—All changes to inventory that meet the reporting criteria must be reported on DOE/NRC Form 741.

Appendix B explains the inventory change type (ICT) codes and indicates whether they are to be entered in block 26c. Enrichment facilities may use the two-digit numerical value for indicating a change type or proceed as directed by the NRC. When shipping to a V RIS, the shipper must use ICT code 74. A measured discard can be documented as an onsite transfer, discard to a pond/lagoon, or transferred to a holding area.

Discharges to lagoon and movement to holding areas are documented with a suffix attached to the RIS:

- Use L when material is discarded into a pond or lagoon.
- Use H when material is transferred to a holding area (refer to the term “holding account” in the glossary in Appendix D) at the facility pending possible shipment offsite for disposal

Note that use of a holding or lagoon account requires establishment of account and prior approval by the NRC.

The shipper should enter its RIS in block 1 (SHIPPER’S RIS) and the same RIS in the block 2 (RECEIVER’S RIS), but append an L or H to the receiver’s RIS as appropriate. For example, if a facility with RIS XYZ discards material to a lagoon, the transaction on DOE/NRC Form 741 would be from XYZ to XYZL.

26d. IDENTIFICATION (ITEM/BATCH NAME)—Enter a name or number, or a combination of both, that identifies the batch of material being shipped. If the licensee is reporting pursuant to 10 CFR Part 75, or if the transfer is an import or export, the shipper or receiver enters a name that identifies a unique portion of nuclear material handled as a unit for accounting purposes. For fuel pins and rods, the batch name should be the identification numbers of the fuel pin or rod.

In the case of an import, the receiver must use the same batch name as the shipper, provided that the shipper’s batch name conforms to the above specifications. If it does not, submit a concise note in accordance with the instructions (Section 5) explaining the difference. When two or more lines of measurement data refer to a single batch, repeat the unique batch name for each line of the batch data. For example, repeat the batch name when different material types of multi-enrichment fuel rods are entered on separate lines or when UF₆ product material and UF₆ heel material in a cylinder are reported on separate lines.

26e. NUMBER OF ITEMS—Enter the number of similar items of which the line entry consists (e.g., cylinders, packs, drums, bird cages, bottles, tank vessels). When reporting fuel pins, rods, or plates, report the number of separate fuel pins, rods, or plates involved. When reporting fuel assemblies, report the number of complete assemblies represented on the line entry. In the case of transfer of bulk material, enter the number 1. Leave blank if an M action code is used.

26f. PROJECT NUMBER—Leave blank.

26g. MATERIAL TYPE—Enter the appropriate SNM or source material type code from the list below.

<u>U.S. Code</u> (Domestic transfers)	<u>IAEA Code</u> (Imports/Exports)	<u>Description</u>
10	D	Depleted uranium
20	EG	Enriched uranium
50	P	Plutonium
70	EK	U ²³³
81	N	Normal uranium
83 ³	Pu	Pu ²³⁸
88	T	Thorium
89	To be obtained from IAEA	Uranium in cascade

26h. COMPOSITION/FACILITY CODE—Enter the appropriate code describing the physical form (unencapsulated, encapsulated, etc.) and the chemical form of the material. See Appendix A.

If the installation has been notified by letter from the NRC, as provided in 10 CFR 75.11, "Installation Information," that it has been identified under the U.S./IAEA Safeguards Agreement, enter the appropriate code from the list developed during the formulation and negotiation of the facility attachment (FA) or transitional facility attachment (TFA) provided pursuant to 10 CFR 75.8, "Facility Attachments."

Note: In accordance with 10 CFR 75.11, any change in facility operations or processes that would result in any changes in, additions to, or deletions from the list should be communicated to the NRC in writing, to the extent provided in the license conditions, at least 70 days in advance of the changes so that new composition codes can be assigned.

26i. OWNER CODE—This code identifies the ownership of the material at the time it was in the shipper's possession. Enter the appropriate code from the following.

- G U.S. Government-owned
- J Not U.S. Government-owned

Refer to the glossary in Appendix D to this document for further description of U.S. Government-owned material.

³ Report as Pu²³⁸ if the contained Pu²³⁸ is greater than 10 percent of total plutonium by weight; otherwise, report as plutonium.

- 26j. KEY MEASUREMENT POINT (KMP)—This data element applies only to licensees reporting pursuant to the requirements of 10 CFR Part 75. All other licensees must leave this block blank. This block is for reporting on a facility where nuclear material is in a form that may be measured to determine material flow or inventory. Codes for KMPs are identified in the FAs or TFAs developed for those facilities described in the instructions for block 26h.
- 26k. MEASUREMENT IDENTIFICATION (see 26j)—This block applies only to licensees reporting pursuant to the requirements of 10 CFR Part 75 and to those facilities identified in the instructions for 26h. All other licensees must leave this block blank. This block indicates where and when the material was measured. It consists of three parts.
- 26k1. BASIS—Enter the pertinent code from the following:
- N if the batch data are based on measurements made in an IAEA material balance area (MBA) other than the reporting MBA
 - L if the batch data are based on measurements made in another IAEA MBA and have been previously reported by the reporting MBA in a DOE/NRC Form 741 or a DOE/NRC Form 742C, “Physical Inventory Listing”
 - M if the batch data are based on measurements made in the reporting IAEA MBA and the data were not previously reported
 - T if the batch data are based on measurements in the reporting IAEA MBA and have been previously reported for that MBA on a DOE/NRC Form 741 or a DOE/NRC Form 742C
- 26k2. OTHER MEASUREMENT POINT (OMP)—For batch data designated code M in block 26k1, enter the code of the KMP where measurements were made if it is different from the KMP indicated in block 26j. If it is the same, leave the block blank.
- 26k3. MEASUREMENT METHOD—If two or more measurement methods employed at the same KMP have a different measurement uncertainty, enter the code for the measurement method used, as identified in the FA.
- 26l. GROSS WEIGHT—Enter the gross weight of the line entry in kilograms of material shipped plus tare weight (packaging and shipping container).
- 26m. NET WEIGHT—Enter the weight of the material shipped, excluding tare weight, in grams for SNM and kilograms for source material.
- 26n. ELEMENT WEIGHT—Enter the weight of the contained SNM or source material rounded to the quantities reported below.

<u>Material</u>	<u>Reporting Units</u>
Plutonium or uranium enriched in U ²³⁵ or U ²³³	nearest whole gram
Pu ²³⁸	nearest 1/10 gram
Source material	nearest kilogram ⁴

If the quantity to be entered is equal to or greater than 0.5 of the reporting unit, the quantity should be rounded up to the next whole reporting unit. If the quantity to be entered is less than 0.5 of the reporting unit, the quantity should be rounded down to the next whole reporting unit.

- 26o. ELEMENT LIMIT OF ERROR—Limits of error need be reported only by licensees who are authorized to possess at any time and location SNM in a quantity exceeding 1 effective kilogram and authorized to use SNM for activities other than those involved in the operation of a nuclear reactor licensed pursuant to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities”; who are involved in a waste disposal operation; or who are authorized to possess sealed sources.

Complete when the total shipment contains more than 50 grams of U²³⁵, U²³³, or plutonium, or any combination of these. Enter the limit of error for each element entry using the same weight units as in block 26n, except where the line entry represents (1) a sealed plutonium-beryllium source, (2) samples that have all been determined by other means to contain less than 10 grams U²³⁵, U²³³, or plutonium, and (3) reactor-irradiated fuels involved in research, development, and evaluation programs in facilities other than irradiated-fuel reprocessing plants.

Limits of error are to be at the 95-percent confidence level, propagated by the uncertainties of the weight measurement, the chemical analysis, and the sampling method. Limits of error are not applicable to source material. Licensees making onsite transfers between two different RISs or within the same RIS are exempt from supplying limits of error data for the transfers. Transfers between a license-exempt operation and a licensed operation at the same location are not considered onsite transfers, and limits of error are required.

- 26p. WEIGHT % ISOTOPE—Enter the weight percent of the isotope U²³⁵ if the uranium is enriched or depleted in U²³⁵. If plutonium, enter the weight percent of the isotope Pu²⁴⁰. If Pu²³⁸, enter the weight percent of the isotope Pu²³⁸. Report weight percent to at least two, but not more than four, decimal places, depending on the accuracy of the measurement method employed (for example, XX.XXXX%). For U²³³, enter the parts per million of U²³². This block does not apply to natural uranium and thorium. Use separate lines to report material of different enrichments. The plutonium and U²³⁵ content of irradiated fuel must be determined and reported upon removal of the spent

⁴ Optionally, if the reporter is using XML format, source material may be reported to three decimal places. When using three-decimal reporting to report source material, then the reporting unit is to the nearest thousandth of a kilogram (i.e., 1655 grams will be reported as 1.655 kilograms).

fuel from the reactor core. Reactor operators may report the total nonfissile isotope instead of Pu²⁴⁰ in this block for spent fuel if the computer codes the operator uses have this limitation.

- 26q. ISOTOPE WEIGHT—Enter the isotope weight. If enriched uranium or U²³³, enter weight to the nearest gram of U²³⁵ or U²³³ as appropriate. If plutonium, enter the sum of Pu²³⁹ and Pu²⁴¹ to the nearest gram. If Pu²³⁸, enter the weight of the isotope Pu²³⁸ to the nearest one-tenth of a gram. For depleted uranium, enter the isotope weight to the nearest kilogram. Make no entry for other source material.

If the quantity to be entered is equal to or greater than 0.5 of the reporting unit, the quantity should be rounded up to the next whole reporting unit. If the quantity to be entered is less than 0.5 of the reporting unit, the quantity should be rounded down to the next whole reporting unit.

