DIRECTIVES CONTROL FORM - ORO O FINAL DIRECTIVE

PART A (To be completed by the Division of Primary Interest (DPI)

1. **NUMBER AND TITLE OF DIRECTIVE**: **ORO O 470, Chapter IX, Chg. 1, CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS**

2. **PURPOSE OF TRANSMITTAL**: ____ New Directive ____ Revised Directive __X__ Page Change

3. **THIS DOCUMENT MAY AFFECT THE WORK PERFORMED BY THE FOLLOWING CONTRACTORS:** (Check appropriate boxes)
   ___ No (all contractors)
   __X__ Yes If yes, whom? __X__ LMES __X__ LMER __X__ ORAU ___ SURA
   __X__ Bechtel Jacobs Company
   __X__ Other contractors (list by type) BNFL

   Many ORO contractors have approved S/RIDs or WSS sets that may affect applicability of contractor requirements from this directive. Applicability of contractor requirements must take into account the approved standards set for each particular contract.

4. **SIGNIFICANT PROVISIONS**: Are there any significant changes or impact?
   ____ No __X__ Yes If yes, describe: This ORO Chapter is part of the ORO sunset review process. Changes to this Chapter include editorial revisions to indicate the correct number of the correlating DOE Order (DOE 5633.3B) and the current organizational titles of the ORO Financial Evaluation and Accountability Division and the Materials Control & Accountability Team. To reflect current policy, subparagraphs 4a(9) and (12) have been deleted (resulting in the other subparagraphs being renumbered), subparagraph 6b(1)(a) in Attachment 3 has been revised, and subparagraphs 7a(1)(d)-(e), 7a(2)(a), 7a(3)(a) and Table 2-1 in Attachment 3 have been deleted. To reflect correct format Figure 1-1 has been renumbered as Figure 2-1, Table 2-2 has been renumbered as Table 3-1 and Figure 2-1 has been renumbered as Figure 3-1.

5. **CONTACT POINT**: Harvey Heckman (Name) Financial Evaluation & Accountability Division, FM-73 (Organization) 576-2505 (Telephone)

PART B (To be completed by the Directives Management Group (DMG)):

6. **FILING INSTRUCTIONS**:

Remove	Dated	Insert	Dated
ORO O 470, Chapter IX Pages IX-1 through IX-23	05/15/1996	ORO O Control Form	05/10/1999
		ORO O 470, Chapter IX, Chg. 1, Pages IX-1 through IX-19	05/10/1999

   ORO Orders are available on the ORO Directives Management Home Page [http://www.ornl.gov/doe_oro_dmg/orchklst.htm] within 5-10 working days after receipt of this Control Form. The ORO Orders will no longer be mailed in printed copy unless you do not have Internet capabilities.

7. **APPROVED FOR DISTRIBUTION IN ACCORDANCE WITH THE OFFICIAL DIRECTIVES DISTRIBUTION LIST**:

   Original signed by
   Jennifer H. Cusick, AD-440 — 05/10/1999
   Signature Management Analyst, AD-440 — Date

INSTRUCTIONS TO ADDRESSEES: THIS FORM IS TO BE FILED WITH THE DIRECTIVE AND RETAINED

U.S. Department of Energy

Oak Ridge Operations

ORO O 470
Chapter IX
Chg. 1

DATE: 05/10/1999

SUBJECT: CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS

1. PURPOSE. This Chapter correlates to DOE 5633.3B, CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS, dated September 7, 1994, by assigning responsibility and accountability and providing administrative and/or contractual guidance to Oak Ridge Operations (ORO) and its contractors. Nothing in this issuance changes any requirements contained in any DOE Order.

2. CANCELLATION. This Chapter cancels and replaces ORO O 470, Chapter IX, CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS, dated May 15, 1996.

3. APPLICABILITY. The provisions of this Chapter apply to ORO Principal Staff and contractors and subcontractors, to the extent set forth in their contract, on a facility-specific basis, that have responsibility for nuclear materials at DOE-owned or -leased facilities or that have responsibility for DOE-owned nuclear materials at offsite facilities which are exempt from the Nuclear Regulatory Commission licensing and regulation.

