D-24
Personal Computer Data Input for Nuclear Regulatory Commission Licensees

Effective Date
March 24, 2020

A booklet of guidance for data submissions to
NMMSS using electronic formats

PAPERWORK REDUCTION ACT STATEMENT

NMMSS Report D-24 provides guidance for submitting the mandatory information collections in NRC Forms 740M, 741, 742, and 742C that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB), approval numbers 3150-0057, 3150-0003, 3150-0004, and 3150-0058. Send comments regarding this information collection to the Information Services Branch (T6-A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555□0001, or by e□mail to Infocollects.Resource@nrc.gov, and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0057, 3150-0003, 3150-0004, and 3150-0058), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW Washington, DC 20503; e□mail: oira_submission@omb.eop.gov.

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The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

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1. INTRODUCTION

1.1. Reporting Guidelines

Refer to the current version of the **NRC Instructions for Completing Nuclear Materials Transaction Reports; NUREG/BR-0006** and **Instructions for Completing Material Balance Report and Physical Inventory Listing NUREG/BR-0007** for specific Nuclear Regulatory Commission (NRC) requirements in reporting data to the NMMSS. These documents specify that data submissions must be made in acceptable electronic forms to the Nuclear Materials Management Safeguards System (NMMSS) and provide the information necessary for completing the source documents (forms) referenced in this directory.

NRC licensees required to report government owned material to NMMSS should refer to the **D-23, Personal Computer Data Input for Department of Energy Contractors** for guidance in the electronic reporting of this material.

1.2. Purpose

This directory provides formatting requirements for the reporting of nuclear material information in electronic file formats to the NMMSS in accordance with the NRC guidelines. A reporting licensee has the option to prepare reported data in an electronic file using the formats presented here using a variety of text editors, XML editors or programmatically in Material Control and Accountability Systems. This data is then saved as a text file and sent to NMMSS via diskette, CD, Zip disk, SIMEX, Direct Link, or electronic mail.

1.3. Acceptable Electronic Formats

The preferred format accepted by NMMSS for electronic data transfer is eXtensible Markup Language (XML). New technologies are constantly being developed to improve data management. As these methods are tested and analyzed by NMMSS staff, revisions will be made to data input procedures and guidelines. Visit the NMMSS website, www.hss.energy.gov/nmmss, for the latest information and guidelines.

Another alternative for submitting electronic data to NMMSS is the use of the Safeguards Management Software (SAMS) for transcribing reported data into a machine readable format. This software is currently available at no charge from NMMSS.

1.3.1. Extensible Markup Language (XML) File Format

The XML format may also be referred to as tagged data as it is based upon the use of tags (words bracketed by '<' and '>') and attributes (of the form name="value"). The NMMSS XML data submission format uses specific tags to establish the

limits of units of data. An advantage of using XML is that data is represented by tags which identify the values being reported; however, these tags must be entered exactly as specified or they will not be recognizable to the import programs.

The rules for XML files are strict. The following conditions will cause a failure in an XML data import:

- **A tag entered incorrectly (For example; using the wrong tag name, inserting spaces, or using improper capitalization).**
- **A missing tag.**
- **A missing end tag indicator (designated by the /) for every opening tag.**
- **A data attribute without surrounding quotes.**

Field sizes of reported data may be adjusted to fit the value, instead of requiring additional spaces to meet the allocated size as seen in the 80 Column file formats. The reported data is entered into double quotes to the right of the attribute tag. Then, the file is saved as a text file using a file extension of **.xml** and submitted to NMMSS.

The use of the following characters inside the double quotes surrounding the value may be forced to be accepted by substituting the following code shown in the table below in place of the character. For example; to report a text comment such as Insert batch id 'Batch6a' in block 24D. the tag value would need to be expressed as "Insert batch id **'**Batch6a**'** in block 24D."

Character	Code
'	'
"	"
&	&
<	<
>	>

Each type of reported data; Inventory, Transaction, and Material Balance, has specific tags as shown in more detail under each section of this document. Data codes, which are necessary to identify the data in the 80 Column file format, are inferred by the XML tag structure and therefore are not required. Refer to the individual data sections for additional details. Additional resources are available about XML online from the following websites:

- www.w3schools.com
- www.ucc.ie/xml/

1.4. Understanding the Format Presentation

Within each format table presented in this directory the form identifier is listed along with the block identification number or number character combination found on the

form. XML tables will display the tag identifier (XML attribute) to be used for this block.

The ***Type*** column defines the form and length of the accepted data. For example, 'Char(1)' indicates that the data will consist of a single character (letter or number) and 'Char(20)' indicates that the data will consist of a combination of 20 characters, letters, and numbers. 'Date' indicates that the data is a calendar date and will be accepted in a specified format. 'Num(11,2)' indicates the data is restricted to numbers and has an overall length of 11 numbers of which two are to the right of the decimal. In the XML format, a numeric value must contain a decimal. For example, if the type is specified as Num(12,3) and the number value to be submitted is the whole number 15; enter 15 as 15.00 (translates to 15.000).

The ***Essential*** column indicates the minimum data submission requirements for successful file import when a '✓' is present in the column. This column does not indicate the necessity of data required by the NRC to be reported; only the requirement for a successful file import into NMMSS.

The ***Note*** column lists any remarks that will indicate special instructions, such as the format to be used or a value that remains constant. Note that all dates are to be entered in the format MM/DD/YYYY in XML formatted file. This means that dates will be reported with their two-digit month indication followed by the two digit day indication and then the four digit year. Note that negative numbers are generally permitted and indicated by the placement of a minus sign (-) to the left of the number.

1.5. File Creation

A file extension should be assigned which indicates the type of file format used. For example, **an XML file should always end in .xml.**

1.6. Data Submission Methods

Contact the NMMSS staff, (301)-903-6251, for additional directions regarding the use of SIMEX, Direct Link, or electronic mail. Electronic data may be mailed through the U.S. Postal Service on electronic media to the following address.

Peter Dessaules
Program Manager
Office of Nuclear Materials Integration
NMMSS Program, NA-532,
Germantown Building, Room A-378
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1290

(For classified documents) **Refer to SIMS for a Classified Address or contact NMMSS at** *301-903-6251 or email "NMMSS@nnsa.doe.gov".*

When mailing electronic media to NMMSS label the media with the following information:

- Licensee's RIS (Reporting Identification Symbol of the data source)
- Name and telephone number of the person to contact if there are problems or questions
- Name of the data file
- Any special instructions, comments or explanations

Note: A printed listing of the electronic data may be included with the electronic media and may expedite data processing in the event a damaged disk is received. It is not necessary to include the DOE/NRC forms when submitting data electronically to the NMMSS.

2. TRANSACTION DATA

2.1. Requirements for DOE/NRC Form 741 and Concise Notes

2.1.1. XML File Formatting

An example of transaction submission in XML format is shown below. Additional examples are shown in Appendix B along with the corresponding DOE/NRC forms. This is an example of raw XML produced by SAMS.

```
<TRANSACTIONS VERSION="2">
  <SHIPMENT SHIPPERRIS="ABC" RECEIVERRIS="ABC" TRANSFERNUMBER="00000001"
CORRECTION="1" PROCESSCODE="C" ACTIONCODE="M" NUMBEROFLINES="1"
NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="ABC"
TRANSFERAUTHORITY="TR" UKFLAG="" ACTIONDATE="4/25/2011" LICENSENUMBER=""
TOTALGROSSWEIGHT="0" TOTALVOLUME="0" SEALEDSOURCE="" TOTRANSFERAUTHORITY=""
RIS="ABC">
    <CONCISENOTE LINENUMBER="1" ENTRYREFERENCE="ENTRY"
TEXTOFCONCISENOTE="MESSAGE OF CONCISE NOTE" />
    <OBLIGATION>
      <MATERIAL LINENUMBER="1" COUNTRYCODE="CA">
        <ELEMENT ELEMENTWEIGHT="99.0000000" UNIT="">
          <ISOTOPE MATERIALTYPE="20" ISOTOPEWEIGHT="9.0000000" UNIT="" />
        </ELEMENT>
      </MATERIAL>
    </OBLIGATION>
    <MATERIAL PROJECT="A400403709" COEILINENUMBER="309" IAEACOMPCODE=""
TYPEINVENTORYCHANGE="34" OWNER="G" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="100.0000000"
NETWEIGHT="10.0000000" TOPROJECT="A401001000" TOCOEILINENUMBER=""
BACKREFLINENUMBER="112" LINENUMBER="1" BATCH="BATCH" NUMBEROFITEMS="2">
      <ELEMENT ELEMENTWEIGHT="99.0000000" ELEMENTLOE="10" UNIT="">
        <ISOTOPE MATERIALTYPE="20" WEIGHTPERCENT="10.000000" ISOTOPEWEIGHT="9.0000000"
ISOTOPELOE="10" UNIT="" />
      </ELEMENT>
    </MATERIAL>
  </SHIPMENT>
</TRANSACTIONS>
```

An important part of the XML format is the nesting of the records that make up a 741. In XML there are identifiers called Nodes which correspond to rows in the XML data. The Nodes have identifiers called Attributes which correspond to the data fields. For example, the SHIPMENT Node corresponds to the 741 Header record and the SHIPPERRIS Attribute is the Shipper RIS field of the Header record. Another important element of XML Nodes is that they can contain other nodes as known as nested nodes. The

Shipment Node(parent) can have MATERIAL, CONCISENOTE and OBLIGATION nodes (children). The following shows the nesting of the nodes for a 741.

SHIPMENT (header information, Shipper RIS, Receiver RIS etc..)
- CONCISENOTE
  - lines that make up the concise note
- OBLIGATION
  - lines required to report the obligations
  - ELEMENT
    - Contains element information for OBLIGATION
    - ISOTOPE
      - Contains isotope information for ELEMENT
- MATERIAL
  - lines required to report the detail lines
  - ELEMENT
    - Contains element information for MATERIAL
    - ISOTOPE
      - Contains isotope information for ELEMENT

The next sample is the same XML file as above, but has been indented using tabs to make it for readable to the human eye. It will process the same as the raw data. It also emphasizes the nesting of the data rows in the XML.

```
<TRANSACTIONS VERSION="2">
 <SHIPMENT
        SHIPPERRIS="ABC" RECEIVERRIS="ABC" TRANSFERNUMBER="00000001"
        CORRECTION="1" PROCESSCODE="C" ACTIONCODE="M" NUMBEROFLINES="1"
        NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="ABC"
        TRANSFERAUTHORITY="TR" UKFLAG="" ACTIONDATE="4/25/2011"
        LICENSENUMBER="" TOTALGROSSWEIGHT="0"      TOTALVOLUME="0"
SEALEDSOURCE="" TOTRANSFERAUTHORITY=""
        RIS="ABC">
  <CONCISENOTE
        LINENUMBER="1" ENTRYREFERENCE="ENTRY"
        TEXTOFCONCISENOTE="MESSAGE OF CONCISE NOTE" />
  <CONCISENOTE
        LINENUMBER="2" ENTRYREFERENCE="ENTRY L2"
        TEXTOFCONCISENOTE="LINE 2" />
  <OBLIGATION>
        <MATERIAL
                LINENUMBER="1" COUNTRYCODE="CA">
                <ELEMENT
                        ELEMENTWEIGHT="99.0000000" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="20"
                                ISOTOPEWEIGHT="9.0000000" UNIT="" />
                </ELEMENT>
```

```
        </MATERIAL>
    </OBLIGATION>
    <OBLIGATION>
        <MATERIAL
            LINENUMBER="2" COUNTRYCODE="AU">
            <ELEMENT
                ELEMENTWEIGHT="9.0000000" UNIT="">
                <ISOTOPE
                    MATERIALTYPE="20"
                    ISOTOPEWEIGHT="1.0000000" UNIT="" />
            </ELEMENT>
        </MATERIAL>
    </OBLIGATION>
    <MATERIAL
        LINENUMBER="1"  PROJECT="ABCD3709" COEILINENUMBER="309"
        IAEACOMPCODE="" TYPEINVENTORYCHANGE="34" OWNER="G"
        KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
        MEASUREMETHOD="" GROSSWEIGHT="100.0" NETWEIGHT="10.0"
        TOPROJECT="" TOCOEILINENUMBER="" BACKREFLINENUMBER="112"
        BATCH="BATCH" NUMBEROFITEMS="2">
        <ELEMENT
            ELEMENTWEIGHT="99.00" ELEMENTLOE="10" UNIT="">
            <ISOTOPE
                MATERIALTYPE="20" WEIGHTPERCENT="10.00"
            ISOTOPEWEIGHT="9.000" ISOTOPELOE="10" UNIT="" />
        </ELEMENT>
    </MATERIAL>
    <MATERIAL
        LINENUMBER="0" PROJECT="" COEILINENUMBER="309" IAEACOMPCODE=""
        TYPEINVENTORYCHANGE="34" OWNER="J" KEYMEASUREPOINT=""
        MEASUREBASIS="" OTHERMEASUREPOINT="" MEASUREMETHOD=""
        GROSSWEIGHT="0.0000000" NETWEIGHT="0.0000000" TOPROJECT=""
        TOCOEILINENUMBER="" BACKREFLINENUMBER="" BATCH=""
        NUMBEROFITEMS="3">
        <ELEMENT
            ELEMENTWEIGHT="0.0000000" ELEMENTLOE="0" UNIT="">
            <ISOTOPE
                MATERIALTYPE="" WEIGHTPERCENT="0.000000"
            ISOTOPEWEIGHT="0.0000000" ISOTOPELOE="0" UNIT="" />
        </ELEMENT>
    </MATERIAL>
  </SHIPMENT>
</TRANSACTIONS>
```

This last listing shows the nodes and attributes in their properly nested configuration with information detailing the data requirements.