- 26r. ISOTOPE LIMIT OF ERROR—Limits of error need be reported only by licensees who are authorized to possess at any one time and location SNM in a quantity exceeding 1 effective kilogram and authorized to use such SNM for activities other than those involved in the operation of a nuclear reactor licensed pursuant to 10 CFR Part 50, who are involved in a waste disposal operation, or who are authorized to possess sealed sources.

Complete when the total shipment contains more than 50 grams of U²³⁵, U²³³, or plutonium, or any combination of these. Enter the limit of error for each isotope entry using the same weight units as in block 26n, except where the line entry represents (1) a sealed plutonium-beryllium source, (2) samples that have all been determined by other means to contain less than 10 grams U²³⁵, U²³³, or plutonium, and (3) reactor-irradiated fuels involved in research, development, and evaluation programs in facilities other than irradiated-fuel reprocessing plants.

Limits of error are to be at the 95-percent confidence level, propagated by the uncertainties of the weight measurement, the chemical analysis, and the sampling method. Limits of error are not applicable to source material. Licensees making onsite transfers between two different RISs or within the same RIS are exempt from supplying limits of error data for the transfers. Transfers between a license-exempt operation and a licensed operation at the same location are not considered onsite transfers, and limits of error are required.

- 26s. SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED—If submitted on paper, the report must be signed by an authorized representative of the licensee. Otherwise, enter the date submitted. Each licensee must establish internal procedures to ensure that the information provided in the report is accurate and that the report has been prepared and issued only by authorized licensee personnel.

Proprietary information must be included when necessary to provide an adequate response. An application to withhold such information from public disclosure may be made and will be dispositioned in accordance with the provisions of 10 CFR 2.390. If any of this information is of particular sensitivity, a request may be made that such information not be transmitted to IAEA. Such a request must refer to and conform with 10 CFR 75.12, "Communication of Information to IAEA."

2.1.2 Reporting Receiver's Data

Each receiver of reportable quantities of SNM or source material must acknowledge receipt of shipments in accordance with the following instructions:

- If the receiver plans to accept the shipper's measurement data without making independent measurements (B action code), the receiver must, within 10 days of receipt of the material, submit a DOE/NRC Form 741. There are two options for filling out the form:
 - (1) Complete blocks 1 through 25 and enter a zero (0) in block 10.
 - (2) Complete blocks 1 through 25, enter the shipper's values in block 26, and repeat the shipper's values in block 27.

Facilities reporting pursuant to 10 CFR Part 75 must use the second option. They should dispatch the form in accordance with the instructions in Section 2.3.2.

- If the receiver makes independent measurements (E action code), the receiver must do the following within 10 days of receipt of the material:
 - (1) Complete blocks 1 through 25, enter the shipper's values in block 26, and complete blocks 27a through 27s of DOE/NRC Form 741.
 - (2) Dispatch the form in accordance with the instructions in Section 2.3.2.
- If the receiver intends to make independent measurements within 60 days for source material or LEU, or 45 days for HEU (N action code), unless the NRC authorizes an exemption, the receiver shall do the following, within 10 days of receipt of the material:
 - (1) Complete blocks 1 through 23
 - (2) Dispatch the form in accordance with the instructions in Section 2.3.2.
 - (3) After independent measurements are made, follow the instructions for reporting a B or E action code. If measurements are delayed, complete them and report them on DOE/NRC Form 741 within 60 days for source material and LEU and within 45 days for HEU after the receipt of each shipment, except in the case of receipts of scrap and irradiated material.

In the case of a scrap processor receiving several shipments of scrap that are accumulated and processed together, the recovered quantity of material must be prorated to the specific transmittal documents and line entries to maintain the one-to-one correspondence between shipper's and receiver's data.

27. RECEIVER'S DATA—Fill in the receiver's data blocks as follows.

Enter shipper and receiver measurement data on DOE/NRC Form 741 for each batch of material. For licensees reporting pursuant to 10 CFR Part 75 requirements or if the

transfer is an import or an export, a batch is a portion of nuclear material that is handled as a unit for accounting purposes at a KMP and whose composition and quantity are defined by a single set of specifications or measurements. The batch may be in bulk form or contained in a number of separate items. If the shipment is an export or is being reported pursuant to 10 CFR Part 75, list fuel assemblies or loose rods or fuel pins separately with the identifying label serving as a unique batch name. Report fuel assemblies as “average” enrichment as long as the appropriate accounts (material types 10, 20, 81, etc.) are properly adjusted. Material being transferred may be listed on one line of DOE/NRC Form 741 if the material is all of the same material type, composition, ownership, and weight percent of isotope (except as noted in the next paragraph). List material differing in any of these data elements on separate lines.

Two or more lines may be necessary to describe a single batch (e.g., spent fuel assemblies, mixed-oxide fuel). If a batch consists of several types of nuclear material, use several consecutive lines to describe the batch. Repeat the batch name on all lines used to describe a single batch. In block 27e, also repeat the number of items on all lines with the same batch name.

The above general rules for grouping or batching material for reporting purposes also apply to licensees reporting imports or exports pursuant to 10 CFR Part 40 or 10 CFR Part 74. Batch names are optional for other transactions reported pursuant to 10 CFR Part 40 or 10 CFR Part 74.

- 27a. BACK REFERENCE NUMBER—Must match the shipper’s value. See 26a.
- 27b. LINE NUMBER—Must match the shipper’s value. See 26b.
- 27c. TYPE OF INVENTORY CHANGE—Must match the shipper’s value. See 26c.
- 27d. IDENTIFICATION (ITEM/BATCH NAME)—See 26d.
- 27e. NO. OF ITEMS—See 26e.
- 27f. PROJECT NUMBER—See 26f.
- 27g. MATERIAL TYPE—Must match the shipper’s value. See 26g.
- 27h. COMPOSITION/FACILITY CODE—See 26h.
- 27i. OWNER CODE—Describes the material ownership at the time it comes into the receiver’s possession. See 26i.
- 27j. KEY MEASUREMENT POINT—See 26j.
- 27k. MEASUREMENT IDENTIFICATION—See 26k.
- 27l. GROSS WEIGHT—See 26l.
- 27m. NET WEIGHT—See 26m.

- 27n. ELEMENT WEIGHT—See 26n.
- 27o. ELEMENT LIMIT OF ERROR—See 26o.
- 27p. WEIGHT % ISOTOPE—See 26p.
- 27q. ISOTOPE WEIGHT—See 26q.
- 27r. ISOTOPE LIMIT OF ERROR—See 26r.
- 27s. SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED—See 26s.

2.2 Preparation of DOE/NRC Form 741 in Computer-Readable Format

NMMSS Report D-24 provides instructions for preparing DOE/NRC Form 741 in computer-readable format as required for submittals.

2.3 Distribution of DOE/NRC Form 741

2.3.1 Shipper

Each shipper of reportable quantities of SNM or source material must dispatch a DOE/NRC Form 741, as described below, no later than the close of business the next working day after the shipment. In the case of spent fuel shipments, in accordance with 10 CFR 73.37, the date of shipment is Safeguards Information until 10 days after the shipment or the last shipment in a series of shipments is received. Therefore, the DOE/NRC Form 741 should be identified as Safeguards Information and handled according to 10 CFR 73.21.

When submitting Safeguards Information, a Concise Note Form 740M must be submitted stating that the submission is Safeguards Information and should be handled in accordance with 10 CFR 73.21.

Burials are reported when shipped. The burial site operator must prepare a DOE/NRC Form 741 and transmit it to the NMMSS to document receipt and disposal.

The completed DOE/NRC Form 741 is distributed as follows:

- Provide a copy, in a mutually agreeable format, to the other party in the transaction.
- Submit one copy in computer-readable format to the NMMSS. See Section 1.5 for documentation and distribution of classified and unclassified reports.
- Retain one copy for the file.

2.3.2 Receiver

The receiver should distribute the completed DOE/NRC Form 741 as follows:

- Submit one copy in computer-readable format to the NMMSS. See Section 1.5 for documentation and distribution of classified and unclassified reports.

- Return one copy, in a mutually agreeable format, to the shipper.
- Retain one copy for the file.

3 INSTRUCTIONS FOR ONSITE GAINS AND LOSSES (M ACTION CODE)

3.1 Instructions for Completing DOE/NRC Form 741

When using action code M, the licensee should complete DOE/NRC Form 741 in accordance with the following instructions:

1. SHIPPER'S RIS—Enter the RIS.
2. RECEIVER'S RIS—Same as in block 1.
3. TRANSACTION NUMBER—See the instructions for block 3 in Section 2.1.1 or contact the NMMSS operator for other options.
4. CORRECTION NUMBER—See the instructions for block 4 in Section 2.1.1.
5. PROCESSING CODE—See the instructions for block 5 in Section 2.1.1.
6. ACTION CODE—Enter M in 6a or 6b or both.
7. DOCUMENTATION—Enter the number of pages if the submission is classified. This block is for paper-copy submissions only.
8. NAME AND ADDRESS OF SHIPPER—Leave blank.
9. NAME AND ADDRESS OF RECEIVER—Leave blank.
10. NUMBER OF DATA LINES—Enter the total number of detail line entries on the form.
11. NATURE OF TRANSACTION—Leave blank.
12. SHIPPED FOR ACCOUNT OF—Leave blank.
13. SHIPPED TO ACCOUNT OF—Leave blank.
14. TRANSFER AUTHORITY—Leave blank.
15. EXPORT OR IMPORT TRANSFERS—Leave blank.
16. MATERIAL TYPE AND DESCRIPTION—Leave blank.
17. LINE NUMBER—See the instructions in Section 2.1.1 for block 17.
18. COUNTRY OF OBLIGATION—See the instructions in Section 2.1.1 for block 18.
19. MATERIAL TYPE—See the instructions in Section 2.1.1 for block 19.