4. RESPONSIBILITIES. Many ORO contractors have developed Standards/Requirements Identification Documents (S/RIDs) or Work Smart Standards (WSS) sets that may not include requirements referenced or included in DOE 5633.3B or this Chapter. Interpretation and performance of Federal responsibilities outlined below must take into account the approved standards set or contract for each particular contractor and must not be deemed to add any requirement to the approved set or contract.

   a. Director, Financial Evaluation and Accountability Division (FEAD).

      (1) Performs those tasks identified in DOE 5633.3B, subparagraphs 6f(1)(a), (4), (5), and (9); and 6h.

      (2) Coordinates with the Director, Safeguards and Security Division, to ensure the practical integration of material control and accountability (MC&A) with physical protection systems, procedures, and operations (see DOE 5633.3B, subparagraph 6f(1)(b)).

      (3) Examines nuclear material storage reconfiguration plans to determine accessibility of the material for performance of MC&A requirements.

      (4) Maintains follow-up on all MC&A findings disclosed by ORO safeguards and security surveys and Headquarters security evaluations and validates corrective actions prior to closure of findings.

(5) Requires that an annual facility-specific self-assessment plan be submitted by ORO facilities and monitors the adequacy of reports issued on assessments conducted.

(6) Evaluates the adequacy of MC&A provisions in all agreements between Headquarters and ORO.

(7) Notifies ORO program managers and the Manager of anomalous conditions identified in the review of material control indicators and recommends corrective actions.

(8) Coordinates the MC&A activities associated with modification of existing or establishment of new operations in nuclear materials. Advises ORO organizations on the MC&A aspects of inspections by the International Atomic Energy Agency (IAEA).

(9) Maintains the International Nuclear Materials Tracking System (INMTS) Data Collection Procedures on a current basis. Provides copies of procedures to DOE offices that export or import nuclear materials and to DOE Headquarters (HQ), Nuclear Regulatory Commission (NRC), and Department of State oversight offices.

(10) Maintains the Joint Notification Procedures on a current basis and provides copies to DOE-HQ, NRC, and Department of State oversight offices.

(11) Prepares reports for compliance with requirements in trilateral Safeguards Agreements among the United States, the individual nations the United States is cooperating with under bilateral agreements for cooperation on the civil uses of atomic energy, and the IAEA. Reports are forwarded to the IAEA and the foreign entities with which the United States has entered into bilateral agreements.

(12) Provides guidance to the Contracting Officer's Representatives (COR), as necessary, relating to documentation of transactions and other data into the Nuclear Materials Management and Safeguards System (NMMSS).

b. Contracting Officer's Representatives (COR).

(1) Perform those tasks identified in DOE 5633.3B, subparagraphs 6f(1)(c)-(f); 6f(3), (6), and (8); and 6g.

(2) Ensure that facility commitments to discharge MC&A requirements are executed and included in evaluation of contractor performance.

5. REQUIREMENTS AND PROCEDURES. Procedures are outlined in Attachments 2 through 4 of this Chapter.

6. REFERENCES. None.

7. DEFINITIONS. None.

8. CONTRACTOR REQUIREMENTS DOCUMENT. See Contractor Requirements Document, Attachment 1 of this Chapter.

9. ATTACHMENTS.

   a. Attachment 1 - Contractor Requirements Document.

   b. Attachment 2 - Basic Requirements.

   c. Attachment 3 - Materials Accountability.

   d. Attachment 4 - Materials Control.

CONTRACTOR REQUIREMENTS DOCUMENT

Contractors identified in paragraph 3 of this Chapter will accomplish the following, to the extent set forth in their contracts:

For each facility, develop an MC&A program consistent with the requirements of DOE 5633.3B, Chapters I, II, and III; and the provisions of this Chapter.