<TRANSACTIONS Is the main node for 741 transactions
VERSION="2" This indicates the current version of XML format.
>
<SHIPMENT Is a node and a child of TRANSACTIONS

It contains the information from the Header record, data code type 1

SHIPPERRIS=”ABC”

Attribute in Shipment node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table

RECEIVERRIS=”ABC”

Attribute in Shipment node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table

TRANSFERNUMBER="00000001"

Attribute in Shipment node
8 Alphanumeric Characters
If the datatype is integer then the number will be left padded with zeros during the import process

CORRECTION="1"

Attribute in Shipment node
1 Alphanumeric Character

PROCESSCODE="C"

Attribute in Shipment node
1Alpha Character
Accepted values A,C or D

ACTIONCODE="M"

Attribute in Shipment node
1 Alpha Character
Validated by ActionCode section of StaticData Authority Reference Table

NUMBEROFLINES="1"

Attribute in Shipment node
Integer, non-negative

NATUREOFTRANSACTION=""

Attribute in Shipment node
1 Alpha Character
Validated by TICode section of StaticData Authority Reference Table if required
Also called TI Code

SHIPPEDFORRIS=""

Attribute in Shipment node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table if required
Also called ForAccount

SHIPPEDTORIS="ABC"

Attribute in Shipment node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table if required
Also called ToAccount

TRANSFERAUTHORITY=""

Attribute in Shipment node

17 Alphanumeric Characters
No validation performed.

UKFLAG=""
Attribute in Shipment node
1 Alpha Character
Validated by SpecialIAEACode section of StaticData Authority Reference Table, acceptable values are blank, N or R
Also called SpecialIAEACode
The IAEA UK reportable indication is only required for transactions involving United Kingdom facilities. Reporting 'R' indicates that the UK data is reportable to the IAEA. Reporting 'N' indicates that the UK data is not reportable to the IAEA. Leave this field blank for data that does not involve the United Kingdom facilities.

ACTIONDATE="4/25/2011"
Attribute in Shipment node
Date in mm/dd/yyyy format
Also called Activity Date

LICENSENUMBER=""
Attribute in Shipment node
10 Alphanumeric Characters
Validated by INMTS Authority Reference Table if required

PORTOFENTRY=""
Attribute in Shipment node
4 Alphanumeric Characters
Discontinued 10/2003

TOTALGROSSWEIGHT="0"
Attribute in Shipment node
Integer, non-negative
Also know as GrossWeight

TOTALVOLUME="0"
Attribute in Shipment node
Integer, non-negative

SEALEDSOURCE=""
Attribute in Shipment node
10 Alphanumeric Characters
No validation occurs at this time.

TOTRANSFERAUTHORITY=""
Attribute in Shipment node
17 Alphanumeric Characters
No longer validated, was used for Contract Transfers.

>

<CONCISENOTE a node and a child of Shipment
There may by as many lines as required to send the concise note information

LINENUMBER="1"
Attribute in ConciseNote node
Integer, non-negative

ENTRYREFERENCE="ENTRY"
Attribute in ConciseNote node
20 Alphanumeric Characters

TEXTOFCONCISENOTE="MESSAGE OF CONCISE NOTE"
Attribute in ConciseNote node
60 Alphanumeric Characters

/>

<OBLIGATION a node and a child of Shipment
>
<MATERIAL a node and a child of Obligation
There may by as many lines as required to report the obligation information
LINENUMBER="1"
Attribute in Material node
Integer, non-negative
COUNTRYCODE="CA"
Attribute in Material node
2 Alpha Character
Validated by CountryCode section of StaticData Authority Reference Table
>
<ELEMENT a node and a child of Material
ELEMENTWEIGHT="99.0000000"
Attribute in Element node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
decimal point is not implied
>
<ISOTOPE a node and a child of Element
MATERIALTYPE="20"
Attribute in Isotope node
2 Alphanumeric Characters
Validated by MaterialType Authority Reference Table
ISOTOPEWEIGHT="9.0000000"
Attribute in Isotope node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

```
                    />
            </ELEMENT>
    </MATERIAL>
</OBLIGATION>
```

<MATERIAL is a node and a child of Shipment
It contains the information from the Detail records, data code types 2 and 5

LINENUMBER="1"
Attribute in Material node
Integer, non-negative

TYPEINVENTORYCHANGE="34"
Attribute in Material node
2 Alphanumeric Characters
Validated by list of Codes when required

BATCH="BATCH"
Attribute in Material node
16 Alphanumeric Characters

NUMBEROFITEMS="2"
Attribute in Material node
Integer

OWNER="G"
Attribute in Material node
1 Alpha Character
Validated by OwnerCode section of StaticData Authority Reference Table
Also called Owner Code

PROJECT="ABCDE03709"
Attribute in Material node
10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Also called Project Number

COEILINENUMBER="309"
Attribute in Material node
4 Alphanumeric Characters
Validated by CompCode Authority Reference Table
Also called Comp Code
IAEA reporting facilities should put their IAEA Comp Code or IAEA Facililty code in this field, NMMSS will translate during the import process

GROSSWEIGHT="100.0000000"
Attribute in Material node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

NETWEIGHT="10.0000000"
Attribute in Material node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

KEYMEASUREPOINT=""
Attribute in Material node
2 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table

MEASUREBASIS=""
Attribute in Material node
1 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table

OTHERMEASUREPOINT=""
Attribute in Material node
2 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table

MEASUREMETHOD=""
Attribute in Material node
1 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table

TOPROJECT="ABCDEF1000"
Attribute in Material node
10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Only reportable with P ActionCode Project Transfer
Also called ToProject Number

TOCOEILINENUMBER=""
Attribute in Material node
4 Alphanumeric Characters
Validated by CompCode Authority Reference Table
Only reportable with P ActionCode Project Transfer
Also called To Comp Code

BACKREFLINENUMBER="112"
Attribute in Material node
3 Alphanumeric Characters
1st Character is the BackReferenceChangeDigit
2nd and 3rd Characters are BackReferenceLinenumber
>

<ELEMENT is a node and a child of Material
There must always be one and only one Element per node

for each Material node
ELEMENTWEIGHT="99.0000000"
Attribute in Element node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
ELEMENTLOE="10"
Attribute in Element node
Integer
>
<ISOTOPE
MATERIALTYPE="20"
Attribute in Isotope node
2 Alphanumeric Characters
Validated by MaterialType Authority Reference Table
WEIGHTPERCENT="10.000000"
Attribute in Isotope node
Numeric (16,6)
16 digits of precision and up to 6 decimal places
Decimal point is not implied
ISOTOPEWEIGHT="9.0000000"
Attribute in Isotope node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
ISOTOPELOE="10"
Attribute in Isotope node
Integer
/>
</ELEMENT>
</MATERIAL>
</SHIPMENT>
</TRANSACTIONS>

Root Tag <TRANSACTIONS>

Header Information <SHIPMENT>

Field Description	*741*	*Type*	*Essential*	*Note*
Shipper RIS	1	Char(4)	✓	
Receiver RIS	2	Char(4)	✓	
Transaction/Transfer Number	3	Char(8)	✓	Right justified Zero fill blanks
Correction Number	4	Char(1)		
Process Code	5	Char(1)	✓	See Appendix A.

Action Code	6	Char(1)	✓	
Number of Data Lines	10	Num(5)	✓	
TI Code/Nature of Transaction	11	Char(1)		
RIS For Account	12b	Char(4)		
RIS To Account	13b	Char(4)		
Transfer Authority	14	Char(17)		
IAEA UK Reportable[1]	23c	Char(1)		
Action Date	22	Date		MM/DD/YYYY
License Number	15	Char(10)		
Total Gross Weight	24	Num(10)		Whole numbers
Total Volume[2]	25	Num(10)		Whole numbers
Sealed Source		Char(10)		List tag only
Receiving Transfer Authority		Char(17)		List tag only

Concise Note Information <CONCISENOTE>

Note: if concise note information is not reported, there is no need to include a Concise Note section.

Field Description	*740M*	*Type*	*Essential*	*Note*
Line Number	7a			
Entry Reference	7b	Char(20)		
Concise Note Text	7c	Char(60)		

Material Description Information <MATERIALDESCRIPTION>

Field Description	*741*	*Type*	*Essential*	*Note*
Description		Char(1000)		

Miscellaneous Information <MISCELLANEOUS>

Field Description	*741*	*Type*	*Essential*	*Note*
Text		Char(1000)		

Obligation Information <OBLIGATION>

Note: if obligated data is not reported, there is no need to include an Obligation section.

Obligation Information <MATERIAL>

Field Description	*741*	*Type*	*Essential*	*Note*
Line Number	17	Num(5)	✓	
Country[3]	18	Char(2)		

Obligation Information <ELEMENT>

Field Description	*741*	*Type*	*Essential*	*Note*

[1] The IAEA UK reportable indication is only required for transactions involving United Kingdom facilities. Reporting 'R' indicates that the UK data is reportable to the IAEA. Reporting 'N' indicates that the UK data is not reportable to the IAEA. Leave this field blank for data that does not involve the United Kingdom facilities.

[2] Report total volume in cubic feet for material transferred to or from a nuclear waste management facility.

[3] Call the NMMSS or go to NMMSS.com for the latest list of obligation country.

Obligated Element Weight[4]	20	Num(19,7)	✓	
		Value must include a decimal point.		
Unit of Measure		Char(4)		List tag only

Obligation Information <ISOTOPE>

Field Description	***741***	***Type***	***Essential***	***Note***
Material Type	19	Char(2)		
Obligated Isotope Weight[5,6]	21	Num(19,7)	✓	
		Value must include a decimal point.		
Unit of Measure		Char(4)		List tag only

Detail Information <MATERIAL>

Note: If both the element weight and isotope weight are zero, there is no need to include a Material section.

Field Description	***741***	***Type***	***Essential***	***Note***
Project Number[7]	26/27 f	Char(10)		
Composition Facility Code	26/27 h	Char(4)		
Type of Inventory Change	26/27 c	Char(2)		
Owner Code	26/27 i	Char(1)		
Key Measurement Point	26/27 j	Char(2)		
Measurement Basis	26/27 k1	Char(1)		
Other Measurement Point	26/27 k2	Char(2)		
Measurement Method	26/27 k3	Char(1)		
Gross Weight	26/27 l	Num(10)		
Net Weight	26/27 m	Num(10)		
Receiving Project Number		Char(10)		List tag only
Receiving Composition Facility Code		Char(4)		List tag only
Back Reference Number[8]	26/27 a	Char(3)		Zero fill blanks
Line Number	26/27 b	Num(5)	✓	
Batch Name/Identification	26/27 d	Char(16)		ALL Caps
Number of Items	26/27 e	Num(2)		

Detail Information <ELEMENT>

Field Description	***741***	***Type***	***Essential***	***Note***
Element Weight[5]	26/27 n	Num(19,7)	✓[9]	

[4] The RIS must attain authorization from NRC to report to the 3rd decimal. Three decimal reporting is only allowed when reporting Source Material.
[5] The RIS must attain authorization from NRC to report to the 3rd decimal. Three decimal reporting is only allowed when reporting Source Material.
[6] Obligated Isotope Weight is required for Enriched Uranium only.
[7] Project numbers are reported only for government owned material.
[8] Back Reference Number; the first character is the correction identifier. The second and third characters are the line number referenced. When reported, insert zeros for blank values.

			Value must include a decimal point.
Element Limit of Error	26/27 o	Num(5)	Whole numbers
Unit of Measure		Char(4)	List tag only

[9] Element or Isotope weight may be essential to successful file import depending on the specified material type.

Detail Information <ISOTOPE>

Field Description	***741***	***Type***	***Essential***	***Note***
Material Type	26/27 g	Char(2)		
Weight Percent Isotope/Parts Per Million	26/27 p	Num(6,4)[10] *Value must include a decimal point.*		
Isotope Weight[11]	26/27 q	Num(19,7) *Value must include a decimal point.*	✓[12]	
Isotope Limit of Error	26/27 r	Num(5)		Whole numbers
Unit of Measure		Char(4)		List tag only

[10] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

[11] The RIS must attain authorization from NRC to report to the 3rd decimal. Three decimal reporting is only allowed when reporting Source Material.

[12] Element or Isotope weight may be essential to successful file import depending on the specified material type.

3. INVENTORY DATA

3.1. Requirements for DOE/NRC Form 742C

3.1.1. XML File Formatting

An example of an inventory submission in XML format is shown below. Additional examples are shown in Appendix B along with the corresponding DOE/NRC form. This is an example of raw XML produced by SAMS.

```
<PHYSICALINVENTORY VERSION="2">
 <INVENTORY RIS="ABC" DATE="1/1/2011">
  <MATERIAL PROCESSCODE="" SEQUENCENUMBER="1" PROJECT="" COEILINENUMBER=""
OWNER="" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD="" SCRAPPROGRAM="" ENTRYSTATUS="" NUMBEROFITEMS="0" BATCH=""
LOCATION="" SITEMBA="">
   <CONCISENOTE PROCESSCODE="" LINENUMBER="1" ENTRYREFERENCE="ENTRY REF"
TEXTOFCONCISENOTE="TEXT" />
   <ELEMENT ELEMENTWEIGHT="0.0000000" UNIT="">
    <ISOTOPE MATERIALTYPE="R" WEIGHTPERCENT="0.000000" ISOTOPEWEIGHT="0.0000000"
UNIT="" />
   </ELEMENT>
  </MATERIAL>
 </INVENTORY>
</PHYSICALINVENTORY>
```

An important part of the XML format is the nesting of the records that make up a 742C. In XML there are identifiers called Nodes which correspond to rows in the XML data. The Nodes have identifiers called Attributes which correspond to the data fields. For example, the Inventory Node corresponds to the 742C Header record and the RIS Attribute is the RIS field of the Header record. Another important element of XML Nodes is that they can contain other nodes as known as nested nodes. The Inventory Node (parent) can have MATERIAL and CONCISENOTE nodes (children). The following shows the nesting of the nodes for a 742C.

```
INVENTORY (RIS and date.)
        MATERIAL
                0 to many lines required to report the inventory data
                ELEMENT
                        Contains element information for MATERIAL
                        ISOTOPE
                                Contains isotope information for ELEMENT
        CONCISENOTE
                0 to many lines that make up the concise note
```

The next sample is the same XML file as above, but has been indented using tabs to make it for readable to the human eye. It will process the same as the raw data. It also emphasizes the nesting of the data rows in the XML.

```
<PHYSICALINVENTORY VERSION="2">
 <INVENTORY
        RIS="ABC" DATE="1/1/2011">
        <MATERIAL
                PROCESSCODE="" SEQUENCENUMBER="1" PROJECT="" COEILINENUMBER=""
OWNER=""
                KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD=""
                SCRAPPROGRAM="" ENTRYSTATUS="" NUMBEROFITEMS="0" BATCH=""
LOCATION="" SITEMBA="">
                <CONCISENOTE
                        PROCESSCODE="" LINENUMBER="1" ENTRYREFERENCE="ENTRY REF"
TEXTOFCONCISENOTE="TEXT" />
                <ELEMENT
                        ELEMENTWEIGHT="0.0000000" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="20" WEIGHTPERCENT="0.000000"
ISOTOPEWEIGHT="0.0000000" UNIT="" />
                </ELEMENT>
        </MATERIAL>
 </INVENTORY>
</PHYSICALINVENTORY>
```

This last listing shows the nodes and attributes in their properly nested configuration with information detailing the data requirements.