20. OBLIGATED ELEMENT WEIGHT—See the instructions in Section 2.1.1 for block 20.
21. OBLIGATED ISOTOPE WEIGHT—FOR ENRICHED URANIUM ONLY—See the instructions in Section 2.1.1 for block 21.
22. ACTION DATE—Enter the date of the activity in at least one of blocks 22a through 22e. If more than one block is completed, all dates must be the same.
23. MISCELLANEOUS—Leave blank.
24. TOTAL GROSS WEIGHT—Leave blank.
25. TOTAL VOLUME—Leave blank.
26. SHIPPER'S DATA
- 26a. BACK REFERENCE NUMBER—See the instructions in Section 2.1.1 for this block.
- 26b. LINE NO.—See the instructions in Section 2.1.1 for this block.
- 26c. TYPE OF INVENTORY CHANGE—See Section 2.1.1.
- 26d. IDENTIFICATION (ITEM/BATCH NAME)—See Section 2.1.1.
- 26e. NO. OF ITEMS—See Section 2.1.1.
- 26f. PROJECT NUMBER—Leave blank.
- 26g. MATERIAL TYPE—See Section 2.1.1.
- 26h. COMPOSITION/FACILITY CODE—See Section 2.1.1.
- 26i. OWNER CODE—See Section 2.1.1.
- 26j. KEY MEASUREMENT POINT—See Section 2.1.1.
- 26k. MEASUREMENT IDENTIFICATION—See Section 2.1.1.
- 26l. GROSS WEIGHT—See Section 2.1.1.
- 26m. NET WEIGHT—See Section 2.1.1.

- 26n. ELEMENT WEIGHT—See Section 2.1.1.
- 26o. ELEMENT LIMIT OF ERROR—See Section 2.1.1.
- 26p. WEIGHT % ISOTOPE—Leave blank for ICT codes MF and EQ unless the material is enriched uranium. For ICT codes LN and TN, report the same weight percent of isotope as for the beginning of the inventory period. See the instructions in Section 2.1.1 for this block.
- 26q. ISOTOPE WEIGHT—See Section 2.1.1.
- 26r. ISOTOPE LIMIT OF ERROR—Leave blank.
- 26s. SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED—See Section 2.1.1.
27. RECEIVER'S DATA—See the instructions in Section 2.1.2 for block 27.

3.2 Preparation of DOE/NRC Form 741 in Computer-Readable Format

NMMSS Report D-24 provides instructions for preparing DOE/NRC Form 741 in computer-readable format as required for submittals.

3.3 Distribution of DOE/NRC Form 741

Distribution of the completed DOE/NRC Form 741 should be as follows:

- Submit one copy in computer-readable format to the NMMSS. (See Section 1.5 for documentation and distribution of classified and unclassified reports.)
- Retain one copy for the file.

4 INSTRUCTIONS FOR CORRECTING A DOE/NRC FORM 741 (C, D, AND M ACTION CODES OR Z PROCESS CODE)

Adjustments are independent actions. Either the shipper or the receiver may initiate an adjustment to a DOE/NRC Form 741 reporting the original shipment or receipt of material or an adjustment to any previous adjustment to the original. The other party is required to acknowledge that an adjustment was made but not required to make the same adjustment to its records.

4.1 Originator

The originator of the "corrected copy" must do the following:

- Complete blocks 1 through 25, as appropriate, referring to the copy of DOE/NRC Form 741 being corrected.
- Insert in block 26a or 27a of the "did-read" (Was) line, as appropriate, a back-reference code. If the line of data has not been previously corrected, use a zero (0). If previously corrected, the first digit is the correction number (block 4) from the DOE/NRC Form 741 being corrected. If the line of data has been corrected several times, use the most recent correction number. The next two digits are the line number (block 26b or 27b) on the DOE/NRC Form 741 being corrected. The "did-read" line can only reference a line on the original document or a "should-read" line. No two or more "did-read" lines can back-reference the same line.
- Complete the "did-read" line, blocks 26b through j and n through r or 27b through j and n through r, as appropriate, by duplicating the entire line being corrected from the DOE/NRC Form 741 being corrected and indicating the opposite sign (positive or negative) from the original one used in reporting the number of items (block e), element weight (block n), element limit of error (block o), isotope weight (block q), and isotope limit of error (block r).
- Insert in block 26a or 27a of the "should-read" (Should-Be) line, as appropriate, a back-reference code that references the corresponding "did-read" line. The first digit is the correction number of the document being completed. The next two digits are the line number of the corresponding "did-read" line. The "should-read" line can only reference a "did-read" line. No two or more "should-read" lines can back-reference the same line.

Repeat this procedure until all lines requiring adjustment have been backed out and the correct information has been entered.

The "did-read" and "should-read" for each line being adjusted should be paired (i.e., consecutive).

One or more changes can be made to each line. Only incorrect lines should be included in a correction report.

If adding a line to the original document, the back-reference should be (000) (block 26a or 27a), and pairing is not done.

If a line previously reported is split into two or more lines, one of the “should-be” lines should back-reference the “did-read” line, and all others should be considered new additions (000).

If a line is to be voided, use only a “did-read line” (no pairing). Appendix C provides examples of an initial report and subsequent correction reports.

4.2 Receiver

Within 10 days, the facility receiving the corrected DOE/NRC Form 741 must do one of the following:

- Submit a DOE/NRC Form 741 acknowledging the adjustment (which will close a transaction but will not affect the acknowledging party’s values).
- Submit a DOE/NRC Form 741 accepting the adjustment or reporting the facility’s own adjustment. This closes a transaction and applies the accepted or reported adjustment to the acknowledging party’s values.

There is no requirement for both parties to make the same quantity adjustments. However, if both parties choose to adjust on the same corrected DOE/NRC Form 741, they must both report the same number of entries, and the material types must agree line for line.

4.3 Use of the Z Process Code

If the receiving party agrees to all changes for an action code C document, the receiving party may use process code Z and action code D. A DOE/NRC Form 741 should be used to report data in blocks 1, 2, 3, 4, and 22. The Z code should be entered in block 5b and action code D entered in block 6b, and block 22 should be completed. A licensee reporting pursuant to 10 CFR Part 75 may not use the Z process code.

4.4 Distribution of Corrections to DOE/NRC Form 741

The originator should do the following:

- Submit one copy, in a mutually agreeable format, to the other party in the transaction.
- Submit one copy in computer-readable format to the NMMSS. (See Section 1.5 for documentation and distribution of classified and unclassified reports.)
- Retain one copy for the originating facility’s file.

Upon receipt of a correction, a licensee should distribute a completed DOE/NRC Form 741 reporting an acknowledgment, acceptance, or correction as follows:

- Submit one copy to the NMMSS. (See Section 1.5 for documentation and distribution of classified and unclassified reports.)
- Return one copy to the originator.
- Retain one copy for the facility's file.

5 INSTRUCTIONS FOR COMPLETING DOE/NRC FORM 740M

These instructions apply to all licensees who have been notified by letter from the NRC, as provided in 10 CFR 75.11, that their installations have been identified under the U.S./IAEA Safeguards Agreement. FAs or TFAs for such installations may specify circumstances under which concise notes must be submitted to the IAEA as attachments to other reports. These facilities should use DOE/NRC Form 740M to explain to the foreign state where the IAEA-required data items appear.

Licensees who are reporting what is determined to be Safeguards Information must submit a concise note, as discussed in Section 1.5.

These instructions also apply to importers who for any reason cannot use the same batch name as the shipper. If the shipper fails to supply a batch name, the importer should supply a batch name and attach a concise note to that effect.

In some cases, it may be desirable to provide additional explanatory information with reports. DOE/NRC Form 740M is used to submit this information. A DOE/NRC Form 740M may be attached to DOE/NRC Form 741, to DOE/NRC Form 742, to DOE/NRC Form 742C, or to a standalone concise note for facilities reporting under 10 CFR Part 75.

The numbered blocks of DOE/NRC Form 740M should be completed as follows:

1. NAME AND ADDRESS—Leave blank.
2. ATTACHMENT TO—Place an X in the appropriate box to indicate that this explanatory information will be attached to a DOE/NRC Form 741

When attaching the concise note to DOE/NRC Form 742 or 742C, enter the number 1 for the first concise note attached to the particular DOE/NRC Form 742 or 742C. When issuing an additional concise note for a particular DOE/NRC Form 742 or 742C, enter the next sequential number (2–9) of the concise note.

3. RIS—Enter the RIS to which the explanatory information in this report applies.
4. REPORTING PERIOD—Complete this block only when the concise note is attached to a DOE/NRC Form 742 or a DOE/NRC Form 742C. Enter the beginning and ending dates of the reporting period as shown on Form 742.
5. TRANSACTION DATA—Complete this block only when the concise note is attached to a DOE/NRC Form 741 or if a standalone concise note is submitted. Copy the requested data from DOE/NRC Form 741. All entries in this block must be identical to those on DOE/NRC Form 741. Fill in the blocks as follows.
 - 5A. SHIPPER'S RIS—Enter the RIS of the shipper.
 - 5B. RECEIVER'S RIS—Enter the RIS of the receiver.

