



Audit of Internal Controls Over Special Nuclear Materials

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED 85

Your comments would be appreciated and can be provided on the Customer Response Form attached to the report.

Appended to this report are source documents that cannot be transmitted electronically due to technological limitations. Therefore, the audit report is not available on the Internet. You may obtain a copy of the report by contacting Wilma Slaughter at (202) 586-1924, or by writing to:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, Tennessee 37831

United States Government

Department of Energy

memorandum

DATE: April 4, 1996

REPLY TO
ATTN OF: IG-1

SUBJECT: INFORMATION: Report on "Audit of Internal Controls Over
Special Nuclear Materials"

TO: The Secretary

BACKGROUND:

The Department of Energy (Department) is responsible for safeguarding a significant amount of plutonium, uranium-233 and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. The Department's Office of Nonproliferation and National Security has overall management cognizance for developing policies for safeguarding these materials, while other Headquarters program offices have "landlord" responsibilities for the sites where the materials are stored, and the Department's operations and field offices provide onsite management of contractor operations. The Department's management and operating contractors, under the direction of the Department, safeguard and account for the special nuclear material stored at Department sites.

DISCUSSION:

The Office of Inspector General audited internal controls over special nuclear materials at the Hanford Site, Rocky Flats Environmental Technology Site, Los Alamos National Laboratory, Oak Ridge Y-12 Plant, Pantex Plant, Idaho National Engineering Laboratory, and Argonne-West National Laboratory. The objective of the audit was to determine the adequacy of internal controls over special nuclear materials.

The audit disclosed that management at three sites had not performed all required physical inventories, and one site did not perform measurements, due to safety concerns and operational interruptions. The audit did not disclose that any special nuclear materials were missing. However, the longer complete physical inventories are delayed, the greater the risk that unauthorized movement of special nuclear materials could occur and go undetected.

The report recommended that the Department (1) conduct the required physical inventories, and (2) implement program enhancements suggested in the January 1995 report, Increasing Fissile Inventory Assurance Within the U.S. Department of Energy. The recommendations will bring the Department into



U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL

AUDIT OF
INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

Report Number: DOE/IG-0388
Date of Issue: April 4, 1996

Western Regional Audit Office
Albuquerque, NM 87185-5400

AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY.....	1
PART I - APPROACH AND OVERVIEW.....	3
Introduction.....	3
Scope and Methodology.....	3
Background.....	4
Circumstances Affecting the Audit.....	5
Observations and Conclusions.....	6
PART II - FINDING AND RECOMMENDATIONS.....	7
Controls Over Special Nuclear Materials.....	7
PART III - MANAGEMENT AND AUDITOR COMMENTS.....	11
APPENDIX A	
APPENDIX B	

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDIT SERVICES
WESTERN REGIONAL AUDIT OFFICE

AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

Audit Report Number: DOE/IG-0388

SUMMARY

The Department of Energy (Department) is responsible for safeguarding a significant amount of plutonium, uranium-233, and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. The Office of Nonproliferation and National Security has overall management cognizance for developing policies to safeguard these materials, while other Headquarters program offices have "landlord" responsibilities for the sites where the materials are stored and the Department's operations and field offices provide onsite management of contractor operations. The Department's management and operating contractors safeguard and account for the special nuclear materials entrusted to them at Departmental sites. The objective of the audit was to determine the adequacy of internal controls, specifically physical inventories and measurements, over these materials.

The audit disclosed that management at three sites had not performed all required physical inventories, and one site did not perform measurements, due to safety concerns and operational interruptions. The audit did not disclose that any special nuclear materials were missing. However, the longer complete physical inventories are delayed, the greater the risk that unauthorized movement of special nuclear materials could occur and go undetected.

We recommended that the Department work to conduct inventories and measurements of special nuclear materials according to Department requirements and to fully implement program enhancements suggested in a January 1995 internal report on this subject.

The Offices of Nonproliferation and National Security, Defense Programs, Environmental Management, and the Rocky Flats Field Office, Oak Ridge Operations Office, and Idaho Operations Office commented on the report. These offices generally concurred with the finding and recommendations. Several

PART I

APPROACH AND OVERVIEW

INTRODUCTION

The Department is responsible for safeguarding a significant amount of plutonium, uranium-233, and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. Because of the wide public and international interest in safeguarding these resources, we conducted an audit of the Department's special nuclear materials inventories. The audit objective was to determine the adequacy of internal controls, specifically physical inventories and measurements, over these materials.

SCOPE AND METHODOLOGY

The audit was performed from August 9, 1994, through August 31, 1995. To review the internal controls and the accuracy of the inventories, we visited Department operations offices as well as management and operating contractors at the following seven sites: the Hanford Site, Rocky Flats Environmental Technology Site¹, Los Alamos National Laboratory, Pantex Plant, Oak Ridge Y-12 Plant, Idaho National Engineering Laboratory, and Argonne National Laboratory-West. These sites maintained about 94 percent of the Department's plutonium and 37 percent of the Department's enriched uranium held in inventory.

To determine whether the Department had adequate internal controls and accurately reported the quantity of special nuclear materials, we examined policies and procedures; tested accounting records; and, reviewed administrative and physical controls, including protective services.

Examination of policies and procedures at each site included:

- interviewing key materials control and accounting personnel, internal audit or assessment personnel, statisticians, and nuclear materials accounting and system personnel;
- reviewing applicable materials control and accounting plans to determine the adequacy of documented procedures such as inventory plans, inventory reconciliation plans, and the special nuclear materials accounting system;

¹ Since July 1, 1995, Rocky Flats has been managed by an integrating rather than a management and operating contractor. For simplicity, however, no distinction is made in this report.

offices provide onsite management of contractor operations. The Department's contractors safeguard and account for the special nuclear materials at the sites at which these materials are stored.

As required under the Order, each site develops a Materials Control and Accountability Plan which provides an integrated system of physical and administrative controls that ensure special nuclear materials are not removed without proper authorization. Also required is a Site Safeguards and Security Plan detailing the protective forces, fences, alarms, detection devices, and other security systems. Administrative controls include materials measurements, physical inventories, and other mechanisms. Although physical controls provide assurance that materials are not removed, materials measurements and physical inventories serve to confirm that materials are actually located in assigned locations and in the correct quantities. Physical inventories also serve to confirm that the record of accounts is properly maintained.

CIRCUMSTANCES AFFECTING THE AUDIT

We designed our sampling methodology, including the selection of 22 to 23 sample items at each location, to allow us to reach a conclusion as to the accuracy of special nuclear materials inventories. To adequately verify the accuracy of the special nuclear materials inventory lists, we needed not only to verify an item's location but also to ascertain its weight and type. However, we could not verify certain inventory items beyond comparing inventory records and charts to materials storage positions. For example, portions of the Department's special nuclear materials inventory were:

- inaccessible, such as fuel rods in reactors or spent fuel encapsulated under several feet of water;
- part of assembled weapons;
- stored in containers that could not be opened without specialized equipment and trained personnel;
- sealed in storage areas which could not be readily accessed for verification; and,
- inaccessible because of safety restrictions that prevented moving storage containers.

Because of these limitations, we were unable to properly complete our statistical sample of the Department's special nuclear materials inventory. As a result, the audit's primary focus became the adequacy of internal accounting controls, specifically physical inventories and measurements.

PART II

FINDING AND RECOMMENDATIONS

Controls Over Special Nuclear Materials

FINDING

Department policy is to assure that special nuclear materials are safeguarded against unauthorized removal by maintaining stringent accounting, physical, and administrative controls, including periodic physical inventories and measurements. We found that at three locations, however, the responsible management and operating contractors had not performed all required physical inventories, and at one site did not perform measurements, due to safety concerns and operational interruptions. A recent internal Departmental report also noted weaknesses in the measurement of and accounting for special nuclear materials. Although the audit did not disclose instances of missing special nuclear materials, delays in required periodic physical inventories increase the risk that unauthorized movement of such materials could go undetected.

RECOMMENDATIONS

We recommend the Director, Office of Nonproliferation and National Security, in conjunction with cognizant operations offices and Headquarters program offices²:

1. Work to complete inventories and measurements of special nuclear materials as required by DOE Order 5633.3B; and,

2. Fully implement program enhancements suggested in the January 1995 report, Increasing Fissile Inventory Assurance Within the U.S. Department of Energy.

MANAGEMENT REACTION

The Offices of Nonproliferation and National Security, Defense Programs, Environmental Management, and the Rocky Flats Field Office, Oak Ridge Operations Office, and Idaho Operations Office generally concurred in the Finding and Recommendations. All comments are summarized in Part III, and attached in their entirety in Appendix B. These comments are an integral part of this report.

DETAILS OF FINDING

Internal controls are defined as management's plan of organization, methods, and procedures to ensure that resource use is lawful; that resources are safeguarded against waste, loss, and misuse; and that reliable data are maintained. Management

² Please refer to Appendix A for a listing of the applicable offices.

Rocky Flats Environmental Technology Site

Special nuclear materials at Rocky Flats Environmental Technology Site (Rocky Flats) have a bimonthly standard inventory interval. The management and operating contractor, however, did not perform physical inventories for extended periods of time. At the time of our audit, for example, computer-controlled storage areas had not been inventoried for as long as 9 months, items in glove box lines were not verified for periods of up to 4 months, and items in vault and vault-type rooms had not been statistically sampled or inventoried since May 1993, a period of more than 24 months. The inventories that were performed at Rocky Flats were limited to a record review and verification that the inventory item was at its recorded location, as opposed to complete physical verification and measurement.

Rocky Flats did not conduct the required physical inventories at the required intervals because of a 1989 investigation by the Environmental Protection Agency and the Federal Bureau of Investigation. The investigation questioned the manner in which the contractor was handling certain hazardous wastes. In reaction to this investigation, operations were shut down in December 1989 and the frequency of inventories was interrupted. In October 1994, Rocky Flats experienced safety problems and again interrupted inventory schedules. Rocky Flats did not request a waiver from physical inventory requirements on either occasion when inventories were interrupted. Instead, Rocky Flats considered existing physical controls to be sufficient in safeguarding the special nuclear materials from loss or unauthorized diversion.

Oak Ridge Y-12 Plant

Bimonthly physical inventories were required at the Oak Ridge Y-12 Plant (Y-12). However, the management and operating contractor stopped conducting complete physical inventories--and instead began performing item inventories with less than complete physical verification--in July 1994. Y-12 changed its inventory methodology because the contractor discontinued operations in reaction to safety concerns raised by the Defense Nuclear Facilities Safety Board (Board). The Board questioned the contractor's handling and storing of nuclear materials.