<PHYSICALINVENTORY VERSION="2">
<INVENTORY
RIS="ABC"
Attribute in Inventory node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table
DATE="1/1/2011"
Attribute in Inventory node
Date in mm/dd/yyyy format
Also called Inventory Report Date
>
<MATERIAL
PROCESSCODE="C"
Attribute in Material node
1 Alpha Character
Accepted values A,C or D

SEQUENCENUMBER="1"
Attribute in Material node
Integer, non-negative
BATCH="BATCH"
Attribute in Material node
16 Alphanumeric Characters
NUMBEROFITEMS="2"
Attribute in Material node
Integer
OWNER="G"
Attribute in Material node
1 Alpha Character
Validated by OwnerCode section of StaticData Authority Reference Table
Also called Owner Code
PROJECT="ABCDE03709"
Attribute in Material node
10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Also called Project Number
COEILINENUMBER="309"
Attribute in Material node
4 Alphanumeric Characters
Validated by CompCode Authority Reference Table
Also called Comp Code
IAEA reporting facilities should put their IAEACompCode or IAEAFacililtyCode in this field
NMMSS will translate during the import process

KEYMEASUREPOINT=""
Attribute in Material node
2 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table
MEASUREBASIS=""
Attribute in Material node
1 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table
OTHERMEASUREPOINT=""
Attribute in Material node
2 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table
MEASUREMETHOD=""
Attribute in Material node
1 Alphanumeric Characters
Validated by IAEAFacilityAttachment Authority Reference Table
LOCATION=""
Attribute in Material node
20 Alphanumeric Characters
No validation occurs at this time
SITEMBA=""
Attribute in Material node
20 Alphanumeric Characters
No validation occurs at this time
>

<CONCISENOTE
PROCESSCODE="C"
Attribute in ConciseNote node
1 Alpha Character
Accepted values A,C or D
LINENUMBER="1"
Attribute in ConciseNote node
Integer, non-negative
ENTRYREFERENCE="ENTRY"
Attribute in ConciseNote node
20 Alphanumeric Characters
TEXTOFCONCISENOTE="MESSAGE OF CONCISE NOTE"
Attribute in ConciseNote node
60 Alphanumeric Characters
/>
<ELEMENT
ELEMENTWEIGHT="99.0000000"
Attribute in Element node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
>
<ISOTOPE
MATERIALTYPE="20"

Attribute in Isotope node
2 Alphanumeric Characters
Validated by MaterialType Authority Reference Table

WEIGHTPERCENT="10.000000"

Attribute in Isotope node
Numeric (16,6)
16 digits of precision and up to 6 decimal places
Decimal point is not implied

ISOTOPEWEIGHT="9.0000000"

Attribute in Isotope node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

```
            />
        </ELEMENT>
    </MATERIAL>
</INVENTORY>
</PHYSICALINVENTORY>
```

Root Tag <PHYSICALINVENTORY>

Header Information <INVENTORY>

Field Description	*742C*	*Type*	*Essential*	*Note*
RIS	2	Char(4)	✓	
Inventory Report Date	3	Date	✓	MM/DD/YYYY

Concise Note Information Attached to Header <CONCISENOTE>

Note: if concise note information is not reported, there is no need to include a Concise Note section.

Field Description	*740M*	*Type*	*Essential*	*Note*
Process Code	5e	Char(1)	✓	See Appendix A.
Line Number	7a	Num(2)		
Entry Reference	7b	Char(20)		
Concise Note Text	7c	Char(60)		

Detail Information <MATERIAL>

Note: If both the element weight and isotope weight are zero, there is no need to include a Material section.

Field Description	*742C*	*Type*	*Essential*	
Process Code	5q	Char(1)	✓	See Appendix A.
Sequence Number[13]	5i	Num(6)	✓	
Project Number[14]	5e	Char(10)		

[13] Sequence number should begin at one for the entire inventory or each material type group (Generic MT 20 includes MT 21 – 39 and E1 – E4) and should be consecutively numbered including the total line (composition code 899).

[14] Project numbers are reported only for government owned material.

Composition-Facility Code[15]	5b	Char(4)	
Owner Code	5h	Char(1)	
Key Measurement Point	5l	Char(2)	
Measurement Basis	5m	Char(1)	
Other Measurement Point	5m	Char(2)	
Measurement Method	5m	Char(1)	
Scrap Program	5f	Char(1)	
Entry Status	5n	Char(1)	
Number of Items	5k	Num(5)	
Batch Name/Identification	5j	Char(16)	All Caps
Location of Item	5o	Char(30)	
Site MBA Code	5p	Char(30)	

Concise Note Information Attached to Material (Item) <CONCISENOTE>

Note: if concise note information is not reported, there is no need to include a Concise Note section.

Field Description	*740M*	*Type*	*Essential*	*Note*
Process Code	5e	Char(1)	✓	See Appendix A.
Line Number	7a	Num(2)		
Entry Reference	7b	Char(20)		
Concise Note Text	7c	Char(60)		

Detail Information <ELEMENT>

Field Description	*742C*	*Type*	*Essential*	
Element Weight[16]	5c	Num(19,7)	✓[17]	
		Value must include a decimal point.		
Unit of Measure		Char(4)		List tag only

Detail Information <ISOTOPE>

Field Description	*742C*	*Type*	*Essential*	
Material Type	5a	Char(2)		
Weight Percent Isotope/Parts Per Million	5g	Num(6,4) [18]		
		Value must include a decimal point.		
Isotope Weight[24]	5d	Num(19,7)	✓[25]	
		Value must include a decimal point.		
Unit of Measure		Char(4)		List tag only

4. MATERIAL BALANCE DATA

[15] For total lines, this field will always contain "899".
[16] The RIS must attain authorization from NRC to report to the 3rd decimal. Three decimal reporting is only allowed when reporting Source Material.
[17] Element or Isotope weight may be essential to successful file import depending on the specified material type.
[18] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

4.1. Requirements for DOE/NRC Form 742

4.1.1. XML File Formatting

An example of material balance submission in XML format is shown below. Additional examples are shown in Appendix B along with the corresponding DOE/NRC form. This is an example of raw XML produced by SAMS.

```
<MATERIALBALANCEREPORT VERSION="2">
 <MATERIALBALANCE RIS="YLM" STARTDATE="4/27/2010" ENDDATE="4/26/2011">
  <MATERIAL PROCESSCODE="" SEQUENCENUMBER="2" DATACODE=""
MATERIALBALANCECATEGORY="80">
   <CONCISENOTE PROCESSCODE="" LINENUMBER="1" ENTRYREFERENCE="ENTRY"
TEXTOFCONCISENOTE="TEXT" />
   <ELEMENT ELEMENTWEIGHT="0.0000000" TYPEINVENTORYCHANGE="MF" OTHERRIS="ACD"
ENTRYSTATUS="" UNIT="">
    <ISOTOPE MATERIALTYPE="" ISOTOPEWEIGHT="0.0000000" UNIT="" />
   </ELEMENT>
  </MATERIAL>
 </MATERIALBALANCE>
</MATERIALBALANCEREPORT>
```

An important part of the XML format is the nesting of the records that make up a 742. In XML there are identifiers called Nodes which correspond to rows in the XML data. The Nodes have identifiers called Attributes which correspond to the data fields. For example, the Material Balance Node corresponds to the 742 Header record and the RIS Attribute is the RIS field of the Header record. Another important element of XML Nodes is that they can contain other nodes as known as nested nodes. The Material Balance Node (parent) can have MATERIAL nodes (children). The following shows the nesting of the nodes for a 742.

```
MATERIALBALANCE (RIS and dates.)
        MATERIAL
                0 to many lines required to report the Material Balance data
                ELEMENT
                        Contains element information for MATERIAL
                        ISOTOPE
                                Contains isotope information for ELEMENT
        CONCISENOTE
                0 to many lines that make up the concise note
```

The next sample is the same XML file as above, but has been indented using tabs to make it for readable to the human eye. It will process the same as the raw data. It also emphasizes the nesting of the data rows in the XML.

```
<MATERIALBALANCEREPORT VERSION="2">
 <MATERIALBALANCE
        RIS="YLM" STARTDATE="4/27/2010" ENDDATE="4/26/2011">
```

```
        <MATERIAL
                PROCESSCODE="" SEQUENCENUMBER="2" DATACODE=""
                MATERIALBALANCECATEGORY="80">
                <ELEMENT
                        ELEMENTWEIGHT="0.0000000" TYPEINVENTORYCHANGE="MF"
                        OTHERRIS="ACD" ENTRYSTATUS="" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="" ISOTOPEWEIGHT="0.0000000" UNIT="" />
                </ELEMENT>
                <CONCISENOTE
                        PROCESSCODE="" LINENUMBER="1" ENTRYREFERENCE="ENTRY"
                        TEXTOFCONCISENOTE="TEXT" />
        </MATERIAL>
 </MATERIALBALANCE>
</MATERIALBALANCEREPORT>
```

This last listing shows the nodes and attributes in their properly nested configuration with information detailing the data requirements.

```
<MATERIALBALANCEREPORT VERSION="2">
 <MATERIALBALANCE
        RIS="ABC"
                Attribute in MaterialBalance node
                4 Alphanumeric Characters
                Validated by RIS Authority Reference Table
        STARTDATE="4/27/2010"
                Attribute in MaterialBalance node
                Date in mm/dd/yyyy format
        ENDDATE="4/26/2011"
                Attribute in MaterialBalance node
                Date in mm/dd/yyyy format
        >
        <MATERIAL
                PROCESSCODE=""
                        Attribute in Material node
                        1 Alpha Character
                        Accepted values A,C or D
                SEQUENCENUMBER="2"
                        Attribute in Material node
                        Integer, non-negative
                DATACODE=""
                        Attribute in Element node
                        1 Alphanumeric Character
                        Allowed values; 3 or 4
                        Also known as TypeCode
                MATERIALBALANCECATEGORY="80"
                        Attribute in Material node
                        2 Alphanumeric Characters
                        Validated by RIS Material Balance Category Authority Reference Table
        >
                <ELEMENT
                        ELEMENTWEIGHT="0.0000000"
```

Attribute in Element node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

TYPEINVENTORYCHANGE="MF"
Attribute in Element node
2 Alpha Characters
Validated by Inventory Change Type section of StaticData Authority Reference Table

OTHERRIS="ACD"
Attribute in Element node
4 Alphanumeric Characters
Validated by RIS Authority Reference Table

ENTRYSTATUS=""
Attribute in Element node
1 Alpha Character
Validated by Entry Status section of StaticData Authority Reference Table

>

<ISOTOPE
MATERIALTYPE="20"
Attribute in Isotope node
2 Alphanumeric Characters
Validated by MaterialType Authority Reference Table

ISOTOPEWEIGHT="9.0000000"
Attribute in Isotope node
Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied

/>
</ELEMENT>
<CONCISENOTE
PROCESSCODE=""
Attribute in ConciseNote node
1Alpha Character
Accepted values A,C or D

LINENUMBER="1"
Attribute in ConciseNote node
Integer, non-negative

ENTRYREFERENCE="ENTRY"
Attribute in ConciseNote node
20 Alphanumeric Characters

TEXTOFCONCISENOTE="MESSAGE OF CONCISE NOTE"
Attribute in ConciseNote node
60 Alphanumeric Characters

/>
</MATERIAL>
</MATERIALBALANCE>
</MATERIALBALANCEREPORT>

Root Tag <MATERIALBALANCEREPORT>

Header Information <MATERIALBALANCE>

Field Description	742	Type	Essential	Note
RIS	3	Char(4)	✓	
Report Period From	4	Date	✓	MM/DD/YYYY
Report Period To	4	Date	✓	MM/DD/YYYY

Concise Note Information Attached to Header <CONCISENOTE>

Note: if concise note information is not reported, there is no need to include a Concise Note section.

Field Description	740M	Type	Essential	Note
Process Code	5e	Char(1)	✓	See Appendix A.
Line Number	7a	Num(2)		
Entry Reference	7b	Char(20)		
Concise Note Text	7c	Char(60)		

Detail Information <Material>

Note: If both the element weight and isotope weight are zero, there is no need to include a Material section.

Field Description	742	Type	Essential	Note
Process Code	Sec. A & B PC	Char(1)	✓	See Appendix A.
Sequence Number[19]	Sec. A & B SEQ	Num(6)	✓	
Data Code	-	Num(1)	✓	Value is 3 (Receipts) or 4 (Removals)
Material Balance Category[20]	Sec A Row # Sec B column 1	Char(2)		Right justified Zero fill blanks

Concise Note Information Attached to Material (Item) <CONCISENOTE>

Note: if concise note information is not reported, there is no need to include a Concise Note section.

Field Description	740M	Type	Essential	Note
Process Code	5e	Char(1)	✓	See Appendix A.
Line Number	7a	Num(2)		
Entry Reference	7b	Char(20)		
Concise Note Text	7c	Char(60)		

Detail Information <ELEMENT>

Field Description	742	Type	Essential	Note

[19] Sequence number should begin at one for the entire material balance per material type and should be consecutively numbered.

[20] Call the NMMSS or go to NMMSS.com for the latest list of Material Balance Categories codes related to Obligations (Section B)

Element Weight[21]	Sec A column A Sec B Column 2	Num(19,7)	✓[22]	*Value must include a decimal point.*
Inventory Change Type (ICT)	line 22 & 71	Char(2)		
Other RIS	line 11,30, 42,43 & 51	Char(4)		
Entry Status	-	Char(1)		
Unit of Measure	-	Char(4)		List tag only

Detail Information <ISOTOPE>

Field Description	***742***	***Type***	***Essential***	***Note***
Material Type	5	Char(2)		
Isotope Weight[37]	Sec A column B Sec B Column 3	Num(19,7)	✓[38]	*Value must include a decimal point.*
Unit of Measure	-	Char(4)		List tag only

[21] The RIS must attain authorization from NRC to report to the 3rd decimal. Three decimal reporting is only allowed when reporting Source Material.
[22] Element or Isotope weight may be essential to successful file import depending on the specified material type.