- 5C. TRANSACTION NUMBER—Enter the unique transaction number.
- 5D. CORRECTION NUMBER—If the DOE/NRC Form 741 is a correction to a previous report, enter the correction number.
- 5E. PROCESSING CODE—Insert the same code used in DOE/NRC Form 741.
- 5F. ACTION CODE—If a Form 740M is used with a DOE/NRC Form 741, enter the same action code as on the DOE/NRC Form 741, block 7; otherwise, enter action code M.
6. REPORTING DATE—Complete this block if the concise note is attached to a DOE/NRC Form 741 or 742C. Copy the date shown on DOE/NRC Form 741 or 742C.
7. This block contains the actual explanatory data and other data necessary to link the explanatory data to the part or parts of the report to which the data apply. Complete this block as follows.
- 7A. LINE NO.—Enter consecutive numbers beginning with 1 for each explanatory reference.
- 7B. ENTRY REFERENCE—If the explanatory information entered on this line of the DOE/NRC Form 740M applies to the entire DOE/NRC Form 741, 742, or 742C, enter WHOLE REPORT. If the explanation applies to the data on a specific batch on a DOE/NRC Form 741 or 742C, copy the batch name exactly as it appears on the DOE/NRC Form 741 or 742C. If the explanation applies to a specific material balance category on a DOE/NRC Form 742, enter the two-digit number of the material balance category. Additionally, if the explanation applies to material balance categories 11, 30, 42, 43, or 51, enter the RIS shown on the relevant line of DOE/NRC Form 742. If the explanation applies to categories 22 or 71, enter the two-character ICT as shown on the relevant line of DOE/NRC Form 742. If the DOE/NRC Form 740M action code is M, enter GENERAL.
- 7C. TEXT OF CONCISE NOTE—Enter any 43 letters, numbers, or special characters per line. Up to 99 lines of text may be used for any one explanation.
8. SIGNATURE—An authorized representative of the licensee must sign DOE/NRC Form 740M. See the instructions in Section 2.1.1 for block 26s.
9. TITLE—Enter the title of the person signing the form.
10. DATE—Enter the date the form is signed.

DOE/NRC Form 740M should be put into computer-readable format following the additional guidance in NMMSS Report D-24.

Copies of Form 740M must be attached to, and distributed with, the DOE/NRC Form 741, 742, or 742C to which the DOE/NRC Form 740M applies.

6 DOE REPORTING REQUIREMENTS FOR PROPRIETARY INTERESTS OF THE GOVERNMENT

NRC licensees are responsible for routinely reporting to the NMMSS all DOE-owned, -loaned, or -leased material in their possession as prescribed in DOE Orders Series 470 (DOE Order 470.4 and DOE M 470.4-6).

7 REFERENCES

This report and its appendices reference the NMMSS documents listed below. To request these documents, telephone the NMMSS operator.

NMMSS Report D-2, "The DOE Directory of Reporting Identification Symbols"

NMMSS Report D-3, "The NRC Directory of Reporting Identification Symbols"

NMMSS Report D-15, "International Nuclear Facilities Codes Manual"

NMMSS Report D-24, "Personal Computer Data Input for NRC Licensees"

NMMSS Report D-25, "Transaction Composition Code Reference List"

American National Standards Institute Report D-50A-109, "ANSI Codes"

APPENDIX A
COMPOSITION CODES

COMPOSITION CODES

The codes listed below are for use in completing blocks 26h or 27h on DOE/NRC Form 741, "Nuclear Material Transaction Reports." If an installation has been notified by letter from the U.S. Nuclear Regulatory Commission (NRC), as provided in Title 10, Section 75.11, "Installation Information," of the *Code of Federal Regulations* (10 CFR 75.11), that it has been identified under the U.S./International Atomic Energy Agency Safeguards Agreement, the licensee should enter the appropriate code from the list developed during the formulation and negotiation of the facility attachment or transitional facility attachment (after the document has been provided under 10 CFR 75.8, "Facility Attachments").

In accordance with 10 CFR 75.11, any change in facility operations or processes that would result in any changes to, additions to, or deletions from the list should be communicated to the NRC in writing, to the extent provided in the facility's license conditions, at least 70 days in advance of the changes so that new composition codes can be assigned.

For additional composition codes, see Nuclear Materials Management and Safeguards System (NMMSS) Report D-25, "Transaction Composition Code Reference List," and American National Standards Institute (ANSI) Report D-50A-109, "ANSI Codes."

UNENCAPSULATED (except scrap)

Code

032	U ₃ O ₈ (oxide product)
048	UO ₃ (trioxide product)
770	Carbides
455	Other Oxides Product (for all oxides not otherwise identified)
064	Tetrafluorides (tetrafluoride product)
083	UF ₆ (hexafluoride product)
095	Enriching Process
102	Hexafluorides—in Enriching Process
103	Hexafluoride Product
107	Uranium in Cascades—Holdup
120	UF ₆ Feed
773	UF ₆ Heels

- 363 In Reactor Product
- 409 Nitrate Solutions Product
- 786 Acetate Solutions Product
- 701 Unalloyed Metal Product
- 702 Alloyed Metal Product
- 771 Samples and Standards
- 637 Sintered Products

UNENCAPSULATED SCRAP (for recovery)* +

- 375 Irradiated Recyclable Fuel

WASTE (for disposal)

Waste material should be described by an appropriate scrap category.*

ENCAPSULATED

- 291 Fabricated Fuel Elements (pins, rods, plates)
- 309 Fuel Assemblies (assembled items product)
- 481 Sealed Sources (fabricated sources product)

OTHER

- 776 Other Products
- E04 Miscellaneous Noncombustibles (Uranium)

Note: Uranium/thorium and plutonium/uranium mixed-oxide fuels should be reported either as fuel elements (code 291) or as fuel assemblies (code 309) as applicable.

Report the different material types in the mixed-oxide fuels on separate lines.

* ANSI codes for plutonium scrap may be used in lieu of these codes.

+ Where a number of dissimilar items of scrap are put into the same container, use the composition code for the predominant scrap category.

APPENDIX B

INVENTORY CHANGE TYPE CODES FOR COMPLETING BLOCKS 26c AND 27c OF DOE/NRC FORM 741

INVENTORY CHANGE TYPE CODES FOR COMPLETING BLOCKS 26c AND 27C OF DOE/NRC FORM 741

All inventory change type codes on transaction reports consist of two alphabetic or numeric characters. The accounting entry type codes used on material balance reports (MBRs) consist of two digits. In the following pages, the number(s) in parentheses following the alphabetic code represent the MBR line to which the transaction entries correspond. The standard inventory changes and other entry types are listed below. In transaction reports, all transactions and operations are understood to be related to individual batches. In MBRs, corresponding the same codes denote consolidated entries (i.e., the sums of all individual operations with the same code over the material balance period). In addition, MBRs include entries related to inventory data and adjustments not reported on transaction reports.

Gains or losses of material that occur based on the total inventory, or in which individual effects to inventories by country of obligation code cannot be determined, should be reported as a loss to all country obligation balances by applying a one to one ratio by percent of the country of obligation to the amount of inventory affected to the amount of inventory change. For example, if decay is reported for plutonium within a reactor and the plutonium balance represents several different country of obligation balances, the following calculations would determine the amount of decay to apply to each country of obligation code balance.

	<u>Element</u>	<u>Isotope</u>
Amount of inventory for which decay applies	1,202,239	950,947
Calculated decay for the period	998	998

Balance by Country Obligation Code

<u>OBLIGATION CODE</u>	<u>ELEMENT</u>	<u>ISOTOPE</u>	<u>% Ratio to Total Inventory</u>
33	200,000	158,196	$200,000/1,202,239 = .166 \times 100 = 17\%$
34	509,321	402,863	$509,321/1,202,239 = .424 \times 100 = 42\%$
32	<u>492,918</u>	<u>389,888</u>	$492,918/1,202,239 = .410 \times 100 = 41\%$
Total Pu Balance	1,202,239	950,947	100%

Amount of decay to apply to each country of obligation code balance

33		998 x 17% = 169.66 rounded to the nearest gram = 170
34		998 x 42% = 419.16 rounded to the nearest gram = 419
32		998 x 41% = 409.18 rounded to the nearest gram = <u>409</u> 998

The following should also be used for the isotope balances:

TRANS. MBR CODE LINE	EXPLANATION	REQUIREMENT FOR BLOCKS 26c AND 27c
RF (11, 13, 30, 38, 39)	Nuclear material imported into the United States (receipt foreign).	Make no entry
RD (11, 13, 30, 38, 39)	Domestic receipt of nuclear material from another domestic reporting identification symbol (RIS) (receipt domestic).	Make no entry
RN (11, 13, 30, 38, 39)	Domestic receipt of nuclear material from activity not subject to 10 CFR Part 75.	Make no entry
NP (21)	Production of fissionable material in a reactor (Pu, U ²³³).	Entry required by licensee
DU (76)	Reapplication of safeguards in nuclear material previously exempted therefrom pursuant to Article 38 of the US/IAEA Safeguards Agreement after being exempted based on use (licensees subject to 10 CFR Part 75 only).	Entry required only after notification by the NRC
DQ (76)	Reapplication of safeguards in nuclear material previously exempted therefrom pursuant to Article 38 of the Agreement after being exempted based on quantity (licensees subject to 10 CFR Part 75 only).	Entry required only after notification by the NRC
SF (42, 43, 51, 58, 59)	Export of nuclear material out of the United States.	Make no entry
SD (42, 43, 51, 58, 59)	Domestic transfer of nuclear material from another domestic RIS.	Make no entry
SN (42, 43, 51, 58, 59)	Domestic transfer of nuclear material from a facility subject to 10 CFR Part 75 to a waste management facility.	Entry required
SN (42, 43, 51, 58, 59)	Domestic transfer of nuclear material from a facility subject to 10 CFR Part 75 to a facility other than a waste management facility.	Make no entry
LN* (73)	Consumption of nuclear material because of its transformation into other elements or isotope(s) as a result of nuclear reactions (burnup).	Entry required by licensee

*Note: When calculating weight percent isotope in the case of burnup or decay, report the same weight percent isotope for decay and burnup as the weight percent of the beginning inventory for the period.