BASIC REQUIREMENTS

1. General. Each facility's initial materials control and accountability (MC&A) plan and any subsequent MC&A plan modification that alters the MC&A program will be forwarded to the cognizant Contracting Officers' Representative (COR) and the Financial Evaluation and Accountability Division (FEAD) for review and approval. The Materials Control and Accountability (MC&A) Team, FEAD, will coordinate the Oak Ridge Operations (ORO) review and approval process. The plan will contain the following signatures of approval: (1) the facility nuclear MC&A manager; (2) the facility manager or designated alternate; (3) the Team Leader, MC&A Team; and (4) the cognizant COR.

   The MC&A Team will be notified immediately of any deviation from the plan that would decrease the control and accountability requirements identified in the plan.

   Components described in Figure 2-1 of this Attachment will be included in the facility MC&A Plan.

   The scope and content of the MC&A Plan for Category III and IV facilities will be the same as for Category I and II facilities except as specifically authorized by ORO.

   The MC&A Team will be notified when it is determined that the proposed removal of Attractiveness Level D or higher Special Nuclear Material (SNM) from the facility's inventory would create a significant vulnerability. The facility will not discard the material in question until an assessment is made and appropriate safeguards measures are implemented. For Attractiveness Level D or higher SNM that has been previously removed from the facility's inventory and for which a significant vulnerability exists, the MC&A Team will be given written notification within five working days from when it is first determined that the previous discard(s) created a significant vulnerability.

2. Graded Safeguards. A graded MC&A program will be established consistent with the requirements of this Chapter and DOE 5633.3B. In keeping with the graded safeguards concept, ORO facilities may operate under varying safeguards requirements due to different material types, forms, quantities and flows. Deviations from specific requirements of this Chapter and DOE 5633.3B will be approved when alternative measures are deemed appropriate. Deviations will be approved in accordance with DOE O 470.1.

3. Materials Control and Accountability Requirements for Source and Other Nuclear Materials.

   a. Tritium. Because tritium has strategic importance, graded safeguards programs for tritium are required in accordance with the requirements of DOE 5633.3B, Chapter I, subparagraph 3b. The contractor will prepare special procedures at facilities having tritium and forward them to the MC&A Team for review.

b. Depleted Uranium. If the quantity of depleted uranium in a facility's inventory is such that it is not required to be handled as Category IV, Attractiveness Level E, material, the contractor may propose to apply the minimum requirements of DOE 5633.3B, Chapter I, subparagraph 3c(3). The contractor will document how the minimum requirements will be implemented and will forward the proposed requirements to the MC&A Team for concurrence.

4. Loss Detection Element Evaluation.

a. Vulnerability Assessment (VA). Prior to development of detailed VAs, which identify and evaluate the capability for detection of a loss of a Category I quantity of SNM and are required for the preparation of the Site Safeguards and Security Plan (SSSP), the contractor will develop a plan for the assessment and forward it to the MC&A Team for approval.

b. Performance Testing. The results of performance testing done to satisfy the requirements of DOE 5633.3B, Chapter I, subparagraph 4c, may be used to satisfy the requirements of DOE 5633.3B, Chapter I, subparagraph 4b, if such tests can be designed to meet the requirements of both subparagraphs.

c. Materials Control and Accountability Performance Requirements. The contractor will notify the MC&A Team of each performance test failure that indicates a significant vulnerability, SNM at risk, or a systemic MC&A program weakness. Criteria for determining significance and requirement for notification of the MCA&M Team will be included in the facility performance testing program plan. Notification of significant performance test failures will be made to the MC&A Team prior to the issuance of test reports, as soon as practical following contractor evaluation of test results.

5. Occurrence Investigation and Reporting. Each facility's MC&A procedures will contain provisions covering incident investigation, reporting procedures, and requirements, as described in DOE 5633.3B, Chapter I, paragraph 5.

a. The facility internal notification and reporting system procedures will, if possible, include notification to the MC&A Team of each reportable inventory difference and shipper/receiver difference before the occurrence report is filed. In addition, the procedures will require that a copy of each occurrence reported in accordance with DOE O 232.1A be forwarded to the MC&A Team within two days after issuance. This requirement pertains to the initial report and to interim and final reports.

b. When pertinent data, such as action limits, inventory differences, or shipper/receiver differences are classified and therefore omitted from the occurrence report, the contractor will provide that data by separate, classified transmittal to the MC&A Team.

c. Information documenting that routine monitoring of MC&A loss detection elements was performed will be retained by the contractor for one year, or until the next ORO Safeguards

and Security survey of MC&A is conducted at the facility, whichever is longer. Information documenting emergency and unusual occurrences will be permanently retained.

d. The MC&A Team will coordinate the incident investigations and preparation of reports with the Office of Safeguards and Security (NN-51) and the cognizant Secretarial Office.