APPENDIX A
PROCESS CODE

PROCESS CODE

DEFINITION: The process code identifies the type of system action to be taken for the data being reported as follows:

1. Process code A is used to signify the initial submittal of data. Use process code C to replacement a data set already submitted to the NMMSS;

2. Process code C is used to signify the replacement of previously reported data. Its use is restricted to the replacement of data in the same reporting month;

3. Process code D applies when the facility intends the deletion of previously reported data. Its use is also restricted to applying only to data in the same reporting month; and

4. Process code Z is used in conjunction with action code D by the receiver to accept a shipper's change without the receiver having to retype the detailed lines.

SPECIAL NOTE: If replacement or deletion of data is desired, it is suggested that the reporting facility ensures that the accounting month to be affected is still "open" (being processed by the NMMSS) by calling the appropriate NMMSS contact since these actions are restricted and based on specified accounting periods.

APPENDIX B
EXAMPLES

Example 1

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003 EXPIRES: 00/00/00

Estimated burden per response to comply with this mandatory collection request: 45 minutes. This information is required for RIS accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by internet email to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER
ABC	DEF	131			A		A

10. NO. OF DATA LINES: 3

9a. NAME AND ADDRESS OF SHIPPER:
Advanced Physics
123 Anywhere Road
Commontown ZA 11111

23a. MISCELLANEOUS: 2002

22. ACTION DATE — a. SHIPMENT: MONTH 12, DAY 31

Back reference (a)	Line no. (b)	Type of inv. change (c)	Identification (d)	No. of items (e)	Project number (f)	Material type (g)	Comp. facility code (h)	Owner code (i)	Key meas. point (j)	Meas. ident. (k)	Gross weight (l)	Net weight (m)	Element weight (n)	Element unit of error (o)	Weight % isotope (p)	Isotope weight (q)	Isotope unit of error (r)
		01	A Batch ID		1		10	309		J			426.00			.6610	3.00
		02	A Batch ID		1		20	309		J			2213.00			2.5305	56.00
		03	A Batch ID		1		50	309		J			901.00			99.3340	895.00

20081

28. SHIPPER'S DATA — 28c SHIPPER'S DATA: SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27. RECEIVER'S DATA — 27c 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.

Example 1

XML format:

```
<TRANSACTIONS>
 <SHIPMENT
        SHIPPERRIS="ABC" RECEIVERRIS="DEF" TRANSFERNUMBER="131"
        CORRECTION="" PROCESSCODE="A" ACTIONCODE="A" NUMBEROFLINES="3"
        NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS=""
        TRANSFERAUTHORITY="" UKFLAG="" ACTIONDATE="12/31/2002"
         LICENSENUMBER="" TOTALGROSSWEIGHT="20081" TOTALVOLUME=""
        SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
        <MATERIAL
                PROJECT="" COEILINENUMBER="309" TYPEINVENTORYCHANGE=""
                OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT=""
                NETWEIGHT="" TOPROJECT="" TOCOEILINENUMBER=""
                BACKREFLINENUMBER="" LINENUMBER="1" BATCH="A BATCH ID"
                NUMBEROFITEMS="1">
                <ELEMENT
                        ELEMENTWEIGHT="426.00" ELEMENTLOE="" UNIT="" >
                        <ISOTOPE
                                MATERIALTYPE="10" WEIGHTPERCENT="0.6610"
                                ISOTOPEWEIGHT="3.00" ISOTOPELOE="" UNIT="" >
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
                PROJECT="" COEILINENUMBER="309" TYPEINVENTORYCHANGE=""
                OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT=""
                NETWEIGHT="" TOPROJECT="" TOCOEILINENUMBER=""
                BACKREFLINENUMBER="" LINENUMBER="2" BATCH="A BATCH ID"
                NUMBEROFITEMS="1">
                <ELEMENT
                        ELEMENTWEIGHT="2213.00" ELEMENTLOE="" UNIT="" >
                        <ISOTOPE
                                MATERIALTYPE="20" WEIGHTPERCENT="2.5305"
                                ISOTOPEWEIGHT="56.00" ISOTOPELOE="" UNIT="" >
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
                PROJECT="" COEILINENUMBER="309" TYPEINVENTORYCHANGE=""
                OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT=""
                NETWEIGHT="" TOPROJECT="" TOCOEILINENUMBER=""
                BACKREFLINENUMBER="" LINENUMBER="3" BATCH="A BATCH ID"
                NUMBEROFITEMS="1">
                <ELEMENT
                        ELEMENTWEIGHT="901.00" ELEMENTLOE="" UNIT="" >
                        <ISOTOPE
                                MATERIALTYPE="50" WEIGHTPERCENT="99.3340"
                                ISOTOPEWEIGHT="895.00" ISOTOPELOE="" UNIT="" >
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
 </SHIPMENT>
</TRANSACTIONS>
```

Example 2

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. b. RECEIVER	6. ACTION CODE a. SHIPPER	6. b. RECEIVER
ABC	DEF	131	1	A		C	

8a. NAME AND ADDRESS OF SHIPPER:
Advanced Physics
123 Anywhere Road
Commontown ZA 11111

10. NO. OF DATA LINES: 4

22. ACTION DATE — b. SHIPPER'S CORRECTION: MONTH 12, DAY 31, YEAR 2002

21d. MISCELLANEOUS — b. CONCISE NOTE ATTACHED ☐ c. IAEA REPORTABLE? ☐ YES ☐ NO

28. SHIPPER'S DATA

BACK REFERENCE a	LINE NO b	TYPE OF INV. CHANGE c	IDENTIFICATION d	NO. OF ITEMS e	PROJECT NUMBER f	MATERIAL TYPE g	COMP. FACILITY CODE h	OWNER CODE i	KEY MEAS. POINT j	MEAS. IDENT. k	GROSS WEIGHT l	NET WEIGHT m	ELEMENT WEIGHT n	ELEMENT LIMIT OF ERROR o	WEIGHT % ISOTOPE p	ISOTOPE WEIGHT q	ISOTOPE LIMIT OF ERROR r
001	01			-1		10	309	J					-426.00		.6610	-3.00	
101	02			1		10	309	J					430.00		.6976	3.00	
002	03			-1		20	309	J					-2213.00		2.5305	-56.00	
103	04			1		20	309	J					2211.00		2.5327	56.00	

28c. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

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

27. 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.

Example 2

XML format:

```
<TRANSACTIONS>
 <SHIPMENT
        SHIPPERRIS="ABC" RECEIVERRIS="DEF" TRANSFERNUMBER="00000131"
        CORRECTION="1" PROCESSCODE="A" ACTIONCODE="C" NUMBEROFLINES="4"
        NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS=""
        TRANSFERAUTHORITY="" UKFLAG="" ACTIONDATE="12/31/2002"
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        SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
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                OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT=""
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                NUMBEROFITEMS="1">
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        </MATERIAL>
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                OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
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                    NETWEIGHT="" TOPROJECT="" TOCOEILINENUMBER=""
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                    NUMBEROFITEMS="1">
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Example 3a

DOE/NRC FORM 741
U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION
NUCLEAR MATERIAL TRANSACTION REPORT
ABC
DEF
131
Advanced Physics
123 Anywhere Road
Commontown ZA 11111
28a. SHIPPER'S DATA
28b. SHIPPER'S DATA
27a. RECEIVER'S DATA
27b. RECEIVER'S DATA

Example 3b

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. b. RECEIVER	6. ACTION CODE a. SHIPPER	6. b. RECEIVER
ABC	RGHI	10257		A		A	

8a. NAME AND ADDRESS OF SHIPPER: Advanced Physics, 123 Anywhere Road, Commontown ZA 11111

10. NO. OF DATA LINES: 2

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.: GEN-LIC

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT For Enriched Uranium Only
01	32	10	426	
02	32	20	2213	56

22. ACTION DATE — a. SHIPMENT: MONTH 12, DAY 31, YEAR 2002

23. MISCELLANEOUS — b. CONCISE NOTE ATTACHED: X; c. UR REPORTABLE? ☐ YES ☐ NO

24. TOTAL GROSS WEIGHT: 58499

26. SHIPPER'S DATA

a. BACK REFERENCE	b. LINE NO.	c. TYPE OF INV. CHANGE	d. IDENTIFICATION (ITEM/BATCH NAME)	e. NO. OF ITEMS	f. PROJECT NUMBER	g. MATERIAL TYPE	h. COMP. FACILITY CODE	i. OWNER CODE	j. KEY MEAS. POINT	k. MEAS. IDENT. BASIS	MEAS. IDENT. CHP	MEAS. IDENT. METHOD	l. GROSS WEIGHT	m. NET WEIGHT	n. ELEMENT WEIGHT	o. ELEMENT LIMIT OF ERROR	p. WEIGHT % ISOTOPE	q. ISOTOPE WEIGHT	r. ISOTOPE LIMIT OF ERROR
	01		A Batch ID	1		10	309	J							426.00		.6610	3.00	
	02		A Batch ID	1		20	309	J							2213 .00		2.5305	56.00	

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

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

27. 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.

Example 3c

DOE/NRC FORM 740M
(5-2000)
Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150
Public Laws 83-703, 93-438, 96-91

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

CONCISE NOTE

APPROVED BY OMB: NO. 3150-0057 EXPIRES: 05/31/2005

Estimated burden per response to comply with this mandatory collection request: 45 minutes. This information is required to satisfy the provisions of the US/IAEA Safeguards Agreement. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs@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. NAME	2. ATTACHMENT TO	3. RIS	4. REPORTING PERIOD
Advanced Physic	[X] A. DOE/NRC 741 [ ] B. DOE/NRC 742 [ ] C. DOE/NRC 742c		FROM / TO
STREET ADDRESS	5. TRANSACTION DATA		6. REPORTING DATE
123 Anywhere Road			
CITY / STATE / ZIP CODE			
Commontown / *ZA* / *11111*			

A. SHIPPER'S R/B	B. RECEIVER'S R/B	C. TRANSFER NUMBER	D. CORR. NUMBER	E. PC	F. AC
ABC	**RGHI**	**10257**		**A**	**A**

7a. LINE NO.	7B. ENTRY REFERENCE	7C. TEXT OF CONCISE NOTE
01	**Whole Report**	**Country of Oblig Code 32 Canada BL18**
02	**Whole Report**	**MBA Code UABC BL1**
03	**Whole Report**	**Batch ID -Any Batch Name- BL24d**
04	**Whole Report**	**Material Type Code BL24g as follows:**
05	**Whole Report**	**US material type 10 is IAEA code D**
06	**Whole Report**	**US material type 20 is IAEA code EG**

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

8. SIGNATURE (See instructions [NUREG/BR-0006] for provisions regarding confidentiality.)	9. TITLE	10. DATE
John Doe	MC&A Representative	12/31/2002

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 3d

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

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

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. [illegible] EXPIRES: [illegible]
Estimated burden per response to comply with this mandatory collection request: [illegible] minutes. This information is required for RIS accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC [illegible], or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-[illegible] ([illegible]), Office of Management and Budget, Washington, DC [illegible]. 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	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER	7. DOCUMENTATION
ABC	ABC	21229		A		M		PAGE OF PAGES / COPY OF COPIES / SERIES

8a. NAME AND ADDRESS OF SHIPPER: Advanced Physics, 123 Anywhere Road, Commontown ZA 11111
b. LICENSE NO.:
c. ATTENTION:
d. TELEPHONE:

9a. NAME AND ADDRESS OF RECEIVER:
b. LICENSE NO.:
c. ATTENTION:
d. TELEPHONE:

10. NO. OF DATA LINES: 2
11. NATURE OF TRANSACTION:
12a. SHIPPED FOR ACCOUNT OF / b. RIS:
13a. SHIPPED TO ACCOUNT OF / b. RIS:
14. TRANSFER AUTHORITY-CONTRACT, NM DRAFT, OR ORDER NUMBER:
15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.:
16. MATERIAL TYPE AND DESCRIPTION:
23. MISCELLANEOUS:
b. CONCISE NOTE ATTACHED ☐
c. LIR REPORTABLE? ☐ YES ☐ NO

DISTRIBUTION OF COPIES: NO. 1–9

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

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT	12	31	2002
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S M/U/S/D/F			
e. RECEIVER'S CORRECTION			

24. TOTAL GROSS WEIGHT:
25. TOTAL VOLUME (WASTE TRANSFERS ONLY):

BACK REFERENCE a	LINE NO b	TYPE OF INV. CHANGE c	IDENTIFICATION (ITEM/BATCH NAME) d	NO. OF ITEMS e	PROJECT NUMBER f	MATERIAL TYPE g	COMPOSITION/FACILITY CODE h	OWNER CODE i	KEY MEAS. POINT j	MEAS. IDENT. k 1 BASIS	MEAS. IDENT. k 2 OBP	MEAS. IDENT. k 3 METHOD	GROSS WEIGHT l	NET WEIGHT m	ELEMENT WEIGHT n	ELEMENT LIMIT OF ERROR o	WEIGHT % ISOTOPE p	ISOTOPE WEIGHT q	ISOTOPE LIMIT OF ERROR r
	01	NP				50	309	J							4767.00		45.6681	1255.00	
	02	TN				50	309	J							10945.00		24.4303	10945.00	

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

Example 3a, 3b, 3c, 3d

XML format:

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        TRANSFERAUTHORITY="" UKFLAG="" ACTIONDATE="12/31/2002" LICENSENUMBER=""
        TOTALGROSSWEIGHT="" TOTALVOLUME="" SEALEDSOURCE=""
        TOTRANSFERAUTHORITY="">
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        TRANSFERAUTHORITY="" UKFLAG="" ACTIONDATE="12/31/2002"
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        SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
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        </CONCISENOTE>
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        </CONCISENOTE>
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        TRANSFERAUTHORITY="" UKFLAG="" ACTIONDATE="12/31/2002" LICENSENUMBER=""
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        TOTRANSFERAUTHORITY="">
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            NETWEIGHT="" TOPROJECT="" TOCOEILINENUMBER=""
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            OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT=""
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            BACKREFLINENUMBER="" LINENUMBER="2" BATCH="" NUMBEROFITEMS="">
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  </SHIPMENT>
</TRANSACTIONS>
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Example 4
Physical Inventory Listing

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

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

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0058 **EXPIRES: MM/DD/YYYY**

Estimated burden per response to comply with this mandatory collection request: 6 hours. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0058), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME AND ADDRESS
Advanced Physics
STREET ADDRESS
123 Anywhere Road
CITY
Commontown
STATE
ZA
ZIP CODE
11111

2. REPORTING IDENTIFICATION SYMBOL (RIS)
ABC

3. INVENTORY DATE
12/31/2002

4. LICENSE NUMBER(S)

5. BATCH DATA

a. MATERIAL TYPE	b. COMP/FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PER-CENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D. MEAS. BASIS	OTHER MEAS. POINT	MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
E1	860	99	3				J	1										A
E1	863	61	1				J	2										A
E1	864	45	2				J	3										A
E1	865	65	4				J	4										A
6. TOTALS		270	10					5										

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

7. SIGNATURE
John Doe

8. TITLE
MC&A Representative

9. DATE
12/31/2002

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 4

XML format:

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<PHYSICALINVENTORY>
 <INVENTORY
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                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
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        </MATERIAL>
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                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
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                        <ISOTOPE
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                                ISOTOPEWEIGHT="1.00" UNIT="">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
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                COEILINENUMBER="864" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
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                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
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                COEILINENUMBER="865" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
                <ELEMENT
                        ELEMENTWEIGHT="65.00" UNIT="">
                        <ISOTOPE
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        <MATERIAL
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                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
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                        <ISOTOPE
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                        </ISOTOPE>
                </ELEMENT>
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</PHYSICALINVENTORY>
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Example 5
Physical Inventory Listing for selected IAEA facilities.

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

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

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0058 **EXPIRES: MM/DD/YYYY**

Estimated burden per response to comply with this mandatory collection request: 6 hours. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the USIAEA Safeguards Agreement. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0058), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME AND ADDRESS
Advanced Physics
STREET ADDRESS
123 Anywhere Road
CITY *Commontown* STATE *ZA* ZIP CODE *11111*

2. REPORTING IDENTIFICATION SYMBOL (RIS)
ABC

3. INVENTORY DATE
12/31/2002

4. LICENSE NUMBER(S)

5. BATCH DATA

a. MATERIAL TYPE	b. COMP/FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PER-CENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE ASSAY	m. MEASUREMENT ID. MEAS. BASIS	m. MEASUREMENT ID. OTHER MEAS. POINT	m. MEASUREMENT ID. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC	q. PROCESS CODE
E3	OGRB	155	112				J	1	Batch0422	10	02	N		N				A
E3	OGRB	268	159				J	2	Batch0434	10	02	N		N				A
6. TOTALS		423	271					3										

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

7. SIGNATURE *John Doe*

8. TITLE MC&A Representative

9. DATE 12/31/2002

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

XML format:

```
<PHYSICALINVENTORY>
 <INVENTORY
        RIS="ABC" DATE="12/31/2002">
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="1" PROJECT=""
                COEILINENUMBER="OGRB" OWNER="J" KEYMEASUREPOINT="02"
                MEASUREBASIS="N" OTHERMEASUREPOINT="" MEASUREMETHOD=""
                SCRAPPROGRAM="" ENTRYSTATUS="N" NUMBEROFITEMS="10"
                BATCH="BATCH0422" LOCATION="" SITEMBA="">
                <ELEMENT
                        ELEMENTWEIGHT="155.00" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="E3" WEIGHTPERCENT=""
                                ISOTOPEWEIGHT="112.00" UNIT="">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="2" PROJECT=""
                COEILINENUMBER="OGRB" OWNER="J" KEYMEASUREPOINT="02"
                MEASUREBASIS="N" OTHERMEASUREPOINT="" MEASUREMETHOD=""
                SCRAPPROGRAM="" ENTRYSTATUS="N" NUMBEROFITEMS="10"
                BATCH="BATCH0434" LOCATION="" SITEMBA="">
                <ELEMENT
                        ELEMENTWEIGHT="268.00" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="E3" WEIGHTPERCENT=""
                                ISOTOPEWEIGHT="159.00" UNIT="">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="3" PROJECT=""
                COEILINENUMBER="899" OWNER="" KEYMEASUREPOINT="" MEASUREBASIS=""
                OTHERMEASUREPOINT="" MEASUREMETHOD="" SCRAPPROGRAM=""
                ENTRYSTATUS="" NUMBEROFITEMS="" BATCH="" LOCATION="" SITEMBA="">
                <ELEMENT
                        ELEMENTWEIGHT="423.00" UNIT="">
                        <ISOTOPE
                                MATERIALTYPE="20" WEIGHTPERCENT=""
                                ISOTOPEWEIGHT="271.00" UNIT="">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
 </INVENTORY>
</PHYSICALINVENTORY>
```

Example 6a
Material Balance Report

DOE/NRC FORM 742U (MM-YYYY)
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150, Public Laws 83-703, 93-438, 95-91

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

MATERIAL BALANCE REPORT

APPROVED BY OMB: NO. 3150-0004 **EXPIRES: MM/DD/YYYY**

Estimated burden per response to comply with this mandatory collection request: 5 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0004), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME AND ADDRESS	2. LICENSE NUMBER(S)	3. REPORTING IDENTIFICATION SYMBOL (RIS)
Advanced Physics *123 Anywhere Road* *Commontown, ZA 11111*		**ABC**
	4. REPORT PERIOD (MM/DD/YYYY) FROM **01/01/2002** TO **12/31/2002**	5. MATERIAL TYPE (Submit separate report for each type) **50**

SECTION A **MATERIAL ACCOUNTABILITY**

PC	SEQ		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
A	**1**	8. BEGINNING INVENTORY -- U.S. GOVT-OWNED	**0.00**	**0.00**
		9. BEGINNING INVENTORY -- NOT U.S. GOVT-OWNED		
		RECEIPTS		
		11. PROCUREMENT FROM DOE RIS		
A	**2**	FROM: **DEF**	**11207.00**	**1112.00**
		13. PROCUREMENT -- FOR THE ACCOUNT OF DOE		
		14. DOD RETURNS -- USE A		
		15. DOD RETURNS -- USE B		
		16. DOD RETURNS -- OTHER USES		
		21. PRODUCTION		
		22. FROM OTHER MATERIALS a. ICT		
		b. ICT		
		c. ICT		
		30. RECEIPTS REPORTED TO DOE/NRC ON DOE/NRC 741 *(not listed elsewhere)*		
		FROM: RIS		
A	**3**	**GHI**	**38.00**	**25.00**
		34. RECEIPTS -- MISC		
		37. PROCUREMENT BY OTHERS		
		38. DONATED MATERIAL -- FROM U.S. GOVT TO OTHERS		
		39. DONATED MATERIAL -- FROM OTHERS TO U.S. GOVT		
		40. TOTAL *(Lines 8-39)*		
		REMOVALS		
		41. EXPENDED IN SPACE PROGRAMS		
		42. SALES TO U.S. GOVT RIS TO: RIS		
		TO:		
		43. SALES TO OTHERS FOR THE ACCOUNT OF U.S. GOVT RIS		
		TO:		
		44. DOD -- USE A		
		45. DOD -- USE B		
A	**4**	46. DOD -- OTHER USES	**2.00**	**1.00**
		47. EXPENDED IN U.S. GOVT TESTS		
		48. ROUTINE TESTS		
		49. SHIPPER -- RECEIVER DIFFERENCE		
		51. SHIPMENTS REPORTED TO NRC/DOE ON NRC/DOE 741 *(not listed elsewhere)*		
		TO: RIS		

NRC FORM 742 (MM-YYYY) (PREVIOUS EDITIONS ARE OBSOLETE) PRINTED ON RECYCLED PAPER

SECTION A (Continued) MATERIAL ACCOUNTABILITY

PC	SEQ		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
		54. SHIPMENTS -- MISC		
		58. DONATED MATERIAL -- TO U.S. GOVT BY OTHERS		
		59. DONATED MATERIAL -- TO OTHERS BY U.S. GOVT		
		65. ROUNDING ADJUSTMENT		
		71. DEGRADATION TO OTHER MATERIALS a. ICT		
		b. ICT		
		72. DECAY		
		73. FISSION AND TRANSMUTATION		
		74. NORMAL OPERATIONAL LOSSES/MEASURED DISCARDS		
		75. ACCIDENTAL LOSSES		
		76. APPROVED WRITE-OFFS		
		77. INVENTORY DIFFERENCE		
		80. ENDING INVENTORY -- U.S. GOVT OWNED		
A	5	81. ENDING INVENTORY -- NOT U.S. GOVT OWNED	**11243**	**1136**
		82. TOTAL *(lines 41-81)*		
		83. BIAS ADJUSTMENT		

SECTION B FOREIGN OBLIGATIONS

PC	SEQ	1. COUNTRY OF OBLIGATION	2. ELEMENT WEIGHT	3. ISOTOPE WEIGHT
		4. TOTAL WEIGHT		

SECTION C CERTIFICATION

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

SIGNATURE *(See instructions for provisions on confidentiality)*	TITLE	DATE
John Doe	MC&A Representative	12/31/2002

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 6b
Material Balance Report

DOE/NRC FORM 742U (MM-YYYY)
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150, Public Laws 83-703, 93-438, 95-91

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

MATERIAL BALANCE REPORT

APPROVED BY OMB: NO. 3150-0004 **EXPIRES: MM/DD/YYYY**

Estimated burden per response to comply with this mandatory collection request: 5 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0004), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME AND ADDRESS	2. LICENSE NUMBER(S)	3. REPORTING IDENTIFICATION SYMBOL (RIS)
Advanced Physics *123 Anywhere Road* *Commontown, ZA 11111*		ZZZ
	4. REPORT PERIOD (MM/DD/YYYY) FROM 01/01/2002 TO 12/31/2002	5. MATERIAL TYPE (Submit separate report for each type) E2

SECTION A **MATERIAL ACCOUNTABILITY**

PC	SEQ		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
		8. BEGINNING INVENTORY -- U.S. GOVT-OWNED		
A	1	9. BEGINNING INVENTORY -- NOT U.S. GOVT-OWNED	800.00	150.00
		RECEIPTS		
		11. PROCUREMENT FROM DOE RIS		
		FROM:		
		13. PROCUREMENT -- FOR THE ACCOUNT OF DOE		
		14. DOD RETURNS -- USE A		
		15. DOD RETURNS -- USE B		
		16. DOD RETURNS -- OTHER USES		
		21. PRODUCTION		
A	2	22. FROM OTHER MATERIALS a. ICT ED	74.00	14.00
		b. ICT		
		c. ICT		
		30. RECEIPTS REPORTED TO DOE/NRC ON DOE/NRC 741 *(not listed elsewhere)*		
		FROM: RIS		
		34. RECEIPTS -- MISC		
		37. PROCUREMENT BY OTHERS		
		38. DONATED MATERIAL -- FROM U.S. GOVT TO OTHERS		
		39. DONATED MATERIAL -- FROM OTHERS TO U.S. GOVT		
		40. TOTAL *(Lines 8-39)*		
		REMOVALS		
		41. EXPENDED IN SPACE PROGRAMS		
		42. SALES TO U.S. GOVT RIS TO: RIS		
		TO:		
		43. SALES TO OTHERS FOR THE ACCOUNT OF U.S. GOVT RIS		
		TO:		
		44. DOD -- USE A		
		45. DOD -- USE B		
		46. DOD -- OTHER USES		
		47. EXPENDED IN U.S. GOVT TESTS		
		48. ROUTINE TESTS		
		49. SHIPPER -- RECEIVER DIFFERENCE		
		51. SHIPMENTS REPORTED TO NRC/DOE ON NRC/DOE 741 *(not listed elsewhere)*		
		TO: RIS		

NRC FORM 742 (MM-YYYY) (PREVIOUS EDITIONS ARE OBSOLETE) PRINTED ON RECYCLED PAPER

SECTION A (Continued) MATERIAL ACCOUNTABILITY

PC	SEQ		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
		54. SHIPMENTS -- MISC		
		58. DONATED MATERIAL -- TO U.S. GOVT BY OTHERS		
		59. DONATED MATERIAL -- TO OTHERS BY U.S. GOVT		
		65. ROUNDING ADJUSTMENT		
		71. DEGRADATION TO OTHER MATERIALS a. ICT		
		b. ICT		
		72. DECAY		
		73. FISSION AND TRANSMUTATION		
		74. NORMAL OPERATIONAL LOSSES/MEASURED DISCARDS		
		75. ACCIDENTAL LOSSES		
		76. APPROVED WRITE-OFFS		
		77. INVENTORY DIFFERENCE		
		80. ENDING INVENTORY -- U.S. GOVT OWNED		
A	**3**	81. ENDING INVENTORY -- NOT U.S. GOVT OWNED	**874**	**164**
		82. TOTAL *(lines 41-81)*		
		83. BIAS ADJUSTMENT		

SECTION B FOREIGN OBLIGATIONS

PC	SEQ	1. COUNTRY OF OBLIGATION	2. ELEMENT WEIGHT	3. ISOTOPE WEIGHT
A	**4**	**CANADA (32)**	**320**	**20**
		4. TOTAL WEIGHT		

SECTION C CERTIFICATION

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

SIGNATURE *(See instructions for provisions on confidentiality)*	TITLE	DATE
John Doe	MC&A Representative	12/31/2002

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 6a, 6b

XML format:

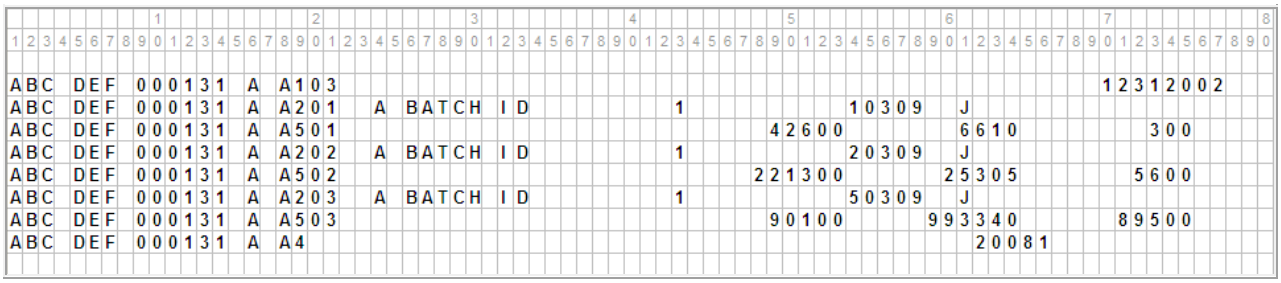
```
<MATERIALBALANCEREPORT>
 <MATERIALBALANCE
        RIS="ABC" STARTDATE="01/01/2002" ENDDATE="12/31/2002">
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="1" DATACODE="3"
                MATERIALBALANCECATEGORY="11">
                <ELEMENT
                        ELEMENTWEIGHT="11207.00" TYPEINVENTORYCHANGE=""
                        OTHERRIS="DEF" ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="50" ISOTOPEWEIGHT="1112.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="2" DATACODE="3"
                MATERIALBALANCECATEGORY ="30">
                <ELEMENT
                        ELEMENTWEIGHT="38.00" TYPEINVENTORYCHANGE=""
                        OTHERRIS="GHI" ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="50" ISOTOPEWEIGHT="25.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="3" DATACODE="4"
                MATERIALBALANCECATEGORY ="46">
                <ELEMENT
                        ELEMENTWEIGHT="2.00" TYPEINVENTORYCHANGE="" OTHERRIS=""
                        ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="50" ISOTOPEWEIGHT="1.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="4" DATACODE="4"
                MATERIALBALANCECATEGORY ="81">
                <ELEMENT
                        ELEMENTWEIGHT="11243.00" TYPEINVENTORYCHANGE="" OTHERRIS=""
                        ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="50" ISOTOPEWEIGHT="1136.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
 </MATERIALBALANCE>
 <MATERIALBALANCE
        RIS="ZZZ" STARTDATE="01/01/2002" ENDDATE="12/31/2002">
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="1" DATACODE="3"
                MATERIALBALANCECATEGORY ="09">
                <ELEMENT
                        ELEMENTWEIGHT="800.00" TYPEINVENTORYCHANGE="" OTHERRIS=""
                        ENTRYSTATUS="N">
```