TRANS. MBR CODE LINE	EXPLANATION	REQUIREMENT FOR BLOCKS 26c AND 27c
TN* (72)	Consumption of nuclear material because of transformation into other elements or isotope(s) as a result of nuclear reactions (decay).	Entry required by licensee
*Note: When calculating weight percent isotope in the case of burnup or decay, report the same weight percent isotope for decay and burnup as the weight percent isotope of the original inventory for the period.		
LD (74)	Normal operational loss/measured discard; (i.e., loss of a measured or estimated (on the basis of measurement) quantity of nuclear material from processing which has been disposed of in such a way that it is not suitable for further nuclear use).	Entry required by licensee
TW (74)	Transfer to the retained waste category of measured nuclear material which is deemed to be irrecoverable, to be stored at the material balance area (MBA) and to be deleted from the inventory of the MBA.	Entry required by licensee
FW (51)	Retransfer of material that has been stored at the MBA as retained waste to the nuclear material inventory. This applies whenever material in the retained waste category is removed from storage either for processing at the MBA or for retransfer from the MBA.	Entry required by licensee
EU (76)	Exemption of nuclear material from safeguards pursuant to Article 36 of the Agreement (licensees subject to 10 CFR Part 75 only).	Entry required only after notification by the NRC
EQ (76)	Exemption of nuclear material from safeguards pursuant to Article 37 of the Agreement (licensees subject to 10 CFR Part 75 only).	Entry required only after notification by the NRC
TU (76)	Termination of safeguards on nuclear material pursuant to Articles 13 and 35 of the Agreement (licensees subject to 10 CFR Part 75 only).	Entry required only after notification by the NRC
LA (75)	Irretrievable and inadvertent loss of a known quantity of nuclear material as the result of an operational accident.	Entry required by licensee

TRANS. MBR CODE LINE	EXPLANATION	REQUIREMENT FOR BLOCKS 26c AND 27c
	inventory. Reactors must not use this code.	
PB (N/A)	Beginning Physical Inventory—This should be equal to the ending physical inventory of the previous MBR relating to the same material.	Entry required by licensee
BA (83)	The algebraic sum of the beginning physical inventory and of the inventory changes over the period, adjusted to take account of the shipper-receiver differences.	Entry required by licensee
PE (N/A)	The sum of all measured and derived batch quantities of nuclear material on hand on the date of the physical inventory taking. These entries should be consolidated.	Entry required by licensee
RAXX (N/A)	<p>Applicable to licensees subject to 10 CFR Part 75 only. The quantity that must be added to the rounded sum to make it equal to the sum of the rounded terms. A rounding adjustment (RA) is made to an entry in the MBR of which the International Atomic Energy Agency (IAEA) has been informed differently through inventory change reports (ICRs) and physical inventory lists, in order to bring the MBR entry into agreement with the corresponding figures established on the basis of ICRs and physical inventory lists. In the case of the book inventory and the inventory difference (ID) or material unaccounted for (MF), the following formulas should be used respectively:</p> $RABA = PB + ICR_{\text{MBR}} - DI - BA, \text{ and}$ $RAMF = BA - PE - MF$ <p>where ICR_{MBR} is the sum of the consolidated inventory changes as reported in the MBR, taken with the appropriate sign if they represent decreases. All other notations are as defined for this data element.</p> <p>No rounding adjustment is needed for the beginning physical inventory.</p> <p>The rounding adjustment should be coded</p>	Entry by licensee required only if applicable

TRANS. MBR CODE LINE	EXPLANATION	REQUIREMENT FOR BLOCKS 26c AND 27c
	RAXX where XX stands for the code of the entry to which the rounding adjustment pertains (e.g., RALN means a rounding adjustment to the consolidated entry on the nuclear loss).	
34 (30)	Receipts—Miscellaneous. Enter quantities of material received in two-party transactions where only receiver's data or receipts of quantities of material falling below the reporting level are reported and now cumulatively total 1 gram or more for SNM or 1 kilogram or more for source material. Examples include receipts of material (not reported elsewhere) from facilities that have not been assigned an RIS and receipts from licensees who are not required to document or report transactions.	Licensee entry required
37	Procurement by Others. Enter quantities of material purchased by the facility for its own account from in situ material that it had been holding or material that the facility is processing for another licensee.	
54 (51)	Shipments—Miscellaneous. Enter quantities of material shipped in two-party transactions where only shipper's data are reported or shipments of quantities of material falling below the reporting level are reported and now cumulatively total 1 gram or more of SNM or 1 kilogram or more for source material. Examples are shipments of material (not reported elsewhere) from facilities that have not been assigned a reporting identification symbol and shipments from licensees that are not required to document or report transactions.	Licensee entry required
65	Rounding Adjustment	Entry required by licensee. Note: A negative value adds to the site inventory.

APPENDIX C

EXAMPLE DOCUMENTATION OF SHIPPER AND RECEIVER DATA

(BLOCKS 26 AND 27)

EXAMPLE DOCUMENTATION OF SHIPPER AND RECEIVER DATA (BLOCKS 26 AND 27)

EXAMPLE 1a—INITIAL REPORT

On March 31, 2008, shipper YYY transferred to receiver XXX four fabricated fuel elements containing the following:

<u>Line</u>		<u>Element</u>	<u>Isotope</u>
1	FAB FUEL ELE-1	377699 g	18111 g
2	FAB FUEL ELE-2	42114 g	1344 g
3	FAB FUEL ELE-3	377855 g	18122 g
4	FAB FUEL ELE-4	41992 g	1340 g

EXAMPLE 1b—RECEIVERS REPORT

On April 1, 2008, receiver XXX acknowledged receipt of the shipment and accepted the shipper's weights without further measurement.

EXAMPLE 1c —CORRECTION 1

On April 16, 2008, the shipper corrected the element weights for lines 1 and 4 to reflect the adjusted element and isotope weights as well as obligated enriched uranium.

EXAMPLE 1d —RECEIVERS CORRECTION 1

On April 23, 2008, the receiver acknowledged receipt of the correction and reported the corrections to NMMSS.

EXAMPLE 2m (ACTION CODE M)

On March 31, 2008, facility XXX reported on-site inventory adjustments of fission, decay and production that changed their inventory of enriched uranium and plutonium.

Example 2m-a Correction (ACTION CODE M)

On March 31, 2007, facility XXX reported a correction to their on-site production of plutonium. This change also changes the quantity of obligated plutonium at the facility.

EXAMPLE 3a—EXPORT OF A FUEL ASSEMBLY

On March 31, 2008, facility YYY reported the export of one fuel assembly to a foreign facility.

EXAMPLE 4a—INITIAL REPORT OF AN IMPORT

On March 31, 2008, facility XXX submitted a report documenting the shipment of three fuel assemblies from a foreign facility YYY.

EXAMPLE 4b—RECEIVERS REPORT OF AN IMPORT

On March 31, 2008, facility XXX submitted a report documenting the receipt of three fuel assemblies from a foreign facility YYY.

EXAMPLE 5a –INITIAL REPORT OF SHIPMENT TO BURIAL SITE

On March 31, 2008, facility XXX submitted a report documenting the shipment of uranium waste to a burial site.

EXAMPLE 5b –RECEIVERS REPORT OF A SHIPMENT TO BURIAL SITE

On April 5, 2008, facility VVV submitted a report documenting the receipt of uranium waste to the burial site.

List of Examples:

Example 1a: DOE/NRC Form 741—Initial report

Example 1b: DOE/NRC Form 741—Receivers report

Example 1c: DOE/NRC Form 741—Correction 1 (shipper adjusting lines 1 and 4 of the initial transaction)

Example 1d: DOE/NRC Form 741—Correction 1 (receiver adjusting lines 1 and 4 of the initial transaction)

Example 2m: DOE/NRC Form 741— Initial report (action code M)

Example 2m-a:DOE/NRC Form 741—Correction 1 (action code M)

Example 3a: DOE/NRC Form 741—Initial report (export from the USA)

Example 4a: DOE/NRC Form 741—Initial report (shipment to the USA)

Example 4b: DOE/NRC Form 741—Receivers report (shipment to the USA)

Example 5a: DOE/NRC Form 741—Initial report (shipment to a burial site)

Example 5b: DOE/NRC Form 741—Receivers report (shipment to a burial site)

DOE/NRC FORM 741
 (4-2005). Previous editions are obsolete.
MANDATORY DATA COLLECTION
 PUBLIC LISTS 83-703, 93-433, 95-91
 Public Lists 83-703, 93-433, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
 Estimated burden per response to comply with this mandatory collection request: 1 hour and 15 minutes. This information is required for IAEA accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate or the collection of information, including suggestions for reducing burden, to Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

EXPIRES: 04/30/2008

1. SHIPPER'S RES: XXX
 2. RECEIVERS RES: XXX
 3. TRANSACTION NO: 000001
 4. CORRECTION NO: []
 5. PROCESSING CODE: []
 6. ACTION CODE: []
 7. DOCUMENTATION (ONLY DOCUMENT IS CLASSIFIED SECRET): []