6. Administrative Controls.

a. The facility program for periodic assessments and reviews will contain the following procedures:

(1) An annual plan for the number of assessments and the topics to be covered will be prepared by the contractor and submitted to the MC&A Team by August 15 for the next fiscal year. The contractor will advise the MC&A Team of any change to the annual assessment plan which materially alters the scope and/or schedule of the plan as such changes occur. Other changes may be reflected in periodic status reports issued to the MC&A Team.

(2) A copy of each report issued on assessments or reviews will be provided to the MC&A Team upon issuance.

(3) An independent audit of the facility's MC&A function will be conducted annually in accordance with the requirements of DOE 5633.3B, Chapter I, subparagraph 6g.

b. The contractor will update by April 1 of each year its historical accountability report for activity through the end of the previous fiscal year and forward it to the MC&A Team. The report will contain yearly data on throughput, inventory differences, operating losses, and other book adjustments, along with a narrative explaining the data.

FIGURE 2-1
ADDITIONAL MC&A PLAN COMPONENTS

The following components, as applicable, will be included in the facility MC&A Plan:

1. A copy of each DOE letter or memorandum, specific to the facility's activities, that clarifies requirements or grants a deviation from the requirements of this Chapter or DOE O 5633.3B.

*2. Vulnerability assessments on which the MC&A program is based.

*3. Procedure manuals used in the material balance areas for performance of MC&A requirements, emergency plans, and security directives that promote understanding of the overall MC&A program.

*4. Description of safeguards measures implemented for Attractiveness Level D or higher SNM that has been removed from inventory as waste and for which a significant vulnerability exists.

*5. Security procedures being used as alternates for MC&A procedures required by Chapter III of DOE 5633.3B, will be documented and submitted to the ORO MC&A Team for concurrence.

*6. Documentation that contains ORO approval of facility-specific limits beyond which a response plan for evaluating and resolving waste discharges is required (see DOE 5633.3B, Chapter III, subparagraph 5c(2)).

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*Inclusion in the MC&A Plan by reference is required; however, actual inclusion of document in the MC&A Plan is at the contractor's option.

MATERIALS ACCOUNTABILITY

1. General. The provisions of DOE 5633.3B, Chapter II generally apply to all categories of material balance areas (MBAs). Limitations to general applicability are specifically expressed. Facility-specific deviations may also limit applicability. All such deviations will be formally approved and incorporated into the facility MC&A Plan and Site Safeguards and Security Plan (SSSP).

2. Accounting Systems. The contractor will prepare and maintain documentation to provide evidence of conformance with the Generally Accepted Accounting Principles of the Financial Accounting Standards Board.

3. Inventories.

   a. Physical Inventories.

      (1) Physical Inventories. Inventory values will be based on measured quantities unless an alternative is approved by the MC&A Team. Proposed alternatives will be submitted by the contractor for approval. For material which is inaccessible for measurement by sampling during processing and recovery operations, the process monitoring parameters, material control procedures, measurements or specific action criteria for tracking materials in process until operations permit a complete inventory, will be approved by the MC&A Team.

      (2) Conduct of Inventories. Statistical sampling plans prepared by the contractor for verification of the presence of items will be forwarded to the MC&A Team for approval.

      (3) Physical Inventory Frequencies. Inventory frequencies are facility specific and will be approved by the Team Leader, MC&A Team. Any proposed revisions that would reduce the minimum physical inventory frequency requirements stated in DOE 5633.3B will require approval in accordance with the requirements of DOE O 470.1.

   b. Special Inventories. Requests by ORO for special inventories will be forwarded to the MC&A Team for approval. This requirement does not apply to activities conducted during ORO Safeguards and Security surveys or Office of Security Evaluations (OSE) reviews, which are part of system performance tests.

   c. Inventory Verification/Confirmation Measurements.