```
                    <ISOTOPE
                        MATERIALTYPE="E2" ISOTOPEWEIGHT="150.00">
                    </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="2" DATACODE="3"
                MATERIALBALANCECATEGORY ="22">
                <ELEMENT
                        ELEMENTWEIGHT="74.00" TYPEINVENTORYCHANGE="34" OTHERRIS="">
                        <ISOTOPE
                                MATERIALTYPE="E2" ISOTOPEWEIGHT="14.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="3" DATACODE="4"
                MATERIALBALANCECATEGORY ="81">
                <ELEMENT
                        ELEMENTWEIGHT="874.00" TYPEINVENTORYCHANGE="" OTHERRIS=""
                        ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="E2" ISOTOPEWEIGHT="164.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL >
        <MATERIAL
                PROCESSCODE="A" SEQUENCENUMBER="4" DATACODE="4"
                MATERIALBALANCECATEGORY ="86">
                <ELEMENT
                        ELEMENTWEIGHT="320.00" TYPEINVENTORYCHANGE="" OTHERRIS=""
                        ENTRYSTATUS="N">
                        <ISOTOPE
                                MATERIALTYPE="E2" ISOTOPEWEIGHT="20.00">
                        </ISOTOPE>
                </ELEMENT>
        </MATERIAL>
  </MATERIALBALANCE>
</MATERIALBALANCEREPORT>
```

APPENDIX C
80 COLUMN REPORTING

80 Column File - Transaction

An example of a transaction submission in an 80 column file format document is shown below. Additional examples are shown in Appendix B along with the corresponding DOE/NRC forms. Note that gridlines and the numbering structure at the top are not a part of the data submission. They are provided for demonstration purposes only



Header Information (Data Code 1)

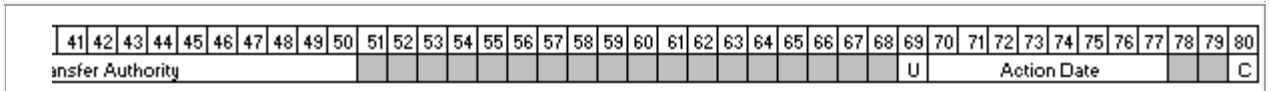
Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 1
Number of Data Lines	10	20	21	Num(2)	✓	Right justified
TI Code/Nature of Transaction	11	22	22	Char(1)		
RIS For Account	12	23	26	Char(4)		Left justified
RIS To Account	13	27	30	Char(4)		Left justified
Transfer Authority	14	34	50	Char(17)		Left justified
IAEA UK Reportable[23]	23c	69	69	Char(1)		
Action Date	22	70	77	Date		MMDDYYYY

Visual representation of field placement in 80 Column File formatting of transaction header information.

741A Header Information (Data Code 1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transfer Num						Co	PC		AC	DC	[#Line]		T	RIS For Acct				RIS To Acct													Trar

[23] The IAEA UK reportable indication is only required for transactions involving United Kingdom facilities. Reporting 'R' indicates that the UK data is reportable to the IAEA. Reporting 'N' indicates that the UK data is not reportable to the IAEA. Leave this field blank for data that does not involve the United Kingdom facilities.

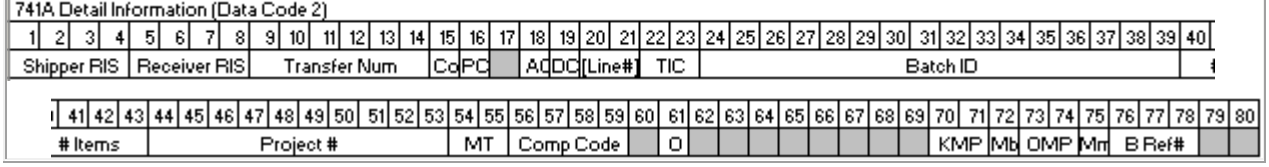


Detail Information (Data Code 2)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A.
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 2
Line Number	26/27 b	20	21	Num(2)	✓	Right justified
Type of Inventory Change	26/27 c	22	23	Char(2)		
Batch Name/Identification	26/27 d	24	39	Char(16)		Left justified All Caps
Number of Items	26/27 e	40	43	Num(4)		Right justified
Project Number[24]	26/27 f	44	53	Char(10)		Left justified
Material Type	26/27 g	54	55	Char(2)		Left justified
Composition-Facility Code	26/27 h	56	59	Char(4)		Left justified
Owner Code	26/27 i	61	61	Char(1)		
Key Measurement Point	26/27 j	70	71	Char(2)		Left justified
Measurement Basis	26/27 k1	72	72	Char(1)		
Other Measurement Point	26/27 k2	73	74	Char(2)		Left justified
Measurement Method	26/27 k3	75	75	Char(1)		
Back Reference Number[25]	26/27 a	76	78	Char(3)		Zero fill blanks

Note: If <u>both</u> the element weight and isotope weight are zero, there is no need to submit a data line for data code 2 and 5.

Visual representation of field placement in 80 column file formatting of transaction detail information.



[24] Project numbers are reported only for government owned material.
[25] Back Reference Number; the first character is the correction identifier. The second and third characters are the line number referenced. When reported, insert zeros for blank values.

Quantitative Detail Information (Data Code 5)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justifiede
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A.
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 5
Line Number	26/27 b	20	21	Num(2)	✓	Right justified
Gross Weight	26/27 l	22	26	Num(5)		Right justified
Net Weight	26/27m	27	34	Num(8)		Right justified
Element Weight	26/27 n	43	53	Num(11,2)	✓[26]	Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						
Element Limit of Error	26/27 o	54	58	Num(5)		Right justified
Weight Percent Isotope/Parts Per Million	26/27 p	59	64	Num(6,4)[27]		Right justified
The value can contain a decimal point.						
Isotope Weight	26/27 q	65	75	Num(11,2)	✓[16]	Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						
Isotope Limit of Error	26/27 r	76	80	Num(5)		Right justified

Note: If <u>both</u> the element weight and isotope weight are zero, there is no need to submit a data line for data code 2 and 5.

Visual representation of field placement in 80 Column File formatting of transaction detail information.

741A Detail Information (Data Code 5)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transaction Num						Co	PC		AC	DC	[Line#]		Gross Weight					Net Weight													

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		Element Weight											Ele Limit of Error					Weight %						Isotope Weight											Iso Limit of Error				

Import/Export Detail Information (Data Code 3)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified

[26] Element or Isotope weight may be essential to successful file import depending on the specified material type.
[27] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

						Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A.
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 3
License Number (Import/Export)	15	22	31	Char(10)		Left justified

Note: if no applicable license number is reported, there is no need to submit a data line for data code 3.

Visual representation of field placement in 80 Column File formatting of transaction detail information.

741A Transportation Information (Data Code 3)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transaction Num						Co	PC		AC	DC			License Number																			

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

Packaging Detail Information (Data Code 4)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A.
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 4
Total Gross Weight	24	57	66	Num(10)		Right justified Whole number
Total Volume[28]	25	67	75	Num(9)		Right justified Whole number

Note: if total gross weight and/or total volume is not reported, there is no need to submit a data line for data code 4.

Visual representation of field placement in 80 Column File formatting of transaction package information.

741A Packaging Information (Data Code 4)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transaction Num						Co	PC		AC	DC																						

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
																Total Gross Weight										Total Volume													

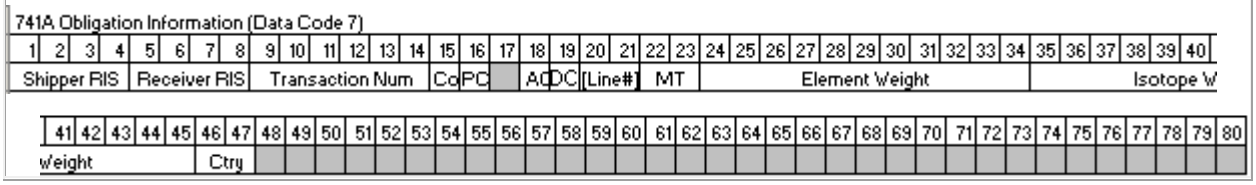
[28] Report total volume in cubic feet for material transferred to or from a nuclear waste management facility.

Obligation Information (Data Code 7)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A.
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 7
Line Number	17	20	21	Num(2)		Right justified
Material Type	19	22	23	Char(2)		Left justified
Obligated Element Weight	20	24	34	Num(11,2)	✓	Right justified
	The value can contain a decimal point.			*Only XML format accepts 3 decimal place values.*		
Obligated Isotope Weight[29]	21	35	45	Num(11,2)		Right justified
						The value can contain a decimal point.
Country[30]	18	46	47	Char(2)		Left justified

Note: if obligated data is not reported, there is no need to submit a data line for data code 7.

Visual representation of field placement in 80 Column File formatting of Transaction Obligation information.



Concise Note Information DOE/NRC Form 740M (Data Code 6)

Field Description	***740M***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	5a	1	4	Char(4)	✓	Left justified
Receiver RIS	5b	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	5c	9	14	Char(6)	✓	Right justified Zero fill blanks
Correction Number (Change Digit)	5d	15	15	Char(1)		
Process Code	5e	16	16	Char(1)	✓	See Appendix A.
Action Code	5f	18	18	Char(1)	✓	
Data Code	-	19	19	Char(1)	✓	Value is 6
Entry Reference	7b	24	39	Char(16)	✓	Left justified

[29] Obligated Isotope Weight is required for Enriched Uranium only.
[30] Call the NMMSS or go to NMMSS.com for the latest list of obligation country.

Line Number	7a	40	41	Char(2)	✓	Left justified Zero fill blanks
Concise Note Text	7c	42	80	Char(39)	✓	Left justified

Note: if concise note information is not reported, there is no need to submit a data line for data code 6.

Visual representation of field placement in 80 Column File formatting of transaction concise note information.

740M Concise Note (Data Code 6)

1 2 3 4	5 6 7 8	9 10 11 12 13 14	15	16	17	18	19	20 21 22 23	24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39	40 41
Shipper RIS	Receiver RIS	Transaction Num	Co	PC		AC	DC		Entry Reference	Line #

42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
Text of Concise Note

80 Column File Formatting - Inventory

An example of an inventory submission in an 80 column file format document is shown below. Additional examples are shown in Appendix B along with the corresponding DOE/NRC form. Note that gridlines and the numbering structure at the top are not a part of the data submission. They are provided for demonstration purposes only.

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

112312002ABC E1F02          9900         1800                      J     A000001
112312002ABC 20899          9900         1800                      J     A000002
112312002ABC 81771          4500                                   J     A000003
112312002ABC 81771          6500                                   J     A000004
112312002ABC 81899         11000                                   J     A000005
```

Physical Inventory Listing Header Information (Data Code 1)

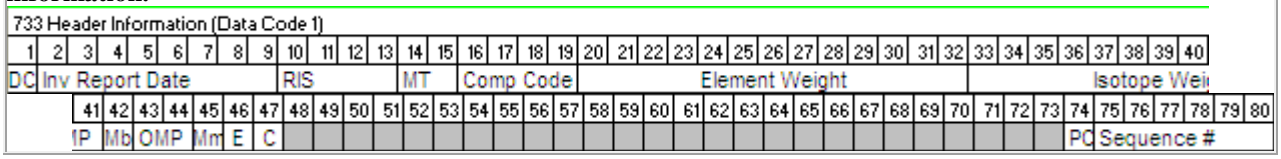
Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 1
Inventory Report Date	3	2	9	Date	✓	MMDDYYYY
RIS	2	10	13	Char(4)	✓	Left justified
Material Type Code	5a	14	15	Char(2)	✓	Left justified
Composition-Facility Code[31]	5b	16	19	Char(4)	✓	Left justified
Element Weight	5c	20	32	Num(13,2)	✓[32]	Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						
Isotope Weight	5d	33	45	Num(13,2)	✓[28]	Right justified
The value can contain a decimal point.						
Project Number[33]	5e	46	55	Char(10)		Left justified
Scrap Program	5f	56	56	Char(1)		Leave blank
Weight Percent Isotope/Parts Per Million	5g	61	66	Num(6,4) [34]		Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						

[31] For total lines, this field will always contain "899"
[32] Element or Isotope weight may be essential to successful file import depending on the specified material type.
[33] Project numbers are reported only for government owned material.
[34] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

Owner Code	5h	68	68	Char(1)		
Process Code	5q	74	74	Char(1)	✓	See Appendix A.
Sequence Number Code[35]	5i	75	80	Num(6)	✓	Right justified

Note: If both the element weight and isotope weight are zero, there is no need to submit a data line for data code 1 or 2.

Visual representations of field placement in 80 Column file formatting physical inventory listing header information.