8. NAME AND ADDRESS OF SHIPPER: COMPANY NAME, COMPANY ADDRESS, CITY, STATE ZIP CODE
 9. NAME AND ADDRESS OF RECEIVER: COMPANY NAME, COMPANY ADDRESS, CITY, STATE ZIP CODE
 10. NO OF DATA LINES: 4
 11. NATURE OF TRANSACTION: 19. MATERIAL TYPE: 20. OBLIGATED ELEMENT WEIGHT: 20335.00
 12. SHIPPER'S ACCOUNT OF: b. HIS
 13. RECEIVER'S ACCOUNT OF: b. HIS
 14. TRANSFER AUTHORITY - CONTRACT, IMI DRAFT, OR ORDER NUMBER: []
 15. EXPORT OR IMPORT TRANSFERS: LICENSE NO. []
 16. MATERIAL TYPE AND DESCRIPTION: []
 17. LINE NUMBER: 1
 18. COUNTRY OF ORIGIN: 31
 19. MATERIAL TYPE: 20
 20. OBLIGATED ELEMENT WEIGHT: 50397.00
 21. OBLIGATED ISOTOPE For Enriched Uranium Only: []
 22. ACTION DATE: MONTH: 03, DAY: 31, YEAR: 2008
 23a. MISCELLANEOUS: []
 23b. CONCISE NOTE ATTACHED: []
 23c. UK REPAIRABLE: YES [] NO []

24. TOTAL GROSS WEIGHT: 20358
 25. TOTAL VOLUME (When Transfers Only): []

BACK REFERENCE NUMBER	LINE NO.	TYPE OF INV. CHANGE	IDENTIFICATION (ITEM/BATCH NAME)	NO. OF ITEMS	PROJECT NUMBER	MATERIAL TYPE	COMP. FACILITY CODE	KEY POINT	MEAS. UNIT:			GROSS WEIGHT	NET WEIGHT	ELEMENT WEIGHT	ELEMENT LIMIT OF ERROR	ISOTOPE WEIGHT	ISOTOPE LIMIT OF ERROR
									1. BASIS	2. OMP	3. METHOD						
	1		FAB FUEL ELE -1	1		20	309	J	2	M		377609.00	4.7962	18111.00			
	2		FAB FUEL ELE -2	1		20	309	J	2	M		42114.00	107	3.1913	1344.00		30
	3		FAB FUEL ELE -3	1		20	309	J	2	M		377855.00	4.7960	18122.00			
	4		FAB FUEL ELE -4	1		20	309	J	2	M		41992.00	107	3.1911	1340.00		30

26. SHIPPER'S DATA: SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED: []
 26a. SHIPPER'S DATA: []
 26b. SHIPPER'S DATA: []
 26c. SHIPPER'S DATA: []
 26d. SHIPPER'S DATA: []
 26e. SHIPPER'S DATA: []
 26f. SHIPPER'S DATA: []
 26g. SHIPPER'S DATA: []
 26h. SHIPPER'S DATA: []
 26i. SHIPPER'S DATA: []
 26j. SHIPPER'S DATA: []
 26k. SHIPPER'S DATA: []
 26l. SHIPPER'S DATA: []
 26m. SHIPPER'S DATA: []
 26n. SHIPPER'S DATA: []
 26o. SHIPPER'S DATA: []
 26p. SHIPPER'S DATA: []
 26q. SHIPPER'S DATA: []
 26r. SHIPPER'S DATA: []
 26s. SHIPPER'S DATA: []
 26t. SHIPPER'S DATA: []
 26u. SHIPPER'S DATA: []
 26v. SHIPPER'S DATA: []
 26w. SHIPPER'S DATA: []
 26x. SHIPPER'S DATA: []
 26y. SHIPPER'S DATA: []
 26z. SHIPPER'S DATA: []

27. RECEIVER'S DATA: SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED: []
 27a. RECEIVER'S DATA: []
 27b. RECEIVER'S DATA: []
 27c. RECEIVER'S DATA: []
 27d. RECEIVER'S DATA: []
 27e. RECEIVER'S DATA: []
 27f. RECEIVER'S DATA: []
 27g. RECEIVER'S DATA: []
 27h. RECEIVER'S DATA: []
 27i. RECEIVER'S DATA: []
 27j. RECEIVER'S DATA: []
 27k. RECEIVER'S DATA: []
 27l. RECEIVER'S DATA: []
 27m. RECEIVER'S DATA: []
 27n. RECEIVER'S DATA: []
 27o. RECEIVER'S DATA: []
 27p. RECEIVER'S DATA: []
 27q. RECEIVER'S DATA: []
 27r. RECEIVER'S DATA: []
 27s. RECEIVER'S DATA: []
 27t. RECEIVER'S DATA: []
 27u. RECEIVER'S DATA: []
 27v. RECEIVER'S DATA: []
 27w. RECEIVER'S DATA: []
 27x. RECEIVER'S DATA: []
 27y. RECEIVER'S DATA: []
 27z. RECEIVER'S DATA: []

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.

DOE/NRC FORM 741 (4-2005) PRINTED ON RECYCLED PAPER

DOENRC FORM 741
 (4-2005). Previous editions are obsolete.
 MANDATORY DATA COLLECTION
 AUTHORIZED BY 10 CFR 30.40, 50, 70, 72, 74, 75, 150,
 Public Laws 85-703, 89-458, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
 Expires: 04/30/2008
 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 Records and FOIA Privacy Services Branch (1-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20540-0001, or to the Office of Management and Enterprise Services, U.S. Nuclear Regulatory Commission, Washington, DC 20540-0003. Office of Management and Enterprise Services, U.S. Nuclear Regulatory Commission, Washington, DC 20540-0003. 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. SHIPPER'S IRS: XXX
 2. LICENSE NO: 000001
 3. TRANSACTION NO: 1
 4. CORRECTION NO: 1
 5. PROCESSING CODE: A
 6. ACTION CODE: C
 7. DOCUMENTATION (Only if document is classified SECRET)

8. NAME AND ADDRESS OF SHIPPER: COMPANY NAME, COMPANY ADDRESS, CITY, STATE ZIP CODE
 9. NAME AND ADDRESS OF RECEIVER: COMPANY NAME, COMPANY ADDRESS, CITY, STATE ZIP CODE
 10. NO. OF DATALINES: 4
 11. NATURE OF TRANSACTION: 13.4. SHIPPED TO ACCOUNT OF: b. IRS
 12. SHIPPED TO ACCOUNT OF: b. IRS

14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER: CONTACT
 15. EXPORT OR IMPORT TRANSFER LICENSE NO.: CONTACT
 16. MATERIAL TYPE AND DESCRIPTION: CONTACT
 17. LINE NUMBER: 1, 2
 18. COUNTRY OF ORIGIN: 31, 31
 19. MATERIAL TYPE: 20, 20
 20. ELEMENT WEIGHT: -50397.00, 50300.00
 21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only: -2335.00, 2330.00
 22. ACTION DATE: MONTH (MM), YEAR (YYYY): 04, 16 2008

23a. MISCELLANEOUS: YES NO
 b. CORE NOTE ATTACHED
 c. UN-REPORTABLE

24. TOTAL GROSS WEIGHT: 25. TOTAL VOLUME (Ingram Fractions Only): 26. SHIPPER'S DATA: 27. RECEIVER'S DATA: 28. SHIPPER'S DATA: 29. RECEIVER'S DATA

BACK REFERENCE NUMBER	LINE NO	TYPE OF CHANGE	IDENTIFICATION (ITEM/MATCH NAME)	NO. OF ITEMS	PROJECT NUMBER	NAME	FACILITY CODE	COMP. CODE	MATERIAL CODE	BASIS	DMP	METHOD	GROSS WEIGHT	NET WEIGHT	ELEMENT WEIGHT	ELEMENT LIMIT OF ERROR	ISOTOPE WEIGHT	ISOTOPE LIMIT OF ERROR
002	1		FAB FUEL ELE -1	-1		20	309	J	20				4.7962	-18111.00	-377609.00		4.7962	-18111.00
101	2		FAB FUEL ELE -1	1		20	309	J	20				377509.00		377509.00		4.7962	18000.00
004	3		FAB FUEL ELE -4	-1		20	309	J	20				-41992.00	-1340.00	-41992.00		3.1911	-1340.00
103	4		FAB FUEL ELE -4	1		20	309	J	20				42002.00	107 3.1911	42002.00		3.1911	1450.00

26. SHIPPER'S DATA: SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED
 27. RECEIVER'S DATA: SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

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

DOENRC FORM 741 (4-2005) PRINTED ON RECYCLED PAPER

DOE/NRC FORM 741
 Mandatory Data Collection
 AUTHORIZED BY 10 CFR 30.40, 50, 70, 72, 74, 75, 150,
 Public Laws 85-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY AND NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
 Expires: 04/30/2008
 Extended to 04/30/2008
 This information is required by IEA accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the Records and FOIA Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to introcollect@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.