      (1) Statistical sampling plans and quantity thresholds for inventory verification/confirmation measurements testing item attributes will be approved by the MC&A Team.

(2) The control limits for inventory confirmation/verification measurements for Category I and II items will be reviewed and approved by the MC&A Team.

4. Measurements and Measurement Control. The contractor will strive to optimize accuracy and precision of its measurement of nuclear materials inventories and transactions. Use of external measurements and measurement control expertise in pursuit of improvement is encouraged. The scope and content of the measurements and measurement control programs for Category I and II facilities are defined in DOE 5633.3B, Chapter II, subparagraphs 4a through 4e. The scope and content for Category III and IV facilities will be approved by the MC&A Team.

a. Organization. The tasks required by the contractor to perform the measurements and measurement control program for Category I and II material will be documented.

b. Selection and Qualification of Measurement Methods. The level of precision and accuracy of the measurement methods for Category I and II material will be updated every two years and submitted by the contractor to the MC&A Team for approval.

c. Measurement Control.

(1) Statistical Controls. The target values for the statistical control limits will be submitted by the contractor to the MC&A Team for review and concurrence.

(2) Measurement Method Qualification. The control measurement frequency for nondestructive assay (NDA) measurements, if different from the requirements of DOE 5633.3B, Chapter II, subparagraph 4e(1)(i), will be approved by the MC&A Team.

5. Material Transfers.

a. External Transfers.

(1) Prior to transfer, written verification will be obtained that the intended receiver is authorized to accept the material, and will be retained until all transfers are complete. Required verification may be in the form of the intended receiver's written acknowledgement/acceptance of shipper's request to transfer the material.

(2) When "safeguards closure" is applied to a transaction, in accordance with DOE 5633.3B, Chapter II, subparagraph 5a(4)(f), records of transfer checks will be retained until the next ORO Safeguards and Security survey of MC&A is conducted at the facility following final closure of the transaction.

(3) Measurement Requirements for External Transfers of Nuclear Materials. The requirement for measured values for Category III and IV quantities will be made by the MC&A Team and be included in the facility MC&A Plan upon its reissuance. Requests for deviations allowing material to be put into process prior to completion of the

required accountability measurement will be submitted by the contractor to the MC&A Team. Designation of materials on which receiver verification cannot be performed without destroying the item, such as weapons assemblies or subassemblies, and certain reactor fuel elements, will be approved by the MC&A Team and included in the facility MC&A Plan.

(a) The receiver's accountability measurements for transfers of other than Category I or II quantities of SNM may be required by the MC&A Team. Precision and accuracy goals for measurement may be established by the MC&A Team.

(b) When the receiver's accountability measurement performed subsequent to a safeguards closure indicates a significant shipper/receiver difference as described in DOE 5633.3B, Chapter II, subparagraph 6a(1)(b), the MC&A Team will be notified with necessary documentation to permit initiation of a resolution process with the shipping partner's Operations Office.

(c) Shipper-receiver agreements will be approved by the responsible facility and MC&A managers and by contractor and program managers. The agreements will be forwarded to the MC&A Team for coordination and approval.

(d) When limited processing of "difficult-to-measure" material is necessary to perform a receipt measurement and no shipper/receiver agreement covering the material exists, the MC&A Team will be notified to obtain the approval of the shipper's Operations Office and concurrence of NN-51.

b. Internal Transfers. The MC&A Team will be notified if any abnormal situation is detected in evaluating internal transfers.

6. Material Control Indicators.

a. Shipper/Receiver Difference Assessment.

(1) The contractor, unless specifically excluded in writing by the MC&A Team, will provide a copy of a quarterly summary report on analyses of shipper/receiver trend data to the cognizant COR and MC&A Team. This requirement applies to standard, measured flows suitable to trend analysis. The quarterly report will be submitted within 60 days after each calendar quarter.

(2) The MC&A Team will be notified immediately of any significant shipper/receiver difference which requires an occurrence report. Requests for extension of the 30 working days to complete the investigation will be made to the MC&A Team.