Based on these concerns, the Manager, Oak Ridge Operations Office, submitted a formal request not to perform periodic physical inventories to the Assistant Secretary for Defense Programs. The request was referred to the Office of Safeguards and Security. Safeguards and Security, however, found the suspension of physical inventories unacceptable and disapproved the request in a memorandum dated January 5, 1995. The position taken by Safeguards and Security was based on its belief that the alternative controls did not adequately replace complete physical inventories. As of August 1995, Y-12 was still developing an action plan to resume regular inventories.

PART III

MANAGEMENT AND AUDITOR COMMENTS

The Office of Inspector General received comments on a draft of this report from the Office of Nonproliferation and National Security; Defense Programs; Environmental Management; Rocky Flats Field Office; Oak Ridge Operations Office; and Idaho Operations Office. Comments are summarized below and attached in their entirety in Appendix B.

Nonproliferation and National Security Comments

The Office of Nonproliferation and National Security concurred with the finding and recommendations. The Principal Deputy Director stated that the recommendations were clearly within the scope of current Departmental safeguards and security policies. He added, however, that there must be more commitment on the part of Departmental program and field elements to provide necessary budgets and resources to ensure adequate nuclear material safeguards controls. According to the Principal Deputy Director, the Office of Nonproliferation and National Security is currently emphasizing and addressing these needs through an intra-agency working group.

In July 1995 the Department established the Fissile Material Assurance Working Group to provide Headquarters-level direction for increasing fissile material assurance in a coordinated, consistent and cost-effective manner. The Principal Deputy Director stated that the working group can serve to ensure that material measurements, verification, control and reporting activities are included within the infrastructure of ongoing Departmental element program planning and budgeting. Further, the charter of the working group includes specific activities aimed at implementing the recommendations in the January 1995 Security Evaluations Report.

Auditor Comments

Management's proposed corrective actions--establishing the fissile material working group, adopting the Security Evaluations Report recommendations, and seeking commitment from other Departmental elements--are responsive to the recommendations.

Defense Programs Comments

Defense Programs agreed in principle with the first recommendation to complete inventories and measurements as required by the DOE Order. The response stated, however, that the second recommendation, which suggested full implementation of program enhancements in the Security Evaluations Report, needed further clarification. Defense Programs noted that the Security Evaluations Report addressed seven problem areas and contained suggested enhancements for each. The response also questioned whether it was the OIG's intent that all of the potential

Rocky Flats Comments

The Manager, Rocky Flats Field Office agreed that required bi-monthly inventories were not always performed between 1990 and 1995 due to various safety concerns and building operability problems. He further stated that the Rocky Flats is aggressively working to resolve these concerns by September 30, 1996. Finally, the Manager stated that inventory problems have been documented in previous Departmental evaluations and these reviews have always concluded that, based on the internal controls in place, special nuclear materials at the site are not at risk.

Auditor Comments

The Manager's comments are responsive to the report recommendations.

Oak Ridge Comments

Oak Ridge concurred with the finding and recommendations. There is no credible substitute or alternative to a full physical inventory and all reasonable effort should be made to independently measure receipts of special nuclear materials.

According to Oak Ridge, since completion of the audit, it has implemented a number of compensatory materials control and accountability measurements to mitigate the risk of not performing physical inventories or measurements. The compensatory actions include increased surveillance measures and enhanced nondestructive assay measurements of selected equipment and items as well as bimonthly discrete item inventory in all enriched uranium areas. In addition, since the audit 28 of Y-12's 37 material balance areas have been physically inventoried and all materials were accounted for.

For receipts of nuclear material, Oak Ridge instituted a program whereby Y-12 representatives will go to shipper sites to observe and certify measurements prior to shipment when full measurement at Y-12 cannot be performed due to a stand down. Also, warehouse receipt operations have resumed and normal confirmatory weight and nondestructive assay measurements are now being performed on received material. Since physical measurements of the materials received from Kazakhstan were not performed at Y-12 due to the stand down, the materials have been shipped to a commercial vendor for processing and measurement.

Auditor Comments

Oak Ridge actions are responsive to the report recommendations.

APPENDIX A

COGNIZANT OPERATIONS OFFICES AND HEADQUARTERS PROGRAM OFFICES

<u>DOE Site</u>	<u>Operations or Field Office</u>	<u>"Landlord"</u>
Rocky Flats Environmental Technology Site	Rocky Flats Field Office	Environmental Management
Oak Ridge Y-12 Plant	Oak Ridge Operations Office	Defense Programs
Idaho National Engineering Laboratory	Idaho Operations Office	Environmental Management

APPENDIX B

MANAGEMENT COMMENTS IN THEIR ENTIRETY

As appropriate, specific comments from management are reflected in the text of the audit report itself.



Department of Energy

Washington, DC 20585

February 22, 1996

MEMORANDUM FOR GREGORY H. FRIEDMAN
DEPUTY INSPECTOR GENERAL FOR AUDIT SERVICES

FROM: *K. Baker* KENNETH E. BAKER
PRINCIPAL DEPUTY DIRECTOR
OFFICE OF NONPROLIFERATION AND NATIONAL SECURITY

SUBJECT: INSPECTOR GENERAL'S INITIAL DRAFT REPORT ON THE AUDIT OF
CONTROLS AND ACCOUNTABILITY OF SPECIAL NUCLEAR MATERIAL

The Office of Nonproliferation and National Security appreciates this second opportunity to review and comment on the Inspector General's draft report on the audit of Internal Controls Over Special Nuclear Materials. Our comments to the Inspector General's official draft report are attached. In addition to a general comment and a management position to recommendation, please note our specific comment.

Attachment

cc: R. Speidel, Manager, Management and Internal Controls, NN-10
E. McCallum, Director, Office of Safeguards and Security, NN-51

**Comments on
the Inspector General's Official Draft Report
"Audit of Internal Controls Over Special Nuclear Materials"**

General Comments:

We concur with the findings and recommendations contained in the draft report. The recommendations are clearly within the scope of current Departmental safeguards and security policies. However, there must be more of a commitment on the part of Departmental program and field elements to provide necessary budgets and resources to ensure adequate nuclear material safeguards controls. The Office of Nonproliferation and National Security is currently emphasizing and addressing these needs through an intra-agency working group.

Specific Comments:

Page 10, "PART III - MANAGEMENT AND AUDITOR COMMENTS," third paragraph, second sentence - This sentence gives the impression that facilities are associated with this office. The sentence should read: **"Also, the Office of Nonproliferation and National Security recommends that modified requirements for conducting safeguards and security activities, such as alternative control and assurance measures, be conducted when scheduled approaches to physical inventories can not be performed will be included in the facility's materials control and accountability plan."**

The Office of Nonproliferation and National Security believes that the previous recommendation, contained in the initial draft report, should be included in this report as well.

Finding

Department policy is to assure that special nuclear materials are safeguarded against unauthorized removal by maintaining stringent accounting, physical, and administrative controls, including periodic physical inventories and measurements. We found that at three locations, however, the responsible management and operating contractors had not performed all required physical inventories, and at one site did not perform measurements, due to safety concerns and operational interruptions. A recent internal Departmental report also noted weaknesses in the measurement of and accounting for special nuclear materials. Although the audit did not disclose instances of missing special nuclear materials, delays in required periodic physical inventories increase the risk that unauthorized movement of such materials could go undetected.

Recommendations

"We recommend the Director, Office of Nonproliferation and National Security, in conjunction with cognizant operations offices and Headquarters program offices:"

1. Work to complete inventories and measurements of special nuclear materials as required by DOE Order 5633.3B.

United States Government

Department of Energy

memorandum

DATE: MAR 13 1996

REPLY TO
ATTN OF: DP-44:JHobbs:3-3454

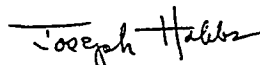
SUBJECT: DEFENSE PROGRAMS COMMENTS ON THE OFFICIAL DRAFT REPORT "AUDIT
OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS

TO: Gregory H. Friedman, Deputy Inspector General for Audits (IG-30)

Attached are Defense Programs comments on your official draft report concerning internal controls over special nuclear materials. Please note that our comments to the report are set forth in two separate memorandums.

The comments expressed in the memorandum dated March 4, 1996, provide our comments to the report's recommendation on the Fissile Inventory Assurance Report. The second memorandum dated March 7, 1996, offers our comments on the audit report's discussion of the Oak Ridge Y-12 Plant role in inventories and measurements. We request that you evaluate and incorporate our comments prior to its issuance.

We appreciate the opportunity to review and comment on this report and would be prepared to discuss the comments in further detail, if necessary. Advanced copies of these comments were faxed to Mr. Fred Doggett at your Western Region Audit Office in Albuquerque, New Mexico. If you need to discuss the comments, please contact Bill Hensley, Director of the Office of Engineering, Operations, Security and Transition Support on (301) 903-5277.



Joseph Hobbs
Audit Liaison
Office of Human and Administrative Resources
Defense Programs

Attachments

United States Government

Department of Energy

memorandum

DATE: MAR 04 1996
REPLY TO: DP-312:JWoods:3-5354
ATTN OF:
SUBJECT: COMMENTS ON THE OFFICIAL DRAFT REPORT ON "AUDIT OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS"
TO: Joseph Hobbs, DP-44

The Office of Engineering, Operations, Security and Transition Support (DP-31) has reviewed the subject official draft report dated February 15, 1996, as well as the January 1995 report entitled "Increasing Fissile Inventory Assurance Within the U.S. Department of Energy." The following data is provided for your consolidated DP response to the Deputy Inspector General for audit services.

We agree in principle with the first recommendation of the IG Report; namely, that efforts to conduct inventories and measurements of special nuclear materials, according to Department requirements, should be emphasized by Headquarters and the Operations Offices. The Fissile Inventory Assurance Report recommendation appears to need further clarification. The referenced January 1995 report correctly recognizes that there are no easy and quick solutions. The enhancements referenced in the report should be expanded to clarify the specific enhancements being recommended.

The potential enhancements contained within the Fissile Inventory Assurance Report addressed seven problems. The problems and the potential enhancements have been extracted from the report and are shown in attached Table 1. If it is the intent of the subject IG Report to fully implement all of the potential enhancements in the Fissile Inventory Assurance Report, there should be more specific direction to do so.