1. SHIPPERS R/S: RRRR
 2. RECEIVERS R/S: XXX
 3. TRANSACTION NO.: 000001
 4. CORRECTION NO.:
 5. PROCESSING CODE:
 6. SHIPPER: A
 7. RECEIVER: A
 8. LICENSE NO.:
 9. LICENSE NO.:
 10. NAME AND ADDRESS OF RECEIVER:
 COMPANY NAME
 COMPANY ADDRESS
 CITY, STATE ZIP CODE
 11. NAME AND ADDRESS OF SHIPPER:
 COMPANY NAME
 COMPANY ADDRESS
 CITY, STATE ZIP CODE
 12. ATTENTION: CONTACT
 13. TELEPHONE:
 14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER:
 15. MATERIAL TYPE AND DESCRIPTION:
 16. CONCISE NOTE ATTACHED:
 17. LIK REPORTABLE: YES NO

18. LINE NUMBER: 1
 19. COUNTRY OF ORIGIN: 33
 20. MATERIAL TYPE: 20
 21. OBLIGATED ISOPIE ELEMENT WEIGHT: 210.00
 22. ACTION DATE: 03/31/2008
 23. SHIPPERS CORRECTION:
 24. RECEIVERS CORRECTION:
 25. RECEIVERS CORRECTION:
 26. RECEIVERS CORRECTION:

27. RECEIVERS DATA

BACK REFERENCE NUMBER	LINE NO.	TYPE OF INV. CHANGE	DESCRIPTION (ITEMATCH NAME)	NO. OF ITEMS	MEAS. UNIT	MEAS. CODE	NET WEIGHT	GROSS WEIGHT	ELABORATE LIMIT OF ERROR	ISOPIE WEIGHT	ISOPIE LIMIT OF ERROR	
	1	FOREIGN-1		1	EG	309 J	177999.00	32800	3.2800	5838.00		
	2	FOREIGN-2		1	EG	309 J	177834.00	32900	3.2900	5851.00		
	3	FOREIGN-3		1	EG	309 J	177910.00	32880	3.2880	5850.00		
24. TOTAL GROSS WEIGHT							3061					

26. SHIPPERS DATA

27. RECEIVERS DATA

SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

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

DOE/NRC FORM 741 (4-2005)

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Example 4-b

DOENRC FORM 741
 (4-2005) Previous editions are obsolete
 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**

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
 Estimated burden per response to comply with this mandatory collection request: 1 hour and 15 minutes. This information is required in order to track the response to the FOIA Privacy Board (ITCS-FBI) and to the Desk Officer, Office of Information and Regulatory Affairs, NE09-10202, (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

EXPIRES: 04/30/2008

1. SHIPPERS R/S RRRR	2. RECEIVER'S R/S XXX	3. TRANSACTION NO. 000001	4. CORRECTION NO.	5. PROCESSING CODE	6. ACTION CODE	7. DOCUMENTATION (Only if document is classified SECRET)
8. NAME AND ADDRESS OF SHIPPER FOREIGN COMPANY NAME COMPANY ADDRESS CITY, STATE ZIP CODE COUNTRY	9. LICENSE NO.	10. NAME AND ADDRESS OF RECEIVER COMPANY NAME COMPANY ADDRESS CITY, STATE ZIP CODE COUNTRY	11. NO OF DATA LINES 3	12. SHIPPED FOR ACCOUNT OF R/S	13. NATURE OF TRANSACTION R/S	14. TRANSFER AUTHORITY - CONTRACT, NM DRAFT, OR ORDER NUMBER
15. MATERIAL TYPE AND DESCRIPTION 23a. MISCELLANEOUS	16. MATERIAL TYPE AND DESCRIPTION	17. SHIPPER'S MATERIAL TYPE 33	18. RECEIVER'S MATERIAL TYPE 20	19. ELEMENT WEIGHT 210.00	20. OBLIGATED WEIGHT 68.00	21. ACTION DATE 04 05 2008
22. SHIPPERS DATA	23. RECEIVER'S DATA	24. TOTAL GROSS WEIGHT	25. TOTAL VOLUME (Other Than Fuel Only)	26. SHIPPERS DATA	27. RECEIVER'S DATA	28. DISTRIBUTION OF COPIES

26. SHIPPERS DATA

LINE NO	TYPE OF CHANGE	IDENTIFICATION (ITEM/BUCKLE/NAME)	NO. OF ITEMS	PROJECT NUMBER	MATERIAL TYPE	COMP. CODE	OWNER CODE	NET WEIGHT	GROSS WEIGHT	MEAS. UNIT	KEY POINT	EL. WEIGHT	ELEMENT ERROR	WGT. % ERROR	ISOPOE WEIGHT	ISOPOE ERROR
1		FOREIGN-1	1		EG	309	J	177999.00				3.2800		5838.00		
2		FOREIGN-2	1		EG	309	J	177834.00				3.2900		5851.00		
3		FOREIGN-3	1		EG	309	J	177910.00				3.2880		5850.00		

27. RECEIVER'S DATA

28. DISTRIBUTION OF COPIES

NO.	COPY	1	2	3	4	5	6	7	8	9	10
1	RRRR										
2	XXX										

29. SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

30. SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

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

Example 5-b

DOE/NRC FORM 741
(4-2005) Previous editions are obsolete
AUTHORIZED BY 10 CFR 30.40, 50, 70, 72, 74, 75, 150,
Public Laws 85-703, 93-438, 95-81

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

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
Expires: 04/30/2008
Estimated burden per response to comply with this mandatory collection request: 1 hour and 15 minutes. This collection of information is required by the Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollections@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.

1. SHIPPER'S RIS XXX	2. RECEIVER'S RIS VVV	3. TRANSACTION NO. 000001	4. CORRECTION NO. A	5. PROCESSING CODE A	6. ACTION CODE B	7. DOCUMENTATION (Only if document is classified SECRET)
8.1. WASTE AND ADDRESS OF SHIPPER	8.2. LICENSE NO.	9.1. NAME AND ADDRESS OF RECEIVER	9.2. LICENSE NO.	10. NO. OF DATA LINES 1	11. NATURE OF TRANSACTION 13a. SHIPPED TO ACCOUNT OF b. RIS	12. DISTRIBUTION OF COPIES
COMPANY NAME COMPANY ADDRESS CITY, STATE ZIP CODE		WASTE COMPANY NAME COMPANY ADDRESS CITY, STATE ZIP CODE		15. EXPORT OR IMPORT TRANSFERS - LICENSE NO. 16. MATERIAL TYPE AND DESCRIPTION 23a. MISCELLANEOUS b. CONCISE NOTE ATTACHED <input type="checkbox"/> YES <input type="checkbox"/> NO c. LK REPORTABLE? <input type="checkbox"/> YES <input type="checkbox"/> NO		
6. ATTENTION CONTACT 9. TELEPHONE		6. ATTENTION CONTACT 9. TELEPHONE		17. LINE NUMBER 18. COUNTRY OF ORIGIN 19. MATERIAL TYPE 20. OBLIGATED ELEMENT WEIGHT 21. OBLIGATED ISOPIE For Enriched Uranium Only 22. ACTION DATE a. SHIPMENT b. SHIPPER'S CORRECTION c. RECEIPT d. RECEIVER'S MEASUREMENT e. RECEIVER'S CORRECTION		
24. TOTAL GROSS WEIGHT 25. TOTAL VOLUME (Waste Transfer Only)		26. SHIPPER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED 27. RECEIVER'S DATA SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED		24. TOTAL GROSS WEIGHT 25. TOTAL VOLUME (Waste Transfer Only)		

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.
DOE/NRC FORM 741 (4-2005) PRINTED ON RECYCLED PAPER

APPENDIX D

GLOSSARY

GLOSSARY

Accountability—The determination of, and current record maintenance of, special nuclear material and source material quantities associated with transfers, measured discards, inventories, and inventory differences that might result from theft, diversion, or other unidentified loss mechanisms.

Agreement State—A State that has signed an agreement with the U.S. Nuclear Regulatory Commission under which the State regulates the use of byproduct, source, and small quantities of special nuclear material in that State.

Book inventory—The algebraic sum of the most recent physical inventory of the material balance area and of all inventory changes that have occurred since the physical inventory was taken.

Concise note—Additional nuclear material transaction, material balance, or inventory data supplied, in free text format, by facilities engaged in the import and/or export of nuclear materials, by facilities selected under the provisions of the agreement between the United States and the International Atomic Energy Agency (IAEA) for the application of safeguards in the U.S./IAEA Safeguards Agreement, or by a facility that would like to transmit any additional explanatory nuclear material information.

EURATOM—As of January 2008, an organization consisting of the member countries Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

Foreign obligated nuclear material—Source material or special nuclear material that is subject to the terms and conditions of an agreement that the U.S. Government has entered into with another government or group of governments.

Highly enriched uranium (HEU)—Uranium enriched to 20 percent or greater in the isotope uranium-235.

Holding account—Typically identified by four-character reporting identification symbols (RISs) ending in the letter H assigned by the U.S. Nuclear Regulatory Commission. Some enrichment facilities have holding accounts identified by three-character RISs beginning with the letter V. Regardless of the RIS, these accounts usually acquired inventory from the shipment of licensed material from the primary RIS in use at the licensee. Typically, a small number of licensees have used these accounts for nuclear materials not expected to be immediately processed, reprocessed, or disposed. However, the licensed nuclear materials in holding accounts are still in the licensee's possession and must be included in inventories reported to the Nuclear Materials Management and Safeguards System.

Inventory difference (ID)—The arithmetic difference between a book inventory and the corresponding physical inventory that closes the material balance period. It is calculated by subtracting the ending inventory (EI) and removals from inventory (R) from the beginning inventory (BI) and additions to inventory (A) during the period between physical inventories. Mathematically, ID can be expressed in the following way:

$$ID = (BI + A - R) - EI$$

where (BI + A - R) is the book inventory.

Inventory reconciliation—The adjustment of the book record quantity of both elements and fissile isotopes to reflect the results of a physical inventory. In a broad sense, inventory reconciliation involves the activities of calculating (1) the inventory difference (ID) for the material balance period in question, (2) the uncertainty value associated with the ID, (3) the active inventory for the period, and (4) any bias adjustment and/or prior period adjustment associated with the ID value.

Low-enriched uranium (LEU)—Uranium enriched below 20 percent in the isotope uranium-235.

Material balance period—The time span to which a material or physical inventory pertains.