(3) The MC&A Team will be notified if there is a question about the validity of the shipping partner's limit of error calculations.

(4) The MC&A Team will be notified of any shipper/receiver differences resulting from a discrepancy in the number of items.

(5) For resolution of statistically significant shipper/receiver differences, the MC&A Team coordinates with the shipping partner authorities (Operations Office, NRC, etc.) regarding the validity of the measurements and limits of error.

(6) When there is a significant unresolved shipper/receiver difference, the material will be quarantined unless continued processing is approved by the MC&A Team.

b. Inventory Difference Evaluation.

(1) The contractor will provide the cognizant COR and MC&A Team a summary report on evaluations of facility inventory difference data. Reports will include SNM (including tritium) and cascade uranium. The summary report will include the following:

(a) Certified Material Balance Report, Nuclear Materials Management and Safeguards System (NMMSS) Report M-742, for the current reporting period and fiscal year-to-date information.

For each facility, the contractor will review Material Balance Reports generated by the NMMSS. The facility representative will note changes required, certify the reports are correct as noted, and submit data reflecting any changes to the NMMSS, with a copy of the certified report forwarded to the MC&A Team.

Reporting frequencies for ORO facilities are as follows:

Facility	RIS Code(s)	Frequency
BNFL	FDD	Semiannually
BWX Technologies	FCW	Semiannually
ETTP (Bechtel Jacobs)	BWD*, FZE, VWD, VZH	Semiannually
MCL	FCC	Semiannually
ORISE	FBF	Semiannually
ORNL (LMER)	FZG	Bimonthly
ORNL (Bechtel Jacobs)	FZK, VZK	Semiannually
Paducah	FYC	Bimonthly
Portsmouth	FXA,SXA,FXC	Bimonthly
Y-12 (LMES)	FZF,FZH	Bimonthly
Y-12 (Bechtel Jacobs)	FZJ	Semiannually

*RIS Code BWD to remain active until transfer of USEC-owned cylinders from ETTP to USEC operations at Portsmouth Gaseous Diffusion Plant is completed.

(b) For inventory differences by Category I and II MBAs, the following data presentations will be included, unless specifically excluded in writing by the MC&A Team:

(1) tables showing element and isotope differences for each regular inventory for the past 24 inventory periods, and (2) chart showing isotope differences for each regular inventory for the past 24 inventory periods. The chart will also depict warning and alarm limits.

Note: The report will be submitted to the MC&A Team within 45 calendar days after closure of the reporting period. For those reporting periods in which NMMSS is late in closing out, the 45 days will be extended by the number of days that NMMSS is late in closing.

(2) Statistically-valid techniques to derive inventory difference control limits, other than variance propagation, may only be used if justified on the basis of factors such as limited data, low transfer rates, material categories, or other process variations and approved by the MC&A Team.

c. Evaluation of Other Inventory Adjustments (and Explanations).

(1) The contractor will provide a facility control data sheet reporting summary explanations on inventory data adjustments to the MC&A Team and cognizant COR. These data sheets are required on SNM (including tritium) and cascade uranium for reporting periods in which there is activity in lines 74 (Normal Operating Losses), 75 (Accidental Losses), 76 (Approved Write-Offs), or 77 (Inventory Differences) of the Material Balance Report. High-enriched and low-enriched uranium data will be reported separately. Also, explanations for non-routine losses or discards, including Attractiveness Level D or higher SNM that has been removed from inventory as waste, will be provided as an attachment to the control data sheet. These facility control data sheets, when required, will be included with the inventory difference evaluation reports when they are submitted for the facility reporting period. An example of the facility control data sheet is included as Figure 3-1 of this Attachment.

(2) The contractors will report radioactive decay on the Material Balance Report to the NMMSS on a quarterly basis for reportable quantities.

Note: The MC&A Team will coordinate a quarterly meeting with each facility contractor to discuss actions resulting from evaluations of material control indicators.

7. Documentation and Reporting.

a. Nuclear Material Transaction Report.