Physical Inventory Listing Detail Information (Data Code 2)

Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 2
Inventory Report Date	3	2	9	Date	✓	MMDDYYYY
RIS	2	10	13	Char(4)	✓	Left justified
Material Type	5a	14	15	Char(2)	✓	Left justified
Composition-Facility Code[36]	5b	16	19	Char(4)	✓	Left justified
Batch Identification	5j	20	35	Char(16)		Left justified All Caps
Number of Items	5k	36	39	Num(4)		Right justified
Key Measurement Point	5l	40	41	Char(2)		Left justified
Measurement Basis	5m	42	42	Char(1)		
Other Measurement Point	5m	43	44	Char(2)		Left justified
Measurement Method	5m	45	45	Char(1)		
Entry Status	5n	46	46	Char(1)		
Process Code	5q	74	74	Char(1)	✓	See Appendix A.
Sequence Number[37]	5i	76	80	Num(5)	✓	Right justified

Note: If both the element weight and isotope weight are zero, there is no need to submit a data line for data code 1 or 2.

[35] Sequence number should begin at one for the entire inventory or each material type group (Generic MT 20 includes MT 21 – 39) and should be consecutively numbered including the total line (composition code 899).
[36] For total lines, this field will always contain "899"
[37] Sequence number should begin at one for the entire inventory or each material type and the pairs of lines (Data Type Code 1 and 2) should be consecutively numbered including the total line (composition code 899). The sequence number for a Data Type Code 1 line should be coded for the corresponding Data Type Code 2 line.

Visual representation of field placement in 80 Column file formatting of inventory detail information.

733A Detail Information (Data Code 2) [sites selected for IAEA]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DC	Inv Report Date								RIS				MT		Comp Code				Batch Identification																# Items				KMI

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
1P	Mb	OMP		Mm	E	C																											PC	Sequence #					

Physical Inventory Listing Additional Information (Data Code 3)

Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 1
Inventory Report Date	3	2	9	Date	✓	MMDDYYYY
RIS	2	10	13	Char(4)	✓	Left justified
Material Type Code	5a	14	15	Char(2)	✓	Left justified
Composition-Facility Code[38]	5b	16	19	Char(4)	✓	Left justified
Location of Item	5o	20	50	Char(30)		
Site MBA	5p	51	73	Char(23)		

Visual representation of field placement in 80 Column file formatting of inventory detail information.

733A Detail Information (Data Code 3) [Location & Site MBA]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DC	Inv Report Date								RIS				MT		Comp Code				Location																				

80 Column File Formatting – Material Balance

Examples of material balance submissions in an 80 column file format document are shown below. For corresponding 742 forms showing these examples refer to Appendix B. Note that gridlines and the numbering structure at the top are not a part of the data submission.

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

3ABC 200101200212312002      1120700       11120011DEF   N               A000001
3ABC 200101200212312002         3800         250030GHI   N               A000002
4ABC 200101200212312002          200          10046      N               A000003
4ABC 200101200212312002      1124300       11360081      N               A000004
```

Material Balance Report Detail Information (Data Code 3 & 4)

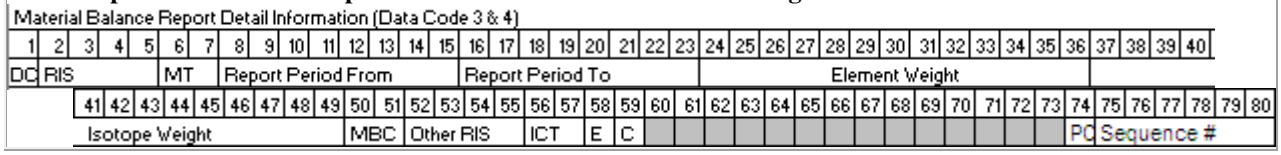
Field Description	***742***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 3 (Receipts) or 4 (Removals)
RIS	3	2	5	Char(4)	✓	Left justified
Material Type	5	6	7	Char(2)	✓	Left justified
Report Period From	4	8	15	Date	✓	MMDDYYYY
Report Period To	4	16	23	Date	✓	MMDDYYYY

[38] For total lines, this field will always contain "899"

Element Weight	Sec A column A Sec B Column 2	24	36	Num(13,2)	✓[39]	Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						
Isotope Weight	Sec A column B Sec B Column 3	37	49	Num(13,2)	✓[39]	Right justified
The value can contain a decimal point. Only XML format accepts 3 decimal place values.						
Material Balance Category[40]	Sec A Row # Sec B column 1	50	51	Char(2)		Right justified Zero fill blanks
Other RIS	line 11,30, 42,43, & 51	52	55	Char(4)		Left justified
Inventory Change Type (ICT)	line 22 & 71	56	57	Char(2)		Left justified
Entry Status	-	58	58	Char(1)		
Process Code	Sec A & B PC	74	74	Char(1)	✓	See Appendix A.
Sequence Number[41]	Sec A & B SEQ	75	80	Num(6)	✓	Right justified

Note: If both the element weight and isotope weight are zero, there is no need to submit a data line for data code 1.

Visual representation of field placement in 80 Column File formatting of material balance detail information.



[39] Element or Isotope weight may be essential to successful file import depending on the specified material type.
[40] Call the NMMSS or go to NMMSS.com for the latest list of Material Balance Categories codes related to Obligations (Section B)
[41] Sequence number should begin at one for the entire material balance per material type and should be consecutively numbered.

APPENDIX D
TRANSACTION SCHEMA

Transaction Schema Version 2

```
<?xml version="2.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.4 U (http://www.xmlspy.com) by Rick Edwards
(Westinghouse Savannah River Co) -->
<!--W3C Schema generated by XML Spy v4.4 U (http://www.xmlspy.com)-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">
      <xs:element name="TRANSACTIONS">
            <xs:complexType>
                  <xs:sequence>
                        <xs:element name="SHIPMENT" maxOccurs="unbounded">
                              <xs:complexType>
                                    <xs:sequence>
                                          <xs:element name="CONCISENOTE"
minOccurs="0" maxOccurs="unbounded">
                                                <xs:complexType>
                                                      <xs:attribute
name="LINENUMBER" type="xs:int" use="required">
                                                            <xs:annotation>

      <xs:documentation source="Comment LINENUMBER">Integer, non-
negative</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:attribute
name="ENTRYREFERENCE" type="xs:string" use="required">
                                                            <xs:annotation>

      <xs:documentation source="Comment ENTRYREFERENCE">20 Alphanumeric
Characters</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:attribute
name="TEXTOFCONCISENOTE" type="xs:string" use="required">
                                                            <xs:annotation>

      <xs:documentation source="Comment TEXTOFCONCISENOTE">60 Alphanumeric
Characters</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:anyAttribute/>
                                                </xs:complexType>
                                          </xs:element>
                                          <xs:element name="OBLIGATION"
minOccurs="0" maxOccurs="unbounded">
                                                <xs:complexType>
                                                      <xs:sequence>
                                                            <xs:element
name="MATERIAL">

      <xs:complexType>

      <xs:sequence>
```

```
      <xs:element name="ELEMENT">

      <xs:complexType>

            <xs:sequence>

                  <xs:element name="ISOTOPE">

                        <xs:complexType>

                              <xs:attribute name="MATERIALTYPE"
type="xs:string" use="required">

                                    <xs:annotation>

                                          <xs:documentation source="Comment
MATERIALTYPE">2 Alphanumeric Characters
Validated by MaterialType Authority Reference Table
</xs:documentation>

                                    </xs:annotation>

                              </xs:attribute>

                              <xs:attribute name="ISOTOPEWEIGHT"
type="xs:decimal" use="required">

                                    <xs:annotation>

                                          <xs:documentation source="Comment
ISOTOPEWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
      decimal point is not implied                        </xs:documentation>

                                    </xs:annotation>

                              </xs:attribute>

                              <xs:anyAttribute/>

                        </xs:complexType>

                  </xs:element>

            </xs:sequence>

            <xs:attribute name="ELEMENTWEIGHT" type="xs:decimal"
use="required">

                  <xs:annotation>

                        <xs:documentation source="Comment
ELEMENTWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
      decimal point is not implied</xs:documentation>

                  </xs:annotation>
```

```
            </xs:attribute>

            <xs:anyAttribute/>

      </xs:complexType>

      </xs:element>

      </xs:sequence>

      <xs:attribute name="LINENUMBER" type="xs:int" use="required">

      <xs:annotation>

      <xs:documentation source="Comment LINENUMBER">Integer, non-
negative</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="COUNTRYCODE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment COUNTRYCODE">2 Alpha Character
Validated by CountryCode section of StaticData Authority Reference Table
</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:anyAttribute/>

      </xs:complexType>
                                                            </xs:element>
                                                      </xs:sequence>
                                                      <xs:anyAttribute/>
                                                </xs:complexType>
                                          </xs:element>
                                          <xs:element name="MATERIAL"
minOccurs="0" maxOccurs="unbounded">
                                                <xs:complexType>
                                                      <xs:sequence>
                                                            <xs:element
name="ELEMENT">

      <xs:complexType>

      <xs:sequence>

      <xs:element name="ISOTOPE">

      <xs:complexType>

            <xs:attribute name="MATERIALTYPE" type="xs:string"
use="required">
```

```
                    <xs:annotation>

                        <xs:documentation source="Comment MATERIALTYPE">2
Alphanumeric Characters
Validated by MaterialType Authority Reference Table</xs:documentation>

                    </xs:annotation>

                </xs:attribute>

                <xs:attribute name="WEIGHTPERCENT" type="xs:decimal"
use="optional">

                    <xs:annotation>

                        <xs:documentation source="Comment
WEIGHTPERCENT">Numeric (16,6)
16 digits of precision and up to 6 decimal places
Decimal point is not implied</xs:documentation>

                    </xs:annotation>

                </xs:attribute>

                <xs:attribute name="ISOTOPEWEIGHT" type="xs:decimal"
use="required">

                    <xs:annotation>

                        <xs:documentation source="Comment
ISOTOPEWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied</xs:documentation>

                    </xs:annotation>

                </xs:attribute>

                <xs:attribute name="ISOTOPELOE" type="xs:decimal" use="optional">

                    <xs:annotation>

                        <xs:documentation source="Comment
ISOTOPELOE">Integer</xs:documentation>

                    </xs:annotation>

                </xs:attribute>

                <xs:anyAttribute/>

            </xs:complexType>

            </xs:element>

            </xs:sequence>

            <xs:attribute name="ELEMENTWEIGHT" type="xs:decimal" use="required">
```

```
      <xs:annotation>

      <xs:documentation source="Comment ELEMENTWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="ELEMENTLOE" type="xs:decimal" use="optional">

      <xs:annotation>

      <xs:documentation source="Comment
ELEMENTLOE">Integer</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:anyAttribute/>

      </xs:complexType>
                                                            </xs:element>
                                                      </xs:sequence>
                                                      <xs:attribute
name="LINENUMBER" type="xs:int" use="required">
                                                            <xs:annotation>

      <xs:documentation source="Comment LINENUMBER">Integer, non-
negative</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:attribute
name="TYPEINVENTORYCHANGE" type="xs:string" use="optional">
                                                            <xs:annotation>

      <xs:documentation source="Comment TYPEINVENTORYCHANGE">2 Alphanumeric
Characters
Validated by list of Codes when required</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:attribute
name="BATCH" type="xs:string" use="optional">
                                                            <xs:annotation>

      <xs:documentation source="Comment BATCH">16 Alphanumeric
Characters</xs:documentation>
                                                            </xs:annotation>
                                                      </xs:attribute>
                                                      <xs:attribute
name="NUMBEROFITEMS" type="xs:int" use="required">
                                                            <xs:annotation>

      <xs:documentation source="Comment
NUMBEROFITEMS">Integer</xs:documentation>
```

```
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="OWNER" type="xs:string" use="required">
                                                    <xs:annotation>

      <xs:documentation source="Comment OWNER">1 Alpha Character
Validated by OwnerCode section of StaticData Authority Reference Table
Also called Owner Code</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="PROJECT" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment PROJECT">10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Also called Project Number</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="COEILINENUMBER" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment COEILINENUMBER">4 Alphanumeric
Characters
Validated by CompCode Authority Reference Table
Also called Comp Code
IAEA reporting facilities should put their IAEACompCode or IAEAFacililtyCode
in this field, NMMSS will translate during the import
process</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="GROSSWEIGHT" type="xs:decimal" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment GROSSWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="NETWEIGHT" type="xs:decimal" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment NETWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="KEYMEASUREPOINT" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment KEYMEASUREPOINT">2 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference Table
</xs:documentation>
```

```
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="MEASUREBASIS" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment MEASUREBASIS">1 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference Table
</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="OTHERMEASUREPOINT" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment OTHERMEASUREPOINT">2 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference Table
</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="MEASUREMETHOD" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment MEASUREMETHOD">1 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference Table
</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="TOPROJECT" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment TOPROJECT">10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Only reportable with P ActionCode Project Transfer
Also called ToProject Number
</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="TOCOEILINENUMBER" type="xs:string" use="optional">
                                                    <xs:annotation>

      <xs:documentation source="Comment TOCOEILINENUMBER">4 Alphanumeric
Characters
Validated by CompCode Authority Reference Table
Only reportable with P ActionCode Project Transfer
Also called To Comp Code
</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="BACKREFLINENUMBER" type="xs:string" use="optional">
                                                    <xs:annotation>
```

```
      <xs:documentation source="Comment BACKREFLINENUMBER">3 Alphanumeric
Characters
1st Character is the BackReferenceChangeDigit
2nd and 3rd Characters are BackReferenceLinenumber
</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:anyAttribute/>
                                                </xs:complexType>
                                            </xs:element>
                                        </xs:sequence>
                                        <xs:attribute name="SHIPPERRIS"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment SHIPPERRIS">4 Alphanumeric Characters
Validated by RIS Authority Reference Table</xs:documentation>
                                            </xs:annotation>
                                        </xs:attribute>
                                        <xs:attribute name="RECEIVERRIS"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment RECEIVERRIS">4 Alphanumeric Characters
Validated by RIS Authority Reference Table</xs:documentation>
                                            </xs:annotation>
                                        </xs:attribute>
                                        <xs:attribute name="TRANSFERNUMBER"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment TRANSFERNUMBER">8 Alphanumeric Characters
If the datatype is integer then the number will be left padded with zeros
during the import process</xs:documentation>
                                            </xs:annotation>
                                        </xs:attribute>
                                        <xs:attribute name="CORRECTION"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment CORRECTION">1 Alphanumeric Character</xs:documentation>
                                            </xs:annotation>
                                        </xs:attribute>
                                        <xs:attribute name="PROCESSCODE"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment PROCESSCODE">1 Alpha Character
Accepted values A,C or D</xs:documentation>
                                            </xs:annotation>
                                        </xs:attribute>
                                        <xs:attribute name="ACTIONCODE"
type="xs:string" use="required">
                                            <xs:annotation>
                                                <xs:documentation
source="Comment ACTIONCODE">1 Alpha Character
Validated by ActionCode section of StaticData Authority Reference
Table</xs:documentation>
```