The enhancement concerning the establishment of a Headquarters-level steering group consisting of representatives from Headquarters Program Offices, the Headquarters Office of Safeguards and Security, Operations Offices and DOE facilities should be made as clear as possible in the final report. The leadership, scope, resources, expected results and schedule as well as the responsibilities should be outlined for the steering group to the extent practical. It would also be useful to have an understanding from the report of how the steering group approach is expected to be implemented on a complex-wide basis given the overlapping responsibilities of the steering group and its proposed membership.

Since the impact of this report will drive the allocation of resources in a diminishing budget environment, the draft IG Report should set the priority perspective as clearly as possible. As stated so well in the Fissile Inventory Assurance Report, "decisions on enhancing the measurement program must be made carefully weighing the expected benefits against the cost for each type of material and site-specific situation. Measuring all materials that do not have accurate accountability values with today's accurate measurement equipment and techniques would be expensive, time consuming,

Table 1: Problems and Potential Enhancements (page 1 of 2)

<u>PROBLEM</u>	<u>POTENTIAL ENHANCEMENTS</u>
Unmeasured Materials	<p>DOE should assure all such materials are adequately measured and entered in the accountability books.</p> <p>Use stratified sampling approach more heavily weighted toward unmeasured items.</p>
Holdup	<p>Adequately measure or estimate and enter into the accountability books.</p> <p>Look at overall safeguards for the potential for diversion of SNM.</p> <p>Use D&D results to confirm other estimates of holdups.</p> <p>Use a systematic approach to consider benefits and impacts of holdup measurement.</p>
Measurement Systems Usage and Standardization	<p>DOE Headquarters should lead a complex-wide review of the availability of measurement equipment and facility needs.</p> <p>Use under utilized measurement equipment in the complex to avoid cost and make this equipment available to the sites in need of it.</p> <p>Equipment and trained personnel could be sent to sites in need of this equipment.</p> <p>SNM to be measured could be shipped to facilities that have equipment and trained personnel.</p> <p>(These potential <u>enhancements</u> must consider <u>local factors</u> such as environmental conditions, health and safety, criticality and procedures, must be approved for use.)</p> <p>Standardize some NDA measurement techniques throughout the DOE Complex to minimize the number of methods, qualifications and procedures to be maintained and updated, and the retraining of personnel.</p> <p>DOE Headquarters should conduct benchmarking studies for the most common material types to identify methods for conducting measurements providing training and qualifying and certifying standards.</p> <p>Standardize containers for uranium and plutonium oxide, weapons components and scrap and coordinate with the standardization of long-term storage.</p> <p>Control NDA software by a single point within the DOE.</p>

United States Government

Department of Energy

memorandum

DATE: March 7, 1996

REPLY TO
ATTN OF: DP-312:JWoods:3-5354

SUBJECT: COMMENTS ON THE OFFICIAL DRAFT REPORT ON "AUDIT OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS"

TO: Joseph Hobbs, DP-44

In addition to the comments made to the subject draft report in a March 4, 1996, memorandum the Office of Engineering, Operations, Security and Transition Support (DP-31) has the following additional comment. The reports discussion of the Oak Ridge Y-12 Plant in the INVENTORIES AND MEASUREMENTS section of the report should include the following statement. The Y-12 Plant was shut down in late 1994 due to serious safety concerns/violations. This obligated Departmental implementation of operational restrictions pending resolution of the safety concerns which, in turn, adversely affected the plants ability to perform Special Nuclear Material (SNM) inventories and measurements as required by Departmental of Energy directives. However, Safeguards and physical security measures were immediately implemented and tested at the Y-12 plant. These interim measure included:

- Bimonthly discrete item inventories performed and reconciled in all enriched uranium areas.
- Increased the use of tamper indication devices (TID's) on items containing SNM not in vaults as well as doors on vaults, cages, rooms, and equipment that contain SNM.
- Strengthening the Daily Administrative Checks process to assure effectiveness of interim measures including the verification of new applied (TID's). These checks are performed at random times by different individuals.
- Enhancing the Nondestructive Assay Program (NDA) program in support of inventory: 1) Random NDA checks on high equity items, 2) NDA measurements on selected equipment containing SNM, 3) NDA measurements used to maintain continuity of knowledge on unmeasured salvage items.
- On incoming shipments of SNM, confirmatory weight and NDA measurements are made.

In the case of the material received from Kazakhstan in 1994 a decision was made and agreed to by the Under Secretary, that the United States receivers accountability measurements would be made at the blender site; Babcock & Wilcox (B&W). This decision was made in recognition of the fact that without the processing capability of (Building 9212), the required receiver accountability measurements could not be made. All of this material was subjected to transfer checks/confirmatory checks were performed at the Y-12 Plant upon receipt.

memorandum

DATE: February 27, 1996

REPLY TO
ATTN OF: EM-62 (M. Daugherty, 301-903-9978)

SUBJECT: Official Draft Report on "Audit of Internal Controls Over Special Nuclear Materials" dated February 15, 1996

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services

The Office of Environmental Management (EM) Office of Nuclear Material and Facility Stabilization (EM-60) welcomes our first opportunity to review and provide comments (attached) to the subject report. We support the report's two recommendations, if strictly implemented according to the Office of Security Evaluations January 1995 report, "Increasing Fissile Inventory Assurance Within the U.S. Department of Energy."

We are concerned however, that neither we nor the Rocky Flats Field Office (one of two EM sites identified in the report) were aware of the original audit report's release until January 1996, while other departmental elements received the original version for comment/concurrence in October 1995. While we appreciate the significant and justifiable changes made to the October 1995 version of the report, in order to provide thoughtful and complete responses to future draft IG reports, we request more timely distribution to appropriate EM headquarters and field staff.

If you have any questions, please contact Maurice Daugherty, Safeguards and Security Team Leader (EM-62) at 301-903-9978.



Jill E. Lytle
Deputy Assistant Secretary for
Nuclear Material and Facility Stabilization
Office of Environmental Management

Attachment

cc:

E. Feldt, EM-62

B. Smith, EM-64

R. Martinez, EM-65

ATTACHMENT

EM Comments to IG Report on the "Audit of Internal Controls Over Special Nuclear Materials"

Comment #1 PART II: RECOMMENDATIONS Section

Although we fully support both recommendations, we are concerned that the intent of the first sentence in this section could imply that the Director, Office of Nonproliferation and National Security (NN) should lead the resolution of the report's two recommendations. The January, 1995 Office of Security Evaluations (SE) report, Increasing Fissile Material Inventory Assurance Within the Department of Energy, which you have designated as the framework for resolving materials measurement and physical inventory concerns at EM sites, specifically calls for the "establishment of a steering group consisting of representatives from Headquarters program offices, the Headquarters Office of Safeguards and Security, operations offices, and DOE facilities." Further, the report states, "Headquarters elements, including cognizant secretarial officers and Security Affairs, should lead an effort to evaluate the closure of open transactions." Moreover, your characterization of NN's comments in PART III as "responsive to the intent of the revised recommendations" suggests that the NN-led Fissile Material Assurance Working Group has become the de facto steering group called for in the SE report; when in fact representation on NN's group does not currently meet SE report criteria (i.e. neither the Office of Environmental Management nor the Office of Defense Programs - two departmental programs most responsible for the day-to-day management of fissile material - are not included even as members, let alone co-leaders of NN's group).

It is requested that the IG revise the recommendation introduction sentence to accurately capture the intent of the SE report regarding the formulation, composition, leadership and charter of the steering group. Additionally, request the IG review its auditor comments in PART III, as it appears, given the foregoing, that NN's response may not be responsive to the specific intent of the subject report.

Comment #2 OBSERVATIONS AND CONCLUSIONS Section

The last sentence of the second paragraph on page 5 states "...inventory values were based on inaccurate measurement techniques and equipment, or estimates." While this may be true, the measurement techniques and equipment used were state-of-the-art at the time, and measurement results are inaccurate only when compared with the more sophisticated measurement techniques and equipment of today. Additionally, estimates were used only when a suitable measurement technique was non-existent.

It is requested that the IG incorporate this concept of "evolution of MC&A techniques and equipment" to balance the second paragraph.

United States Government

Department of Energy
Rocky Flats Field Office

memorandum

DATE: FEB 22 1996

REPLY TO
ATTN OF: AMESHPA:SSG:09570

SUBJECT: Office of Inspector General Official Draft Report on "Audit of Controls and Accountability of Special Nuclear Material"

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services, IG-30, HQ

Per your request, the Rocky Flats Field Office (RFFO) is providing the attached comments on the subject report. We agree that the required bi-monthly inventories were not always performed for each Material Balance Area (MBA) between 1990 and 1995, due to various safety concerns and building operability problems. In August 1995, the RFFO approved an extension to the inventory frequency for 5 of the 17 Category I MBAs, but no other extensions or waivers have been approved.

Due to safety concerns of handling potentially unstable material, several of the items selected by the sampling plan can not be fully inventoried. The Site is aggressively working to resolve these safety concerns by September 30, 1996. Until all safety restrictions can be lifted, the inventories will be coordinated such that restricted items selected for inventory will be given priority on the brushing and repackaging schedule to maximize the number of items available for inventory.

Building operability problems will continue to be a challenge at Rocky Flats. The Site is working to rewrite the building authorization basis for each facility which should help to minimize building shutdowns.

The Site is aggressively pursuing consolidation of Special Nuclear Material (SNM) into Building 371 or a new underground passive storage vault. The Site is also reducing the amount of SNM stored at the site by shipping it to other DOE facilities as missions allow. In addition, approximately one metric ton of oxide has been placed under International Atomic Energy Agency Safeguards. These activities should further the Site's ability to meet the intent of DOE Order 5633.3B in the performance of physical inventories.

The inventory problems stated in this report have been documented in previous Safeguards and Security Periodic Surveys conducted by RFFO and Office of Security Evaluations, Inspection and Evaluations. These reviews have always concluded that, based on the internal controls in place, SNM at the Site is not at risk.