Contractors will have internal controls in place at the facilities to ensure the data transcribed to the DOE Forms DP-740, DP-740A, DP-749, or DP-749A and submitted to the NMMSS agree with the data reported on the source documents (e.g., DOE/NRC Form 741).

Implementing instructions specific to certain problem areas follow:

(1) Shipments/Receipts.

(a) Transactions Involving International Accounts. To the extent receiver's data is provided by a foreign recipient, it will be entered into the NMMSS by the domestic shipper.

Closure of Foreign Transfers. For shipments of Category I and II nuclear materials to a foreign entity, the shipper must obtain the required documentation to effect closure as described in DOE 5633.3B. For shipments of Category III or IV nuclear materials, the shipper may effect closure based on the following:

1 When a Form DOE/NRC-741 has been received, it must be properly endorsed by the appropriate officials from within the foreign entity to which the material was shipped.

2 For shipments of nuclear material being donated to foreign countries and for shipments of asterisk quantities, the shipping facility will close the receiver's side of the transaction by submitting the receiver's data to NMMSS at the same time the shipper's data is submitted to NMMSS.

3 For shipments of nuclear material to foreign countries for which payment has been received in advance and for which no inquiries or receipted documents (DOE/NRC-741) have been received within 90 days following shipment, the shipper will close the receiver's side of the transaction.

4 For shipments of nuclear material to foreign countries for which payment is to be made after delivery, and for which a receipted document (DOE/NRC-741) has not been received, but according to financial records payment has been made, the shipper will close the receiver's side of the transaction upon notification of payment.

5 When notification that shipment has been received (i.e., TWX, facsimile, telephone, letter, with or without additional shipper's request) from an

appropriate official within the foreign entity to which the material was shipped, the shipper may effect closure.

Note: In all of the above, the shipper should take whatever steps are necessary to ensure that the notification that is being relied on for closure relates to the shipment transaction being closed.

(b) Transactions Involving Licensees. In those instances in which the other party to a transaction is a licensee and is not required to report shipper or receiver data (e.g., a transaction involving tritium), facility personnel will nevertheless prepare the required data for entry into the NMMSS. The transaction is a one-party type and will show an "M" action code.

(c) Material in Transit (Domestic Shipments). The following supplemental guidance is intended to clarify the material-in-transit rule:

1 Transaction Reporting. Receiving facility personnel will use DOE Form DP-740 to submit to the NMMSS data reporting project receipts of DOE-owned nuclear materials that are in transit at the end of the month.

The weight values must match those of the shipper and an action code of "J" must be used. A Form DOE/NRC-741 should not be completed for a "J" action code.

Receiving facility personnel will prepare a Form DOE/NRC-741 in the month when the shipment is actually received. The form must show the actual date of physical receipt. Shipping facility personnel will show the shipping date on these forms. The fact that shipment was initiated in a prior month has no bearing on the entry of date of physical receipt, nor does the end of a fiscal year occurring between date of shipment and date of receipt alter the fundamental rule that the DOE/NRC-741 must show the date of physical receipt. For example, a shipment from Company X on September 30 which was received on October 2 will be reported as shipped on September 30 and received on October 2. In this case, if the material is DOE-owned, a "J" action code would be reported by the intended receiver to the NMMSS with an action date on or following the date of the shipment but not later than the last day of the month.

2 Inventory Reporting. Material in transit at the end of a reporting period, whether month or fiscal year, will be entered on the intended receiver's inventory records in the NMMSS by the receiving organization. This will be reported on Forms DOE/DP-733 and DP-733A or in computer readable form.

3 Material Balance Report. The NMMSS-generated Form DOE/NRC-742 is based on DOE/NRC-741 input. In-transit shipments will be added to the receiver's balance based on the shipper's DOE/NRC-741 data. No other DOE/NRC-741 input is required. In the example above, the DOE/NRC-742 would show an in-balance situation.

(2) Shipper's and Receiver's Data, Form DOE/NRC 741.

(a) Receipts Awaiting Reprocessing. The following guidance is given concerning materials being received that are awaiting reprocessing.