```
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="NUMBEROFLINES"
type="xs:int" use="required">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment NUMBEROFLINES">Integer, non-negative</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="NATUREOFTRANSACTION"
type="xs:string" use="optional">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment NATUREOFTRANSACTION">1 Alpha Character
Validated by TICode section of StaticData Authority Reference Table if
required
Also called TI Code</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="SHIPPEDFORRIS"
type="xs:string" use="optional">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment SHIPPEDFORRIS">4 Alphanumeric Characters
Validated by RIS Authority Reference Table if required
Also called ForAccount</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="SHIPPEDTORIS"
type="xs:string" use="optional">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment SHIPPEDTORIS">4 Alphanumeric Characters
Validated by RIS Authority Reference Table if required
Also called ToAccount</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="TRANSFERAUTHORITY"
type="xs:string" use="optional">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment TRANSFERAUTHORITY">17 Alphanumeric Characters
No validation performed</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="UKFLAG"
type="xs:string" use="optional">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment UKFLAG">1 Alpha Character
Validated by SpecialIAEACode section of StaticData Authority Reference Table,
acceptable values are blank, N or R
Also called SpecialIAEACode</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="ACTIONDATE"
use="required">
                                        <xs:annotation>
```

```
                                                <xs:documentation
source="Comment ACTIONDATE">Date in mm/dd/yyyy format
Also called Activity Date</xs:documentation>
                                          </xs:annotation>
                                          <xs:simpleType>
                                                <xs:restriction
base="xs:string">
                                                      <xs:pattern
value="\d{2}/\d{2}/\d{4}"/>
                                                </xs:restriction>
                                          </xs:simpleType>
                                    </xs:attribute>
                                    <xs:attribute name="LICENSENUMBER"
type="xs:string" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment LICENSENUMBER">10 Alphanumeric Characters
Validated by INMTS Authority Reference Table if required</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="PORTOFENTRY"
type="xs:string" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment PORTOFENTRY">4 Alphanumeric Characters
Discontinued 10/2003</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="TOTALGROSSWEIGHT"
type="xs:int" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment TOTALGROSSWEIGHT">Integer, non-negative
Also know as GrossWeight</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="TOTALVOLUME"
type="xs:int" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment TOTALVOLUME">Integer, non-negative</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="SEALEDSOURCE"
type="xs:string" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment SEALEDSOURCE">10 Alphanumeric Characters
No validation occurs at this time</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="TOTRANSFERAUTHORITY"
type="xs:string" use="optional">
                                          <xs:annotation>
                                                <xs:documentation
source="Comment TOTRANSFERAUTHORITY">17 Alphanumeric Characters
No longer validated, was used for Contract Transfers</xs:documentation>
                                          </xs:annotation>
                                    </xs:attribute>
```

```
                                        <xs:anyAttribute/>
                                    </xs:complexType>
                                </xs:element>
                            </xs:sequence>
                            <xs:attribute name="VERSION" type="xs:int" use="required"
fixed="2"/>
                        </xs:complexType>
                    </xs:element>
</xs:schema>
```

APPENDIX E
INVENTORY SCHEMA

Inventory Schema Version 2

```
<?xml version="2.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.4 U (http://www.xmlspy.com) by Rick Edwards
(Westinghouse Savannah River Co) -->
<!--W3C Schema generated by XML Spy v4.4 U (http://www.xmlspy.com)-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">
      <xs:element name="PHYSICALINVENTORY">
            <xs:complexType>
                  <xs:sequence>
                        <xs:element name="INVENTORY">
                              <xs:complexType>
                                    <xs:sequence>
                                          <xs:element name="MATERIAL">
                                                <xs:complexType>
                                                      <xs:sequence>
                                                            <xs:element
name="CONCISENOTE">

      <xs:complexType>

      <xs:attribute name="PROCESSCODE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment PROCESSCODE">1 Alpha Character
Accepted values A,C or D  </xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="LINENUMBER" type="xs:int" use="required">

      <xs:annotation>

      <xs:documentation source="Comment LINENUMBER">Integer, non-
negative</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="ENTRYREFERENCE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment ENTRYREFERENCE">20 Alphanumeric
Characters</xs:documentation>

      </xs:annotation>
```

```
      </xs:attribute>

      <xs:attribute name="TEXTOFCONCISENOTE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment TEXTOFCONCISENOTE">60 Alphanumeric
Characters</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      </xs:complexType>
                                                              </xs:element>
                                                              <xs:element
name="ELEMENT">

      <xs:complexType>

      <xs:sequence>

      <xs:element name="ISOTOPE">

      <xs:complexType>

            <xs:attribute name="MATERIALTYPE" type="xs:byte" use="required">

                  <xs:annotation>

                        <xs:documentation source="Comment MATERIALTYPE">2
Alphanumeric Characters
Validated by MaterialType Authority Reference Table
</xs:documentation>

                  </xs:annotation>

            </xs:attribute>

            <xs:attribute name="WEIGHTPERCENT" type="xs:decimal"
use="required">

                  <xs:annotation>

                        <xs:documentation source="Comment
WEIGHTPERCENT">Numeric (16,6)
16 digits of precision and up to 6 decimal places
Decimal point is not implied                  </xs:documentation>

                  </xs:annotation>

            </xs:attribute>

            <xs:attribute name="ISOTOPEWEIGHT" type="xs:decimal"
use="required">

                  <xs:annotation>
```

```
                        <xs:documentation source="Comment
ISOTOPEWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
                    </xs:documentation>

                   </xs:annotation>

             </xs:attribute>

      </xs:complexType>

      </xs:element>

      </xs:sequence>

      <xs:attribute name="ELEMENTWEIGHT" type="xs:decimal" use="required">

      <xs:annotation>

      <xs:documentation source="Comment ELEMENTWEIGHT">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied
</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      </xs:complexType>
                                                        </xs:element>
                                                  </xs:sequence>
                                                  <xs:attribute
name="PROCESSCODE" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment PROCESSCODE">1 Alpha Character
Accepted values A,C or D</xs:documentation>
                                                        </xs:annotation>
                                                  </xs:attribute>
                                                  <xs:attribute
name="SEQUENCENUMBER" type="xs:boolean" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment SEQUENCENUMBER">Integer, non-
negative</xs:documentation>
                                                        </xs:annotation>
                                                  </xs:attribute>
                                                  <xs:attribute
name="BATCH" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment BATCH">16 Alphanumeric Characters
</xs:documentation>
                                                        </xs:annotation>
                                                  </xs:attribute>
                                                  <xs:attribute
name="NUMBEROFITEMS" type="xs:boolean" use="required">
```

```
                                                        <xs:annotation>

      <xs:documentation source="Comment
NUMBEROFITEMS">Integer</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="OWNER" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment OWNER">1 Alpha Character
Validated by OwnerCode section of StaticData Authority Reference Table
Also called Owner Code</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="PROJECT" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment PROJECT">10 Alphanumeric Characters
Validated by ProjectNumber Authority Reference Table if required
Also called Project Number</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="COEILINENUMBER" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment COEILINENUMBER">4 Alphanumeric
Characters
Validated by CompCode Authority Reference Table
Also called Comp Code
IAEA reporting facilities should put their IAEACompCode or IAEAFacililtyCode
in this field NMMSS will translate during the import process
</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="KEYMEASUREPOINT" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment KEYMEASUREPOINT">2 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference
Table</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="MEASUREBASIS" type="xs:string" use="required">
                                                        <xs:annotation>

      <xs:documentation source="Comment MEASUREBASIS">1 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference
Table</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:attribute>
                                                    <xs:attribute
name="OTHERMEASUREPOINT" type="xs:string" use="required">
```

```
                                                                    <xs:annotation>

      <xs:documentation source="Comment OTHERMEASUREPOINT">2 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference
Table</xs:documentation>
                                                                    </xs:annotation>
                                                              </xs:attribute>
                                                              <xs:attribute
name="MEASUREMETHOD" type="xs:string" use="required">
                                                                    <xs:annotation>

      <xs:documentation source="Comment MEASUREMETHOD">1 Alphanumeric
Characters
Validated by IAEAFacilityAttachment Authority Reference
Table</xs:documentation>
                                                                    </xs:annotation>
                                                              </xs:attribute>
                                                              <xs:attribute
name="LOCATION" type="xs:string" use="required">
                                                                    <xs:annotation>

      <xs:documentation source="Comment LOCATION">20 Alphanumeric Characters
No validation occurs at this time</xs:documentation>
                                                                    </xs:annotation>
                                                              </xs:attribute>
                                                              <xs:attribute
name="SITEMBA" type="xs:string" use="required">
                                                                    <xs:annotation>

      <xs:documentation source="Comment SITEMBA">20 Alphanumeric Characters
No validation occurs at this time</xs:documentation>
                                                                    </xs:annotation>
                                                              </xs:attribute>
                                                        </xs:complexType>
                                                  </xs:element>
                                            </xs:sequence>
                                            <xs:attribute name="RIS" type="xs:string"
use="required">
                                                  <xs:annotation>
                                                        <xs:documentation
source="Comment RIS">4 Alphanumeric Characters
Validated by RIS Authority Reference Table</xs:documentation>
                                                  </xs:annotation>
                                            </xs:attribute>
                                            <xs:attribute name="DATE"
type="xs:string" use="required">
                                                  <xs:annotation>
                                                        <xs:documentation
source="Comment DATE">Date in mm/dd/yyyy format
Also called Inventory Report Date</xs:documentation>
                                                  </xs:annotation>
                                            </xs:attribute>
                                      </xs:complexType>
                                </xs:element>
                          </xs:sequence>
                          <xs:attribute name="VERSION" type="xs:byte"
use="required"/>
                    </xs:complexType>
```

```
      </xs:element>
</xs:schema>
```

APPENDIX F
MATERIAL BALANCE SCHEMA

Material Balance Schema Version 2

```
<?xml version="2.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.4 U (http://www.xmlspy.com) by Rick Edwards
(Westinghouse Savannah River Co) -->
<!--W3C Schema generated by XML Spy v4.4 U (http://www.xmlspy.com)-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">
      <xs:element name="MATERIALBALANCEREPORT">
            <xs:complexType>
                  <xs:sequence>
                        <xs:element name="MATERIALBALANCE">
                              <xs:complexType>
                                    <xs:sequence>
                                          <xs:element name="MATERIAL">
                                                <xs:complexType>
                                                      <xs:sequence>
                                                            <xs:element
name="CONCISENOTE">

      <xs:complexType>

      <xs:attribute name="PROCESSCODE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">1 Alpha Character
Accepted values A,C or D</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="LINENUMBER" type="xs:int" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">Integer, non-
negative</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="ENTRYREFERENCE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">20 Alphanumeric
Characters</xs:documentation>

      </xs:annotation>

      </xs:attribute>
```

```
      <xs:attribute name="TEXTOFCONCISENOTE" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">60 Alphanumeric
Characters</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      </xs:complexType>
                                                                  </xs:element>
                                                                  <xs:element
name="ELEMENT">

      <xs:complexType>

      <xs:sequence>

      <xs:element name="ISOTOPE">

      <xs:complexType>

            <xs:attribute name="MATERIALTYPE" type="xs:string"
use="required">

                  <xs:annotation>

                        <xs:documentation source="Comment MATERIALTYPE">2
Alphanumeric Characters
Validated by MaterialType Authority Reference Table
</xs:documentation>

                  </xs:annotation>

            </xs:attribute>

            <xs:attribute name="ISOTOPEWEIGHT" type="xs:decimal"
use="required">

                  <xs:annotation>

                        <xs:documentation source="Comment
MATERIALTYPE">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied            </xs:documentation>

                  </xs:annotation>

            </xs:attribute>

      </xs:complexType>

      </xs:element>

      </xs:sequence>
```

```
      <xs:attribute name="ELEMENTWEIGHT" type="xs:decimal" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">Numeric (19,7)
19 digits of precision and up to 7 decimal places
Decimal point is not implied</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="TYPEINVENTORYCHANGE" type="xs:string"
use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">2 Alpha Characters
Validated by Inventory Change Type section of StaticData Authority Reference
Table</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="OTHERRIS" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">4 Alphanumeric
Characters
Validated by RIS Authority Reference Table</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      <xs:attribute name="ENTRYSTATUS" type="xs:string" use="required">

      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">1 Alpha Character
Validated by Entry Status section of StaticData Authority Reference
Table</xs:documentation>

      </xs:annotation>

      </xs:attribute>

      </xs:complexType>
                                                      </xs:element>
                                                </xs:sequence>
                                                <xs:attribute
name="PROCESSCODE" type="xs:string" use="required">
                                                      <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">1 Alpha Character
Accepted values A,C or D</xs:documentation>
```

```
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="SEQUENCENUMBER" type="xs:byte" use="required">
                                                    <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">Integer, non-
negative</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="DATACODE" type="xs:string" use="required">
                                                    <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">1 Alphanumeric
Character
Allowed values; 3 or 4
Also known as TypeCode</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                                <xs:attribute
name="MATERIALBALANCECATEGORY" type="xs:byte" use="required">
                                                    <xs:annotation>

      <xs:documentation source="Comment MATERIALTYPE">2 Alphanumeric
Characters
Validated by RIS Material Balance Category Authority Reference
Table</xs:documentation>
                                                    </xs:annotation>
                                                </xs:attribute>
                                            </xs:complexType>
                                        </xs:element>
                                    </xs:sequence>
                                    <xs:attribute name="RIS" type="xs:string"
use="required">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment MATERIALTYPE">4 Alphanumeric Characters
Validated by RIS Authority Reference Table</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="STARTDATE"
type="xs:string" use="required">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment MATERIALTYPE">Date in mm/dd/yyyy format</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                    <xs:attribute name="ENDDATE"
type="xs:string" use="required">
                                        <xs:annotation>
                                            <xs:documentation
source="Comment MATERIALTYPE">Date in mm/dd/yyyy format</xs:documentation>
                                        </xs:annotation>
                                    </xs:attribute>
                                </xs:complexType>
                            </xs:element>
                        </xs:sequence>
```

```
                    <xs:attribute name="VERSION" type="xs:byte"
use="required"/>
                </xs:complexType>
        </xs:element>
</xs:schema>
```