Mark N. Silverman
Manager

Attachment

Comments on Official Draft Report
“Audit of Internal Controls Over Special Nuclear Materials”

1. Page 4, first paragraph: The Material Control and Accountability (MC&A) Plan does not ensure an effective security program by itself. The Site Safeguards and Security Plan details the protective force, fences, alarms, detection devices, and other security systems. These two plans together provide for a comprehensive Safeguards and Security Program.
2. Page 4, first paragraph: The report references administrative controls and mentions physical inventory and measurements. Administrative controls include much more than just these two elements. The Rocky Flats Environmental Technology Site (Site) does have several other administrative (internal) control mechanisms in place to provide assurance that special nuclear material is not at risk. These are described as follows:
 - The Site requires that Nuclear Material Control and Operations personnel be present at any vault/vault type room (V/VTR) whenever opened. Subsequent to these material control measures, all movements of Category I quantities of material into or out of a V/VTR, must be approved in writing by Safeguards personnel. All material leaving or entering the V/VTR is witnessed by these two independent groups. In addition, a Nuclear Material Control person is located inside the V/VTR providing surveillance of all activities occurring within the vault. If the V/VTR has been identified as a Critical Point Target, Wackenhut Services Inc. (WSI) security police officers are also present while the V/VTR is open. If Category I material is being processed outside of a V/VTR, material surveillance measures are implemented as well as an enhanced security posture until the material is returned to the V/VTR. Rocky Flats is the only DOE Site that has implemented this type of internal control mechanism.
 - Tamper Indicating Devices (TIDs) are placed on all material containers stored within V/VTRs. Access to the V/VTRs is strictly controlled and the two-person rule is in affect for all material handling operations. All Nuclear Material Control and operations material handlers, and WSI personnel are part of the Personnel Security Assurance Program. This program includes extensive security investigations with follow-up checks for individuals directly responsible for Special Nuclear Material (SNM).
 - All V/VTRs have the required security systems in operation.
 - Tanks containing category I and II SNM bearing solutions are under closed circuit television surveillance, have locking devices on the control valves, and TIDs applied to detect movement of liquids.
3. Page 6, last paragraph and Page 7 first paragraph: Suggest that the word “vulnerability” in the first line on page 7 be replaced with “attractiveness” and “vulnerable” in the second line be replaced with “attractive.” Also, suggest deleting “(vulnerability)” in the first paragraph on page 7. Attractiveness is the word commonly used to describe the value of the material to a potential adversary. The higher the concentration of SNM the more attractive the material. The more attractive the material the greater the protection required, which in theory makes it less vulnerable. The use of the term vulnerable in this sense may portray the wrong meaning to uninformed readers.
4. Page 7, first paragraph: Per DOE Order 5633.3B, low-grade nuclear materials can be inventoried on a biennial frequency, not annually as stated.

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: March 5, 1996

REPLY TO: FM-733:Miller

ATTN OF:

SUBJECT: COMMENTS ON OFFICIAL DRAFT REPORT ON "AUDIT OF CONTROLS AND ACCOUNTABILITY OF SPECIAL NUCLEAR MATERIALS"

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services, IG-30,
Room 5A-179, FORS

In accordance with your February 15, 1996, memorandum, Oak Ridge Operations Office (ORO) has reviewed the subject official draft report, and our comments are provided as an attachment to this memorandum. These comments include actions taken since ORO's response to the initial draft report in November 1995.

If you have any questions, please contact Jeanette Miller, ORO Audit Liaison Program Manager, at (423) 576-2654.


P. T. Marquess
Chief Financial Officer

Attachment

cc w/attachment:

B. Cochran, FM-732

J. Rofling, NN-1/FORS

OAK RIDGE OPERATIONS OFFICE COMMENTS
IG OFFICIAL DRAFT REPORT
"AUDIT OF CONTROLS AND ACCOUNTABILITY OF
SPECIAL NUCLEAR MATERIALS"

MANAGEMENT RESPONSE

Oak Ridge Operations Office (ORO) concurs in the Inspector General (IG) audit finding and recommendations that physical inventory and material measurements at Y-12 for special nuclear material (SNM) receipts as required by DOE Order 5633.3B should be performed. ORO believes there is no credible substitute or alternative to a full physical inventory and all reasonable effort should be made to independently measure receipts of SNM. Historically, ORO has demonstrated a commitment to periodic physical inventory and, where possible, measurement of received material at Y-12, and it is only due to the safety concerns associated with the stand down that these accountability measures were not being performed at the time of the audit.

In our effort to mitigate the risk of not performing physical inventory or measurement of received material, a program of compensatory materials control and accountability (MC&A) actions, which has been concurred in by DOE Headquarters (HQ), has been taken since the audit. We believe that the combination of compensatory actions and the continued effective physical security and material control that did not diminish during the stand down provide adequate control and acceptable levels of accountability for SNM at Y-12.

The compensatory actions include increased surveillance measures and enhanced nondestructive assay (NDA) measurements of selected equipment and items as well as bimonthly discrete item inventory in all enriched uranium areas. In addition, since the audit, 28 of the Y-12's 37 material balance areas (MBA's) have resumed, and full physical inventory has been performed. No anomalies were detected and all material was accounted for. Y-12 will perform a full physical inventory in any SNM area upon resumption and prior to any handling or processing of material.

For receipts of nuclear material, a program or protocol has been instituted whereby a Y-12 representative will go to a shipper site to observe and/or certify measurements of SNM prior to shipment to Y-12 when full measurement at Y-12 cannot be performed because of the stand down. Also, since the audit, warehouse receipt operations have resumed, and normal confirmatory weight and NDA measurements are now being performed on any received material. Since processing would be required to measure Sapphire material, which could not be done at Y-12 due to the safety stand down, this material has been shipped to a commercial vendor for processing and measurement.

United States Government

Department of Energy

Oak Ridge Operations

memorandum

DATE: March 13, 1996

REPLY TO: FM-732:Cochran
ATTN OF:

SUBJECT: THE OFFICE OF INSPECTOR GENERAL'S AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIAL

TO: John C. Layton, Office of Inspector General, IG-1, Room 5D-039, FORS

As indicated in our response to the Office of Inspector General's (OIG) initial draft report, we agree with the OIG's assessment that full physical inventory and measurement of special nuclear material (SNM) were not being conducted at the Y-12 Plant at the time of the subject audit. We also concur with the report's recommendation that the Department of Energy (DOE) should work to conduct inventories and measurement of SNM according to DOE requirements. Historically, Oak Ridge Operations Office (ORO) has demonstrated a commitment to perform physical inventory of its SNM and, to the extent possible, independent measurement of received nuclear material at Y-12. As recognized in the OIG's draft report, bimonthly physical inventories of SNM at the Y-12 Plant were discontinued because the Plant was placed in a stand down condition in September 1994 in reaction to safety concerns raised by the Defense Nuclear Facilities Safety Board (DNFSB). In this stand down condition, nuclear material personnel were not permitted access to the nuclear materials, therefore, no inventories or confirmatory measurements could initially be conducted.

We fully recognized our noncompliance with DOE Order 5633.3B and early on began working with the Office of the Assistant Secretary for Defense Programs and the Office of Nonproliferation and National Security to address the noncompliance issues and mitigate any risks. In this regard, we requested an exception from the order in October 1995, which was disapproved by the Office of Security Affairs (OSA) in November 1995. Although denying the exception, OSA and the Headquarters Program Office agreed that interim compensatory measures in place at the Y-12 Plant were partially mitigating the risks. These actions include increased surveillance measures, enhanced nondestructive assay (NDA) measurement of selected equipment and items, and bimonthly discrete item inventory in enriched uranium storage areas. OSA also recommended that Y-12 continue to take steps to reinstate all materials control and accountability measures in order to bring the facility into compliance, including conducting a complete physical inventory at each affected facility prior to resumption of operations.

It should be recognized that during the stand down at Y-12, material control and physical protection of SNM have not diminished. While physical inventories and measurement of SNM were not being performed at the time of the OIG's audit, and while important, they are only one part of the total SNM safeguards and security protection program. We believe that the combination of compensatory actions mentioned above, and the continued

United States Government

Department of Energy

Idaho Operations Office

memorandum

DATE: February 26, 1996

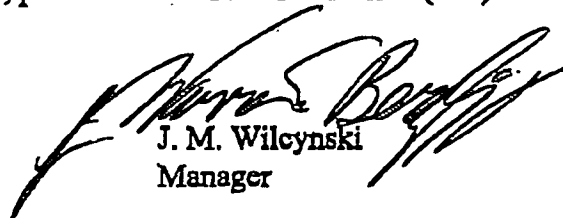
SUBJECT: Response to Draft IG Report on Internal Controls Over Special Nuclear Materials
(OCS/SRM-96-04)TO: Charles B. Curtis, Deputy Secretary
DOE-HQ, S-2, 7B-252/FORS

The official draft report from IG-30 on the "Audit on Internal Controls Over Special Nuclear Materials," received February 15, 1996, has been reviewed. The report correctly asserts that "the controls related to periodic scheduled physical inventories were not operating as initially intended" at Idaho Operation Office (ID) facilities at the time of their review. No vulnerabilities were created by the delayed inventories. Risks were effectively mitigated by the substantial physical protection measures inherent at the facility.

The report states that "Some nuclear materials stored at the Idaho National Engineering Laboratory (INEL) were not inventoried on a semiannual basis as required because of safety concerns over the way materials were being stored." Delays did occur during the three semiannual inventories prior to the October 1995 inventory at the Idaho Chemical Processing Plant (ICPP). The most current inventory, conducted in October 1995, was completed on schedule. Safety concerns that caused extension of past inventory efforts have been resolved. The phrase "because of safety concerns over the way materials were being stored," is misleading in that the issues have revolved around specific technical standard level controls and potential unresolved safety questions at the Unirradiated Fuel Storage Facility at the ICPP, not the "way materials were being stored."

The report also notes that "Idaho planned to submit a request in October 1995 for a waiver to conducting physical inventories for populations of special nuclear materials where safety problems still need to be corrected." Because inventories are currently being completed, such a request was not submitted. Results to date have not indicated a problem.

The report is generally accurate with some editorial comments needed to clarify the situation at the INEL. If you have questions, please contact Robert Green at (208) 526-2216.



J. M. Wilcynski
Manager

CUSTOMER RESPONSE FORM

The Office of Inspector General has a continuing interest in improving the usefulness of its products. We wish to make our reports as responsive as possible to our customers' requirements, and therefore ask that you consider sharing your thoughts with us. On the back of this form, you may suggest improvements to enhance the effectiveness of future reports. Please include answers to the following questions if they are applicable to you:

1. What additional background information about the selection, scheduling, scope, or procedures of the audit or inspection would have been helpful to the reader in understanding this report?
2. What additional information related to findings and recommendations could have been included in this report to assist management in implementing corrective actions?
3. What format, stylistic, or organizational changes might have made this report's overall message more clear to the reader?
4. What additional actions could the Office of Inspector General have taken on the issues discussed in this report which would have been helpful?

Please include your name and telephone number so that we may contact you should we have any questions about your comments.