1 On receipts that will be measured within 30 days, record as an "N" action code.

2 On receipts that will be measured beyond 30 days, record as a "U" action code.

3 After determination of measured values, the transaction will be closed using either the "B" or "E" action codes.

If it appears that a receipt will not be reprocessed within a 2-year time period, notify the MC&A Team so a determination can be made as to how to handle the transaction.

(3) Distribution of Copies of Form DOE/NRC-741.

(a) All NMMSS submissions will be sent to the following address */**:

NAC International
NMMSS Project
P.O. Box 922088
Norcross, Georgia 30010
* unclassified submissions should be sent “Attention: Program Administration.”
** classified submissions should be sent “Attention: Document Control.”

(b) If the transaction involves DOE-owned californium, NMMSS-Program Control (QFA) will send copies of the advance notification copy and signed receiver's copy to:

U.S. DOE
DOE Oak Ridge Operations
Financial Review Team (FM-731)
P. O. Box 2001
Oak Ridge, Tennessee 37831-8771

b. ADP Transcription Sheets for Inventory Data and Physical Inventory Listing.

(1) Nuclear Material Composition Codes and Description. For total values to be entered on line 899 of DOE/DP-733, DOE/DP-733A, and Form DOE/NRC-742C, use the appropriate material type code from Table 3-1.

TABLE 3-1

Nuclear Material Types

Name of Material	Material Type Code
Uranium, Depleted in U-235	10
Uranium, Enriched in U-235	20
Plutonium-242	40
Plutonium	50
Lithium, Enriched in Li-6	60
Uranium, Enriched in U-233	70

(2) Authorized Profiles of Inventory Data.

To make changes to an inventory profile, contact the MC&A Team and provide the following information for submission to DOE Headquarters:

(a) Reporting Identification Symbol (RIS) code.
(b) Line number.
(c) Deletion or addition.
(d) Material type.
(e) Count (piece, bulk, or combination).

The approved change is communicated to NMMSS authorizing the addition or deletion to the requestor's inventory profile.

FIGURE 3-1
OAK RIDGE OPERATIONS
FACILITY CONTROL DATA SHEET

Reporting Facility _____
RIS _____ Material Type _____ Period _____

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A. Inventory Difference Summary

Information Categories	Element Weight	Isotope Weight
77. Inventory Difference (Book-Physical ID, BPID)		
88. Redetermination of Discrete Items on Inv.		
89. Redetermination of Material in Process		
90. Process Holdup Differences		
91. Equipment Holdup Differences		
92. Measurement Adjustments		
93. Rounding		
94. Recording and Reporting Errors		
95. Shipper-Receiver Adjustments		
96. Identifiable Item Adjustments		
TOTAL EXPLAINED ID (EID)		
97. Actual Inventory Difference (AID)		
Control Limits: Alarm - Upper Limit		
Lower Limit		
Warning - Upper Limit		
Lower Limit		

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B. Losses/Writeoffs.

74. Normal Operating Losses		
75. Accidental Losses		
76. Approved Writeoffs		

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	Element Wt., Kg.	Isotope Wt. Kg.
C. 80. Ending Inventory		

MATERIALS CONTROL

1. General. Materials Control procedures required by DOE 5633.3B, Chapter III may be covered by existing security procedures at the option of the contractor and be incorporated by reference in the MC&A Plan.

2. Access Controls.

   a. Materials Access. The documented access control program will be referenced in the MC&A Plan.

   b. Data Access. Facility documentation will identify the data and information to which this requirement applies.

   c. Equipment Access. Facility documentation will identify the equipment to which this requirement pertains and will identify the nature of the access control that pertains to each category of equipment.

3. Material Surveillance. The documented material surveillance program will be referenced in the MC&A Plan.

4. Material Containment. The documented material containment program will be referenced in the MC&A Plan.

5. Detection/Assessment. Documentation substantiating that daily administrative checks were made will be retained for one year or until the next ORO Safeguards and Security survey of MC&A is conducted at the facility, whichever is longer.

   Documentation of the scope and extent of the facility daily administrative checks will be prepared and forwarded to the cognizant COR and MC&A Team for approval. Documentation may be in the form of a letter or may be included in the facility MC&A Plan provided that the plan document is kept current.