Nuclear Materials Management and Safeguards System (NMMSS)—The national database and information system for select nuclear materials controlled by the U.S. Government. This system was created to support national safeguards and management objectives in domestic and international programs. The system stores data on nuclear material transactions and inventories and produces a wide range of printed reports for use by the U.S. Department of Energy and the U.S. Nuclear Regulatory Commission and their licensees. The system is used to satisfy the nuclear materials information requirements of agreements between the United States and foreign entities. In addition, the system provides the reporting interface between facilities selected under the provisions of the U.S./International Atomic Energy Agency Safeguards Agreement.

Physical inventory—A physical determination of the quantity of nuclear material on hand at a given time. The methods of physical inventory and the associated measurements vary, depending on the material to be inventoried and the process involved. A book inventory between physical inventory takings can be determined based on the physical inventory quantity from the prior period together with all subsequent inventory changes associated with the determination of that book inventory. The primary purpose of a physical inventory is to confirm the absence of (or to detect) a loss, theft, or diversion of special nuclear material.

Report period—Period inclusive of defined dates (e.g., October 1, 2005, through September 30, 2006). Reports for a reporting period, such as inventory, material balance, and related transactions reports, must assure that no dates are undocumented between the previous and current submittals.

Reporting identification symbol (RIS)—A unique combination of three or four letters that is assigned to each reporting organization by the U.S. Department of Energy or the U.S. Nuclear Regulatory Commission for the purpose of identification in the Nuclear Materials Management and Safeguards System database.

Shipper-receiver difference (SRD)—The difference between what a shipper claims a shipment of special nuclear material contained and what the receiver claims it received, in cases where both the shipper's and receiver's values are based on measurement.

Source material—Uranium or thorium, or any combination thereof, in any physical or chemical form; or ores that contain by weight 0.05 percent or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

Special nuclear material (SNM)—Plutonium, uranium-233, and uranium enriched in the isotope 233 or 235.

U.S. Government owned—Nuclear material that, while used by a licensee as part of its activities, is actually an asset owned by a Federal Government agency such as the U.S. Department of Energy. These materials may be bulk materials, discrete radiation sources, or finished products. Such materials may represent a lease or loan arrangement with a Government agency. Government-owned materials are typically represented by the owner code G on shipping information (i.e., DOE/NRC Form 741) and inventory documentation (i.e., DOE/NRC Forms 742 and 742C). One way a licensee can make a determination that nuclear material in its possession is Government owned is to review the licensee's DOE/NRC Form 741 documentation listing the original receipt of the material. If such material is Government owned, the owner code G will appear on the licensee's portion of the form.

APPENDIX E

**DOE/NRC FORM 740M, "CONCISE NOTE," (BLANK) AND
DOE/NRC FORM 741, "NUCLEAR MATERIAL TRANSACTION REPORT"
(BLANK)**

APPENDIX F

SUPPLEMENTAL INSTRUCTIONS FOR COMPLETING

BLOCKS 17, 18, 19, 20, AND 21 ON DOE/NRC FORM 741

SUPPLEMENTAL INSTRUCTIONS FOR COMPLETING BLOCKS 17, 18, 19, 20, AND 21 ON DOE/NRC FORM 741

1. Introduction

Special procedures must be used to implement some of the reporting requirements of the U.S. Bilateral Agreements for Peaceful Nuclear Cooperation. These Agreements for Cooperation are one means to satisfy Section 123 of the Atomic Energy Act of 1954 and allow the U.S. nuclear industry to trade with foreign countries/entities. The agreements require that the United States track and report foreign obligated nuclear materials and nuclear material produced from obligated material from these countries/entities. A foreign obligation is a commitment by one government to another to treat nuclear materials, nonnuclear materials, and equipment and components in a manner consistent with the agreement signed by the two governments.

In addition to these Agreements for Cooperation, the United States is also required (pursuant to the U.S./Russian agreement concerning the disposition of highly enriched uranium extracted from nuclear weapons) to track and report to Russia the imports, exports, and use of former Soviet Union downblended highly enriched uranium. Although not a U.S. Bilateral Agreement for Peaceful Nuclear Cooperation, this agreement contains similar reporting requirements and will be tracked as such. Facilities that are importers and/or exporters of nuclear material should also comply with the agreement.

The exchange of obligations can occur only between like materials (i.e., material type (MT) 10, 50, 70, 81, E-1, E-2, E-3, or E-4) within the following constraints:

- No exchange of material from one MT to another is allowed unless the U.S. Government provides written prior approval. For example, downblending of E-3 enriched uranium that results in a lower category (i.e., E-3 of obligated material to become E-1 material) requires written prior approval of the U.S. Government.
- The obligated material must be exchanged for similar material unless the U.S. Government provides written prior approval. For example, nonirradiated material may not be swapped for irradiated nuclear material unless the U.S. Government provides written prior approval.
- Obligation exchanges involving a licensee of the U.S. Nuclear Regulatory Commission (NRC) and an entity of the U.S. Department of Energy require the NRC's written prior approval.
- Obligation exchanges between two parties must be for the same material quantities. Additionally, the obligations exchanged must match (i.e., the obligation "shipped or removed" by one participant is "received or added" by the second party to the transaction).

2. Imports

For U.S. facilities importing nuclear material with foreign obligations, the relevant obligation information will be supplied by the appropriate Government agency. The notification will provide the information necessary to complete blocks 17–21, if applicable:

- For imports, the foreign obligation information can be (1) the country/entity from which the nuclear material was shipped and/or (2) the country/entity attaching “third-party obligations.” In most cases, for imports from a country that has made the entire shipment subject to the agreement, the total import quantity will be obligated. If only a portion of the shipment is subject to an agreement (third-party obligation), the documentation will clearly specify that amount.
- For the completion of blocks 17–21, the Government notification will supply (1) the country/entity of obligation, (2) the MT, and (3) the amount obligated. (See Table 1 below for country/entity codes. See Table 2 below for reportable obligated MTs and quantities.)

Table 1

<u>Obligation Code</u>	<u>Country/Entity</u>
31	Australia
32	Canada
33	EURATOM
34	Japan
35	People's Republic of China
37	Switzerland
38	Argentina
39	Brazil
40	Chile
81	Australia/Japan
82	Canada/Japan
83	EURATOM/Japan
84	Australia/EURATOM/Japan
85	Canada/EURATOM/Japan
86	China/Japan
87	Australia/Canada
88	Australia/EURATOM/Canada
91	Australia/EURATOM
92	Canada/EURATOM
WR	Former Soviet Union Weapons material

Note: For any other obligation codes, contact the Nuclear Materials Management and Safeguards System (NMMSS) for further instructions.

Table 2

Reportable MTs and Source and
Special Nuclear Material

<u>Type</u>	<u>Domestic Code</u>
Normal uranium	MT 81
Depleted uranium	MT 10
Thorium	MT 88
Plutonium	MT 50
Enriched uranium	MT 20
Uranium-233	MT 70

- Licensees should complete the obligation information as follows:

Block 17: LINE NUMBER—The shipper will enter a sequential number beginning with the number 1 for each obligated country or material. If there is more than one separate obligation or more than one obligated MT, enter the appropriate numbers in the subsequent lines.

Block 18: COUNTRY OF OBLIGATION—For each line, enter the code in Table 1 that represents the country/entity of obligation.

Block 19: MATERIAL TYPE—For each line, enter the domestic code in Table 2 that represents the material obligated.

Block 20: OBLIGATED ELEMENT WEIGHT—For each line, enter the weight obligated in the reportable quantity specified in Table 2. Positive or negative values should be entered to appropriately account for material addition or removal, respectively.

Block 21: OBLIGATED ISOTOPE WEIGHT (FOR ENRICHED URANIUM ONLY)—For each line of enriched uranium, enter the obligated isotope weight in grams. (Obligated uranium-235 is restricted to uranium enriched to 5 percent or less, unless higher enrichment is authorized or approved by the U.S. Government.) Positive or negative values should be entered to appropriately account for material addition or removal, respectively.

3. Domestic Transfers, Internal Transactions, and Exports

For U.S. facilities shipping or exporting material with foreign obligations, or for the reporting of onsite gains and losses, the obligations on the material must be stated as such in blocks 17–21:

- For domestic transfers, fill out blocks 17–21 as for imports (Section 2 above). However, the obligation information will not be supplied by a government notification. The U.S. shipper will assign the appropriate obligations on the material, if any, and complete the line number, country/entity of obligation, MT, and obligated weight, if applicable. The

U.S. receiver will complete the matching obligation information as assigned by the shipper.

- For internal transactions (e.g., burnup, decay, production, measured discards, accidental losses or gains, category changes, fission and transmutation, inventory differences), enter the line number, country/entity of obligation, MT, and obligated weights, if applicable, for the material.
- The domestic facility must obtain the information necessary to complete DOE/NRC Form 741 for the foreign facility for all imports of special nuclear material and source material. In the case of exports, the shipper initiates a DOE/NRC Form 741 report, and the NMMSS will generate a DOE/NRC Form 741 report using shipper information. However, if a significant shipper-receiver difference is identified between the U.S. shipper and foreign receiver (as defined in Title 10, Section 74.31, "Nuclear Material Control and Accounting for Special Nuclear Material of Low Strategic Significance," of the *Code of Federal Regulations* (10 CFR 74.31), 10 CFR 74.43, "Internal Controls, Inventory, and Records," or 10 CFR 74.59, "Nuclear Material Control and Accounting for Special Nuclear Material of Low Strategic Significance," for special nuclear material, or if there is an indication of loss, theft, or diversion of quantities of source material delineated in 10 CFR 40.64 (c)(1)), the shipper is required to document the foreign party's values in a DOE/NRC Form 741 report to the NMMSS. Submittal for a foreign facility does not indicate a responsibility for the other facility or its shipment/receipt of materials.