Name _____ Date _____

Telephone _____ Organization _____

When you have completed this form, you may telefax it to the Office of Inspector General at (202) 586-0948, or you may mail it to:

Office of Inspector General (IG-1)
Department of Energy
Washington, DC 20585

Attn: Customer Relations

If you wish to discuss this report or your comments with a staff member of the Office of Inspector General, please contact Wilma Slaughter on (202) 586-1924.



Report on **Audit of Internal Controls Over Special Nuclear Materials**

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED 85

[illegible]

Your comments would be appreciated and can be provided on the Customer Response Form attached to the report.

Appended to this report are source documents that cannot be transmitted electronically due to technological limitations.

Therefore, the audit report is not available on the Internet. You may obtain a copy of the report by contacting Wilma Slaughter at (202) 586-1924, or by writing to:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, Tennessee 37831

memorandum

DATE: April 4, 1996

REPLY TO
ATTN OF: IG-1

SUBJECT: INFORMATION: Report on "Audit of Internal Controls Over
Special Nuclear Materials"

TO: The Secretary

BACKGROUND:

The Department of Energy (Department) is responsible for safeguarding a significant amount of plutonium, uranium-233 and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. The Department's Office of Nonproliferation and National Security has overall management cognizance for developing policies for safeguarding these materials, while other Headquarters program offices have "landlord" responsibilities for the sites where the materials are stored, and the Department's operations and field offices provide onsite management of contractor operations. The Department's management and operating contractors, under the direction of the Department, safeguard and account for the special nuclear material stored at Department sites.

DISCUSSION:

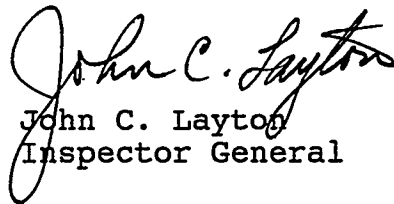
The Office of Inspector General audited internal controls over special nuclear materials at the Hanford Site, Rocky Flats Environmental Technology Site, Los Alamos National Laboratory, Oak Ridge Y-12 Plant, Pantex Plant, Idaho National Engineering Laboratory, and Argonne-West National Laboratory. The objective of the audit was to determine the adequacy of internal controls over special nuclear materials.

The audit disclosed that management at three sites had not performed all required physical inventories, and one site did not perform measurements, due to safety concerns and operational interruptions. The audit did not disclose that any special nuclear materials were missing. However, the longer complete physical inventories are delayed, the greater the risk that unauthorized movement of special nuclear materials could occur and go undetected.

The report recommended that the Department (1) conduct the required physical inventories, and (2) implement program enhancements suggested in the January 1995 report, Increasing Fissile Inventory Assurance Within the U.S. Department of Energy. The recommendations will bring the Department into



compliance with the Department Order 5633.3B, "Control and Accountability of Nuclear Materials." Management concurred with the recommendations and indicated that it planned to take corrective actions. Further, the operations and field offices, as well as the cognizant Headquarters program offices, provided details on a number of measures that had been implemented and/or were planned to reduce the potential risks identified in the report. Management's comments are summarized in Part III, and are attached in their entirety in Appendix B. These comments are an integral part of this report.


John C. Layton
Inspector General

Attachment

cc: Deputy Secretary
Acting Under Secretary

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL

AUDIT OF
INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

Report Number: DOE/IG-0388
Date of Issue: April 4, 1996

Western Regional Audit Office
Albuquerque, NM 87185-5400

AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY.....	1
PART I - APPROACH AND OVERVIEW.....	3
Introduction.....	3
Scope and Methodology.....	3
Background.....	4
Circumstances Affecting the Audit.....	5
Observations and Conclusions.....	6
PART II - FINDING AND RECOMMENDATIONS.....	7
Controls Over Special Nuclear Materials.....	7
PART III - MANAGEMENT AND AUDITOR COMMENTS.....	11
APPENDIX A	
APPENDIX B	

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDIT SERVICES
WESTERN REGIONAL AUDIT OFFICE

AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIALS

Audit Report Number: DOE/IG-0388

SUMMARY

The Department of Energy (Department) is responsible for safeguarding a significant amount of plutonium, uranium-233, and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. The Office of Nonproliferation and National Security has overall management cognizance for developing policies to safeguard these materials, while other Headquarters program offices have "landlord" responsibilities for the sites where the materials are stored and the Department's operations and field offices provide onsite management of contractor operations. The Department's management and operating contractors safeguard and account for the special nuclear materials entrusted to them at Departmental sites. The objective of the audit was to determine the adequacy of internal controls, specifically physical inventories and measurements, over these materials.

The audit disclosed that management at three sites had not performed all required physical inventories, and one site did not perform measurements, due to safety concerns and operational interruptions. The audit did not disclose that any special nuclear materials were missing. However, the longer complete physical inventories are delayed, the greater the risk that unauthorized movement of special nuclear materials could occur and go undetected.

We recommended that the Department work to conduct inventories and measurements of special nuclear materials according to Department requirements and to fully implement program enhancements suggested in a January 1995 internal report on this subject.

The Offices of Nonproliferation and National Security, Defense Programs, Environmental Management, and the Rocky Flats Field Office, Oak Ridge Operations Office, and Idaho Operations Office commented on the report. These offices generally concurred with the finding and recommendations. Several

of the offices provided details on a number of measures that had been implemented and/or were planned to reduce the potential risks identified in the report. All comments are summarized in Part III, and attached in their entirety in Appendix B.

Office of Inspector General
OFFICE OF INSPECTOR GENERAL

PART I

APPROACH AND OVERVIEW

INTRODUCTION

The Department is responsible for safeguarding a significant amount of plutonium, uranium-233, and enriched uranium--collectively referred to as special nuclear materials--stored in the United States. Because of the wide public and international interest in safeguarding these resources, we conducted an audit of the Department's special nuclear materials inventories. The audit objective was to determine the adequacy of internal controls, specifically physical inventories and measurements, over these materials.

SCOPE AND METHODOLOGY

The audit was performed from August 9, 1994, through August 31, 1995. To review the internal controls and the accuracy of the inventories, we visited Department operations offices as well as management and operating contractors at the following seven sites: the Hanford Site, Rocky Flats Environmental Technology Site¹, Los Alamos National Laboratory, Pantex Plant, Oak Ridge Y-12 Plant, Idaho National Engineering Laboratory, and Argonne National Laboratory-West. These sites maintained about 94 percent of the Department's plutonium and 37 percent of the Department's enriched uranium held in inventory.

To determine whether the Department had adequate internal controls and accurately reported the quantity of special nuclear materials, we examined policies and procedures; tested accounting records; and, reviewed administrative and physical controls, including protective services.

Examination of policies and procedures at each site included:

- interviewing key materials control and accounting personnel, internal audit or assessment personnel, statisticians, and nuclear materials accounting and system personnel;
- reviewing applicable materials control and accounting plans to determine the adequacy of documented procedures such as inventory plans, inventory reconciliation plans, and the special nuclear materials accounting system;

¹ Since July 1, 1995, Rocky Flats has been managed by an integrating rather than a management and operating contractor. For simplicity, however, no distinction is made in this report.

- identifying the major data bases used to account for special nuclear materials and conducting tests to determine the reliability of the Department's data base;
- documenting the input and update methods, reviewing data validation techniques, identifying recurring reports, and querying the data base to test the accuracy of the site's listing of special nuclear materials; and,
- reviewing the most recent 12 months of material inventory reconciliations and comparing the data to each site's documentation from the Department's Nuclear Materials Management and Safeguards System and reviewing explanations for the normal operating losses and inventory differences reported during the 12-month period.

At each location visited, we used a discovery sampling methodology to randomly select 22 to 23 inventory items from the inventory lists and attempted to trace the items to their physical locations. We used an accepted Governmental statistical sampling plan to make sample selections. In addition, we judgmentally selected items from storage locations and compared the items back to the inventory listings.

The audit was performed in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the objective of the audit. Accordingly, we assessed the significant internal controls with respect to the inventory of special nuclear materials. Our assessment consisted of identifying the internal control procedures in place and testing the accuracy of program records. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We did not rely extensively on computer-processed data because we were uncertain, in some cases, of its reliability.

We discussed our finding and recommendations with the Principal Deputy Director, Office of Nonproliferation and National Security, and members of his staff in September 1995. Subsequently, we also discussed the finding and recommendations with other Department program and field offices which are addressees of this report.

BACKGROUND

Department Order 5633.3B, "Control and Accountability of Nuclear Materials," identifies responsibility for complying with the procedures to safeguard special nuclear materials. Under the Order, the Department's Office of Nonproliferation and National Security has overall management cognizance for developing policies for safeguarding these materials, while operations

offices provide onsite management of contractor operations. The Department's contractors safeguard and account for the special nuclear materials at the sites at which these materials are stored.

As required under the Order, each site develops a Materials Control and Accountability Plan which provides an integrated system of physical and administrative controls that ensure special nuclear materials are not removed without proper authorization. Also required is a Site Safeguards and Security Plan detailing the protective forces, fences, alarms, detection devices, and other security systems. Administrative controls include materials measurements, physical inventories, and other mechanisms. Although physical controls provide assurance that materials are not removed, materials measurements and physical inventories serve to confirm that materials are actually located in assigned locations and in the correct quantities. Physical inventories also serve to confirm that the record of accounts is properly maintained.

CIRCUMSTANCES AFFECTING THE AUDIT

We designed our sampling methodology, including the selection of 22 to 23 sample items at each location, to allow us to reach a conclusion as to the accuracy of special nuclear materials inventories. To adequately verify the accuracy of the special nuclear materials inventory lists, we needed not only to verify an item's location but also to ascertain its weight and type. However, we could not verify certain inventory items beyond comparing inventory records and charts to materials storage positions. For example, portions of the Department's special nuclear materials inventory were:

- inaccessible, such as fuel rods in reactors or spent fuel encapsulated under several feet of water;
- part of assembled weapons;
- stored in containers that could not be opened without specialized equipment and trained personnel;
- sealed in storage areas which could not be readily accessed for verification; and,
- inaccessible because of safety restrictions that prevented moving storage containers.

Because of these limitations, we were unable to properly complete our statistical sample of the Department's special nuclear materials inventory. As a result, the audit's primary focus became the adequacy of internal accounting controls, specifically physical inventories and measurements.

OBSERVATIONS AND CONCLUSIONS

The audit disclosed that required physical inventories were not made at three locations and that at one location several shipments of special nuclear materials were not measured. In each case, we found that the responsible contractor responded to external safety or operating concerns by interrupting the required schedule of physical inventories or measurements. We therefore recommended that the Department work to complete required inventories and measurements.

We also recommended that the Department fully implement the suggested program enhancements listed in the January 1995 internal report issued by the Deputy Assistant Secretary for Security Evaluations (Increasing Fissile Inventory Assurance Within the U.S. Department of Energy--referred to as the Security Evaluations Report). This report questioned selected inventory records for special nuclear materials. The Security Evaluations Report stated that those records were based on estimates and that materials were not accurately measured or could not be defended due to the lack of appropriate records. According to the report, there are large inventory differences stemming from the early years of the weapons program when inventory values were based on inaccurate measurement techniques and equipment, or estimates.

The Security Evaluations Report recommendations included establishment of a comprehensive, Departmentwide program with Headquarters-level guidance to ensure accurate inventory measurements across the Department. Establishment of a steering group charged with tracking and monitoring progress was also recommended.

Because of the limitations affecting our ability to execute the audit sampling methodology, we did not reach a conclusion on the accuracy of the inventories. At the sites we visited, we found no evidence that special nuclear materials had been lost or misused. However, if the Department does not fully address the concerns raised by its Security Evaluations Report and by the audit, there is an increased risk that unauthorized movement of nuclear materials could occur and go undetected.

PART II

FINDING AND RECOMMENDATIONS

Controls Over Special Nuclear Materials

FINDING

Department policy is to assure that special nuclear materials are safeguarded against unauthorized removal by maintaining stringent accounting, physical, and administrative controls, including periodic physical inventories and measurements. We found that at three locations, however, the responsible management and operating contractors had not performed all required physical inventories, and at one site did not perform measurements, due to safety concerns and operational interruptions. A recent internal Departmental report also noted weaknesses in the measurement of and accounting for special nuclear materials. Although the audit did not disclose instances of missing special nuclear materials, delays in required periodic physical inventories increase the risk that unauthorized movement of such materials could go undetected.

RECOMMENDATIONS

We recommend the Director, Office of Nonproliferation and National Security, in conjunction with cognizant operations offices and Headquarters program offices²:

1. Work to complete inventories and measurements of special nuclear materials as required by DOE Order 5633.3B; and,

2. Fully implement program enhancements suggested in the January 1995 report, Increasing Fissile Inventory Assurance Within the U.S. Department of Energy.

MANAGEMENT REACTION

The Offices of Nonproliferation and National Security, Defense Programs, Environmental Management, and the Rocky Flats Field Office, Oak Ridge Operations Office, and Idaho Operations Office generally concurred in the Finding and Recommendations. All comments are summarized in Part III, and attached in their entirety in Appendix B. These comments are an integral part of this report.

DETAILS OF FINDING

Internal controls are defined as management's plan of organization, methods, and procedures to ensure that resource use is lawful; that resources are safeguarded against waste, loss, and misuse; and that reliable data are maintained. Management

² Please refer to Appendix A for a listing of the applicable offices.

has the responsibility for developing and maintaining a comprehensive, integrated system of controls that provides full accountability for its resources.

One key component of these controls is the periodic physical comparison of the resources with recorded amounts to determine whether the two agree. This comparison is commonly referred to as "taking inventory," and its frequency is generally a function of the resource's attractiveness to unauthorized use or loss. Consequently, more attractive resources are inventoried more frequently than those less likely to be lost or misused. Managers should also take frequent inventories when the loss of a resource could seriously affect safety or national security.

Within the Department, controls over special nuclear materials are governed by Department Order 5633.3B. The Order requires that physical inventories be conducted at least bimonthly (every 2 months), semi-annually, annually, or biennially, depending on the type and attractiveness of the material. Plutonium in process, for example, usually has bimonthly inventory requirements. On the other hand, low-grade nuclear materials in the form of residues and solutions are to be inventoried biennially.

In addition to establishing inventory intervals, the Order also provides controls over the shipping and receiving of nuclear materials. Specifically, receivers are required to measure and record each shipment within 10 to 180 days of receipt, depending again on the material's vulnerability to loss or misuse. Within the required time, shipments must be accurately recorded to ensure complete, accurate records and to prevent unauthorized movement of nuclear materials.

There are additional overlapping controls such as physical protection measures which ensure that nuclear materials are safeguarded. Such controls include fences, guard forces, and other related measures at each site. The effectiveness of the overall internal control environment is based on the operation of these controls, together with the priority management places on internal controls.

INVENTORIES AND MEASUREMENTS

The audit disclosed that at 3 of 7 sites visited, management controls over nuclear materials, specifically the controls related to periodic scheduled physical inventories, were not operating as initially intended. At the Rocky Flats Environmental Technology Site, Oak Ridge Y-12 Plant, and Idaho National Engineering Laboratory, physical inventories were not conducted in strict accord with required schedules. Additionally, on several occasions, the Oak Ridge Y-12 Plant did not measure the receipt of nuclear materials.

Rocky Flats Environmental Technology Site

Special nuclear materials at Rocky Flats Environmental Technology Site (Rocky Flats) have a bimonthly standard inventory interval. The management and operating contractor, however, did not perform physical inventories for extended periods of time. At the time of our audit, for example, computer-controlled storage areas had not been inventoried for as long as 9 months, items in glove box lines were not verified for periods of up to 4 months, and items in vault and vault-type rooms had not been statistically sampled or inventoried since May 1993, a period of more than 24 months. The inventories that were performed at Rocky Flats were limited to a record review and verification that the inventory item was at its recorded location, as opposed to complete physical verification and measurement.

Rocky Flats did not conduct the required physical inventories at the required intervals because of a 1989 investigation by the Environmental Protection Agency and the Federal Bureau of Investigation. The investigation questioned the manner in which the contractor was handling certain hazardous wastes. In reaction to this investigation, operations were shut down in December 1989 and the frequency of inventories was interrupted. In October 1994, Rocky Flats experienced safety problems and again interrupted inventory schedules. Rocky Flats did not request a waiver from physical inventory requirements on either occasion when inventories were interrupted. Instead, Rocky Flats considered existing physical controls to be sufficient in safeguarding the special nuclear materials from loss or unauthorized diversion.

Oak Ridge Y-12 Plant

Bimonthly physical inventories were required at the Oak Ridge Y-12 Plant (Y-12). However, the management and operating contractor stopped conducting complete physical inventories--and instead began performing item inventories with less than complete physical verification--in July 1994. Y-12 changed its inventory methodology because the contractor discontinued operations in reaction to safety concerns raised by the Defense Nuclear Facilities Safety Board (Board). The Board questioned the contractor's handling and storing of nuclear materials.

Based on these concerns, the Manager, Oak Ridge Operations Office, submitted a formal request not to perform periodic physical inventories to the Assistant Secretary for Defense Programs. The request was referred to the Office of Safeguards and Security. Safeguards and Security, however, found the suspension of physical inventories unacceptable and disapproved the request in a memorandum dated January 5, 1995. The position taken by Safeguards and Security was based on its belief that the alternative controls did not adequately replace complete physical inventories. As of August 1995, Y-12 was still developing an action plan to resume regular inventories.

In addition to the problem with inventories, a second key control at Y-12--measurement and recording of nuclear materials shipments--was also not functioning as intended at the time of our visit. The management and operating contractor did not properly measure five shipments from domestic sources received between December 31, 1991, and September 14, 1994. These shipments ranged in size from 200 grams to over 80 kilograms. Consistent with the Department Order, measurements should have been completed within 10 to 180 days of receipt. Instead, the Y-12 management and operating contractor used the shipper's values rather than verifying the accuracy of the receipts. These shipments still had not been measured as of August 30, 1995, 171 to 374 days after being received at Oak Ridge.

Similarly, in November 1994, Y-12 received--but did not fully measure--a 581 kilogram shipment of special nuclear material from Kazakhstan. Although the material was measured prior to shipment, Y-12 did not perform its own measurements to verify the shipment receipts and properly record the material into its inventory records.

Idaho National Engineering Laboratory

Some nuclear materials stored at the Idaho National Engineering Laboratory (Idaho) were not inventoried on a semi-annual basis as required because of safety concerns. During the period covered by our audit, Idaho completed one inventory about 2 months late; however, safety problems were not expected to be corrected in time to assure that future inventories would be completed as scheduled. Idaho planned to submit a request in October 1995 for a waiver to conducting physical inventories for populations of special nuclear materials where safety problems still need to be corrected.

CONCLUSION

In recent years, safety and environmental concerns have caused interruptions in Departmental operations and in related scheduled physical inventories of special nuclear materials at several sites. As a result, we believe that all cognizant program elements--Nuclear Nonproliferation and the cognizant Headquarters program offices, and operations and field offices--need to work closely together to ensure that the Department implements a coordinated and consistent approach to fulfill special nuclear materials inventory and measurement requirements.

As stated in the internal Security Evaluations Report, the Department needs to demonstrate that it knows where all of its nuclear material is located so that it will be able to assure the public that all material has been removed during decommissioning of its facilities. Although our audit did not disclose that any special nuclear materials were missing, the longer complete physical inventories are delayed, the greater the risk that unauthorized movement of nuclear materials could go undetected.

PART III

MANAGEMENT AND AUDITOR COMMENTS

The Office of Inspector General received comments on a draft of this report from the Office of Nonproliferation and National Security; Defense Programs; Environmental Management; Rocky Flats Field Office; Oak Ridge Operations Office; and Idaho Operations Office. Comments are summarized below and attached in their entirety in Appendix B.

Nonproliferation and National Security Comments

The Office of Nonproliferation and National Security concurred with the finding and recommendations. The Principal Deputy Director stated that the recommendations were clearly within the scope of current Departmental safeguards and security policies. He added, however, that there must be more commitment on the part of Departmental program and field elements to provide necessary budgets and resources to ensure adequate nuclear material safeguards controls. According to the Principal Deputy Director, the Office of Nonproliferation and National Security is currently emphasizing and addressing these needs through an intra-agency working group.

In July 1995 the Department established the Fissile Material Assurance Working Group to provide Headquarters-level direction for increasing fissile material assurance in a coordinated, consistent and cost-effective manner. The Principal Deputy Director stated that the working group can serve to ensure that material measurements, verification, control and reporting activities are included within the infrastructure of ongoing Departmental element program planning and budgeting. Further, the charter of the working group includes specific activities aimed at implementing the recommendations in the January 1995 Security Evaluations Report.

Auditor Comments

Management's proposed corrective actions--establishing the fissile material working group, adopting the Security Evaluations Report recommendations, and seeking commitment from other Departmental elements--are responsive to the recommendations.

Defense Programs Comments

Defense Programs agreed in principle with the first recommendation to complete inventories and measurements as required by the DOE Order. The response stated, however, that the second recommendation, which suggested full implementation of program enhancements in the Security Evaluations Report, needed further clarification. Defense Programs noted that the Security Evaluations Report addressed seven problem areas and contained suggested enhancements for each. The response also questioned whether it was the OIG's intent that all of the potential

enhancements be fully implemented. It further suggested that the audit report should outline the leadership, scope, resources, expected results, and responsibilities for the fissile materials steering group.

Auditor Comments

The key recommendation in the Security Evaluations Report is the establishment of a steering group, consisting of representatives from Headquarters program offices, the Headquarters Office of Safeguards and Security, operations offices, and DOE facilities. The Security Evaluations Report then suggests 10 specific responsibilities the group should assume. Logically, once the working group was established and fully supported by Departmental elements, the group's membership would proceed to prioritize, revise where necessary, and implement the report's other recommendations as deemed appropriate.

Environmental Management Comments

The Deputy Assistant Secretary for Nuclear Material and Facility Stabilization fully supported both recommendations. She was concerned, however, that neither Environmental Management nor Defense Programs were included as members of the working group established by the Office of Nonproliferation and National Security. She stated that Headquarters elements should work together to lead the group. As a result, according to the Deputy Assistant Secretary, Nonproliferation and National Security's comments may not be responsive to the recommendations.

Auditor Comments

According to Nonproliferation and National Security, representatives from both Environmental Management and Defense Programs have participated in working group meetings. The Office of Inspector General, moreover, does not take a position on leadership of the working group. Rather, the OIG considers full participation by cognizant operations offices and Headquarters program offices critical to any group's success. As noted, Nonproliferation and National Security's comments included an admonition that "more commitment" was required of program offices. Environmental Management's comments, on the other hand, suggest that the working group already formed "may not be responsive." As we noted in our comments on the position of Defense Programs, management support for the working group is a prerequisite to implementing the recommendations of the Security Evaluations Report. One way to build this support would be for the working group to develop options for top management to consider in clarifying issues of leadership, participation by Department elements, communication, and protocol. Such issues should be resolved with dispatch so that the work required may proceed quickly and efficiently.

Rocky Flats Comments

The Manager, Rocky Flats Field Office agreed that required bi-monthly inventories were not always performed between 1990 and 1995 due to various safety concerns and building operability problems. He further stated that the Rocky Flats is aggressively working to resolve these concerns by September 30, 1996. Finally, the Manager stated that inventory problems have been documented in previous Departmental evaluations and these reviews have always concluded that, based on the internal controls in place, special nuclear materials at the site are not at risk.

Auditor Comments

The Manager's comments are responsive to the report recommendations.

Oak Ridge Comments

Oak Ridge concurred with the finding and recommendations. There is no credible substitute or alternative to a full physical inventory and all reasonable effort should be made to independently measure receipts of special nuclear materials.

According to Oak Ridge, since completion of the audit, it has implemented a number of compensatory materials control and accountability measurements to mitigate the risk of not performing physical inventories or measurements. The compensatory actions include increased surveillance measures and enhanced nondestructive assay measurements of selected equipment and items as well as bimonthly discrete item inventory in all enriched uranium areas. In addition, since the audit 28 of Y-12's 37 material balance areas have been physically inventoried and all materials were accounted for.

For receipts of nuclear material, Oak Ridge instituted a program whereby Y-12 representatives will go to shipper sites to observe and certify measurements prior to shipment when full measurement at Y-12 cannot be performed due to a stand down. Also, warehouse receipt operations have resumed and normal confirmatory weight and nondestructive assay measurements are now being performed on received material. Since physical measurements of the materials received from Kazakhstan were not performed at Y-12 due to the stand down, the materials have been shipped to a commercial vendor for processing and measurement.

Auditor Comments

Oak Ridge actions are responsive to the report recommendations.

Idaho Comments

The Manager, Idaho Operations Office stated that the report correctly asserts that controls relating to scheduled physical inventories were not operating as initially intended at the Idaho National Engineering Laboratory. He also stated that the delayed inventories created no vulnerabilities, and that risks were effectively mitigated by the facility's substantial physical protection measures. Further, safety concerns that earlier delayed conduct of three inventories have been resolved, and inventories have resumed. As a result, in October 1995 the Idaho National Engineering Laboratory did not submit a planned request for a waiver to conduct physical inventories.

Auditor Comments

The Manager's comments are responsive to the report recommendations.

APPENDIX A

COGNIZANT OPERATIONS OFFICES AND HEADQUARTERS PROGRAM OFFICES

<u>DOE Site</u>	<u>Operations or Field Office</u>	<u>"Landlord"</u>
Rocky Flats Environmental Technology Site	Rocky Flats Field Office	Environmental Management
Oak Ridge Y-12 Plant	Oak Ridge Operations Office	Defense Programs
Idaho National Engineering Laboratory	Idaho Operations Office	Environmental Management

APPENDIX B

MANAGEMENT COMMENTS IN THEIR ENTIRETY

As appropriate, specific comments from management are reflected in the text of the audit report itself.



Department of Energy

Washington, DC 20585

February 22, 1996

MEMORANDUM FOR GREGORY H. FRIEDMAN
DEPUTY INSPECTOR GENERAL FOR AUDIT SERVICES

FROM: *K. Baker* KENNETH E. BAKER
PRINCIPAL DEPUTY DIRECTOR
OFFICE OF NONPROLIFERATION AND NATIONAL SECURITY

SUBJECT: INSPECTOR GENERAL'S INITIAL DRAFT REPORT ON THE AUDIT OF
CONTROLS AND ACCOUNTABILITY OF SPECIAL NUCLEAR MATERIAL

The Office of Nonproliferation and National Security appreciates this second opportunity to review and comment on the Inspector General's draft report on the audit of Internal Controls Over Special Nuclear Materials. Our comments to the Inspector General's official draft report are attached. In addition to a general comment and a management position to recommendation, please note our specific comment.

Attachment

cc: R. Speidel, Manager, Management and Internal Controls, NN-10
E. McCallum, Director, Office of Safeguards and Security, NN-51

**Comments on
the Inspector General's Official Draft Report
"Audit of Internal Controls Over Special Nuclear Materials"**

General Comments:

We concur with the findings and recommendations contained in the draft report. The recommendations are clearly within the scope of current Departmental safeguards and security policies. However, there must be more of a commitment on the part of Departmental program and field elements to provide necessary budgets and resources to ensure adequate nuclear material safeguards controls. The Office of Nonproliferation and National Security is currently emphasizing and addressing these needs through an intra-agency working group.

Specific Comments:

Page 10, "PART III - MANAGEMENT AND AUDITOR COMMENTS," third paragraph, second sentence - This sentence gives the impression that facilities are associated with this office. The sentence should read: **"Also, the Office of Nonproliferation and National Security recommends that modified requirements for conducting safeguards and security activities, such as alternative control and assurance measures, be conducted when scheduled approaches to physical inventories can not be performed will be included in the facility's materials control and accountability plan."**

The Office of Nonproliferation and National Security believes that the previous recommendation, contained in the initial draft report, should be included in this report as well.

Finding

Department policy is to assure that special nuclear materials are safeguarded against unauthorized removal by maintaining stringent accounting, physical, and administrative controls, including periodic physical inventories and measurements. We found that at three locations, however, the responsible management and operating contractors had not performed all required physical inventories, and at one site did not perform measurements, due to safety concerns and operational interruptions. A recent internal Departmental report also noted weaknesses in the measurement of and accounting for special nuclear materials. Although the audit did not disclose instances of missing special nuclear materials, delays in required periodic physical inventories increase the risk that unauthorized movement of such materials could go undetected.

Recommendations

"We recommend the Director, Office of Nonproliferation and National Security, in conjunction with cognizant operations offices and Headquarters program offices:"

1. Work to complete inventories and measurements of special nuclear materials as required by DOE Order 5633.3B.

Management Comment

Concur.

Maintaining an infrastructure within the Department and routinely performing accurate measurements are critical to the ongoing stabilization, disposition, decontamination and decommissioning and selection of materials for international inspections activities throughout the Department. In an effort to address this issue as a part of ongoing initiatives resulting from mission changes, in July 1995 the Department established the Fissile Material Assurance Working Group. The purpose of this working group is to provide Headquarters-level direction for increasing fissile material assurance in a coordinated, consistent and cost effective manner. This working group can serve to ensure that vital safeguards requirements such as material measurements, verification, control and reporting activities--all fundamental elements of nuclear material physical inventories--are included within the infrastructure of ongoing Departmental element program planning and budgeting.

2. Fully implement program enhancements suggested in the January 1995 report, Increasing Fissile Inventory Assurance Within the U.S. Department of Energy.

Management Comment

Concur.

The January 1995 report coincidentally identified several recommendations to address deficiencies contained in the Inspector General audit. **The current charter of the Fissile Material Assurance Working Group includes these recommendations in the list of specific activities.** Collateral issues, e.g., those identified in the January 1995 and the Inspector General reports, which are being addressed by the Working Group include the need for improved measurements, especially the hard-to-measure materials, conduct of physical inventories, improved accounting of nuclear material in site databases and the Nuclear Materials Management and Safeguards System and use of alternative control and assurance measures to extend physical inventory frequencies.

United States Government

Department of Energy

memorandum

DATE: MAR 13 1996

REPLY TO
ATTN OF: DP-44:JHobbs:3-3454

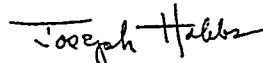
SUBJECT: DEFENSE PROGRAMS COMMENTS ON THE OFFICIAL DRAFT REPORT "AUDIT
OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS

TO: Gregory H. Friedman, Deputy Inspector General for Audits (IG-30)

Attached are Defense Programs comments on your official draft report concerning internal controls over special nuclear materials. Please note that our comments to the report are set forth in two separate memorandums.

The comments expressed in the memorandum dated March 4, 1996, provide our comments to the report's recommendation on the Fissile Inventory Assurance Report. The second memorandum dated March 7, 1996, offers our comments on the audit report's discussion of the Oak Ridge Y-12 Plant role in inventories and measurements. We request that you evaluate and incorporate our comments prior to its issuance.

We appreciate the opportunity to review and comment on this report and would be prepared to discuss the comments in further detail, if necessary. Advanced copies of these comments were faxed to Mr. Fred Doggett at your Western Region Audit Office in Albuquerque, New Mexico. If you need to discuss the comments, please contact Bill Hensley, Director of the Office of Engineering, Operations, Security and Transition Support on (301) 903-5277.



Joseph Hobbs
Audit Liaison
Office of Human and Administrative Resources
Defense Programs

Attachments

United States Government

Department of Energy

memorandum

DATE: MAR 04 1996

REPLY TO
ATTN OF: DP-312:JWoods:3-5354

SUBJECT: COMMENTS ON THE OFFICIAL DRAFT REPORT ON "AUDIT OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS"

TO: Joseph Hobbs, DP-44

The Office of Engineering, Operations, Security and Transition Support (DP-31) has reviewed the subject official draft report dated February 15, 1996, as well as the January 1995 report entitled "Increasing Fissile Inventory Assurance Within the U.S. Department of Energy." The following data is provided for your consolidated DP response to the Deputy Inspector General for audit services.

We agree in principle with the first recommendation of the IG Report; namely, that efforts to conduct inventories and measurements of special nuclear materials, according to Department requirements, should be emphasized by Headquarters and the Operations Offices. The Fissile Inventory Assurance Report recommendation appears to need further clarification. The referenced January 1995 report correctly recognizes that there are no easy and quick solutions. The enhancements referenced in the report should be expanded to clarify the specific enhancements being recommended.


The potential enhancements contained within the Fissile Inventory Assurance Report addressed seven problems. The problems and the potential enhancements have been extracted from the report and are shown in attached Table 1. If it is the intent of the subject IG Report to fully implement all of the potential enhancements in the Fissile Inventory Assurance Report, there should be more specific direction to do so.

The enhancement concerning the establishment of a Headquarters-level steering group consisting of representatives from Headquarters Program Offices, the Headquarters Office of Safeguards and Security, Operations Offices and DOE facilities should be made as clear as possible in the final report. The leadership, scope, resources, expected results and schedule as well as the responsibilities should be outlined for the steering group to the extent practical. It would also be useful to have an understanding from the report of how the steering group approach is expected to be implemented on a complex-wide basis given the overlapping responsibilities of the steering group and its proposed membership.

Since the impact of this report will drive the allocation of resources in a diminishing budget environment, the draft IG Report should set the priority perspective as clearly as possible. As stated so well in the Fissile Inventory Assurance Report, "decisions on enhancing the measurement program must be made carefully weighing the expected benefits against the cost for each type of material and site-specific situation. Measuring all materials that do not have accurate accountability values with today's accurate measurement equipment and techniques would be expensive, time consuming,

and involve hazards to workers that must be minimized." The safeguards risks and long-term safeguards costs must also be factored into the decision to enhance the Special Nuclear Material (SNM) measurement program.

We appreciate the opportunity to review and comment on this report and would be prepared to discuss our comments in further detail, if necessary. We look forward to seeing the final IG Report and will continue to work toward conducting SNM inventories and defensible measurements for maintaining the protection of SNM while assuring the health and safety of the public, our workers, and the environment. If you want to discuss this matter, please call me at 301-903-5277.


W. F. Hensley, Director
Office of Engineering, Operations,
Security and Transition Support
Defense Programs

Attachment

Table 1: Problems and Potential Enhancements (page 1 of 2)

<u>PROBLEM</u>	<u>POTENTIAL ENHANCEMENTS</u>
Unmeasured Materials	<p>DOE should assure all such materials are adequately measured and entered in the accountability books.</p> <p>Use stratified sampling approach more heavily weighted toward unmeasured items.</p>
Holdup	<p>Adequately measure or estimate and enter into the accountability books.</p> <p>Look at overall safeguards for the potential for diversion of SNM.</p> <p>Use D&D results to confirm other estimates of holdups.</p> <p>Use a systematic approach to consider benefits and impacts of holdup measurement.</p>
Measurement Systems Usage and Standardization	<p>DOE Headquarters should lead a complex-wide review of the availability of measurement equipment and facility needs.</p> <p>Use under utilized measurement equipment in the complex to avoid cost and make this equipment available to the sites in need of it.</p> <p>Equipment and trained personnel could be sent to sites in need of this equipment.</p> <p>SNM to be measured could be shipped to facilities that have equipment and trained personnel.</p> <p>(These potential enhancements must consider local factors such as environmental conditions, health and safety, criticality and procedures, must be approved for use.)</p> <p>Standardize some NDA measurement techniques throughout the DOE Complex to minimize the number of methods, qualifications and procedures to be maintained and updated, and the retraining of personnel.</p> <p>DOE Headquarters should conduct benchmarking studies for the most common material types to identify methods for conducting measurements providing training and qualifying and certifying standards.</p> <p>Standardize containers for uranium and plutonium oxide, weapons components and scrap and coordinate with the standardization of long-term storage.</p> <p>Control NDA software by a single point within the DOE.</p>

Table 1: Problems and Potential Enhancements (page 2 of 2)

PROBLEM	POTENTIAL ENHANCEMENTS
Remeasurement Policy	DOE should develop a policy governing remeasurements. This policy must consider specific material types and measurement systems and evaluate the resulting inventory differences, operating losses, inaccuracies and uncertainties in measurement methods that would be generated. This policy must also consider the cost, radiation exposure and safeguards as well.
Terminology	<p>Develop a policy for categorizing "difficult to measure" and "not amenable to measurement" Special Nuclear Materials.</p> <p>Devise composition-of-ending-inventories (COEI) codes to accommodate new categories.</p> <p>Facilities should conform to revised terminology and include these unique materials in their MC&A plans.</p>
Shipper/Receiver Transactions	Headquarters in coordination with the respective Operations Office should review all open transactions and complete transactions for which there are defensible values documented.
Coordinated and Systematic Approach to Enhancing Inventory Assurance	<p>DOE should establish a steering group consisting of representatives from:</p> <p>Headquarters Program offices,</p> <p>Headquarters Office of Safeguards and Security, Operations Offices and DOE facilities.</p> <p>Ten specific responsibilities of the steering group are listed on pages 42 and 43 of the January 1995 report.</p>

United States Government

Department of Energy

memorandum

DATE: March 7, 1996

REPLY TO
ATTN OF: DP-312:JWoods:3-5354

SUBJECT: COMMENTS ON THE OFFICIAL DRAFT REPORT ON "AUDIT OF INTERNAL CONTROLS OVER SPECIAL NUCLEAR MATERIALS"

TO: Joseph Hobbs, DP-44

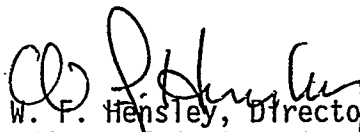
In addition to the comments made to the subject draft report in a March 4, 1996, memorandum the Office of Engineering, Operations, Security and Transition Support (DP-31) has the following additional comment. The reports discussion of the Oak Ridge Y-12 Plant in the INVENTORIES AND MEASUREMENTS section of the report should include the following statement. The Y-12 Plant was shut down in late 1994 due to serious safety concerns/violations. This obligated Departmental implementation of operational restrictions pending resolution of the safety concerns which, in turn, adversely affected the plants ability to perform Special Nuclear Material (SNM) inventories and measurements as required by Departmental of Energy directives. However, Safeguards and physical security measures were immediately implemented and tested at the Y-12 plant. These interim measure included:

- Bimonthly discrete item inventories performed and reconciled in all enriched uranium areas.
- Increased the use of tamper indication devices (TID's) on items containing SNM not in vaults as well as doors on vaults, cages, rooms, and equipment that contain SNM.
- Strengthening the Daily Administrative Checks process to assure effectiveness of interim measures including the verification of new applied (TID's). These checks are performed at random times by different individuals.
- Enhancing the Nondestructive Assay Program (NDA) program in support of inventory: 1) Random NDA checks on high equity items, 2) NDA measurements on selected equipment containing SNM, 3) NDA measurements used to maintain continuity of knowledge on unmeasured salvage items.
- On incoming shipments of SNM, confirmatory weight and NDA measurements are made.

In the case of the material received from Kazakhstan in 1994 a decision was made and agreed to by the Under Secretary, that the United States receivers accountability measurements would be made at the blender site; Babcock & Wilcox (B&W). This decision was made in recognition of the fact that without the processing capability of (Building 9212), the required receiver accountability measurements could not be made. All of this material was subjected to transfer checks/confirmatory checks were performed at the Y-12 Plant upon receipt.

- For the Y-12 receivers accountability measurements a representative of the Y-12 MC&A staff now goes to the shipper site to observe/certify measurements of SNM prior to shipment to the Y-12 Plant.
- Y-12 is committed to performing a full physical inventory after resumption but prior to any handling or processing of SNM. All restart plans require inventories be conducted as Y-12 buildings/facilities are brought on line and measurements of SNM be completed as soon as possible. These commitments are evidenced by the recent restart of the receipt, shipment and storage operations at the Y-12 Plant. Twenty eight (28) of the thirty seven (37) material balance areas have resumed operation and full physical inventories are being performed. No anomalies have been detected and all material has been account for. These compensatory measures DP believes do not assure compliance but do provide under the circumstances adequate interim control and accountability.

Thank you for the opportunity to comment on the subject report. We look forward to the final report and will continue maintaining the protection of SNM while assuring the health and safety of the public, our workers, and the environment. If you want to discuss this matter, please call me at 301-903-5277.


W. F. Hensley, Director
Office of Engineering, Operations,
Security and Transition Support
Defense Programs

memorandum

DATE: February 27, 1996

REPLY TO
ATTN OF: EM-62 (M. Daugherty, 301-903-9978)


SUBJECT: Official Draft Report on "Audit of Internal Controls Over Special Nuclear Materials" dated February 15, 1996

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services

The Office of Environmental Management (EM) Office of Nuclear Material and Facility Stabilization (EM-60) welcomes our first opportunity to review and provide comments (attached) to the subject report. We support the report's two recommendations, if strictly implemented according to the Office of Security Evaluations January 1995 report, "Increasing Fissile Inventory Assurance Within the U.S. Department of Energy."

We are concerned however, that neither we nor the Rocky Flats Field Office (one of two EM sites identified in the report) were aware of the original audit report's release until January 1996, while other departmental elements received the original version for comment/concurrence in October 1995. While we appreciate the significant and justifiable changes made to the October 1995 version of the report, in order to provide thoughtful and complete responses to future draft IG reports, we request more timely distribution to appropriate EM headquarters and field staff.

If you have any questions, please contact Maurice Daugherty, Safeguards and Security Team Leader (EM-62) at 301-903-9978.


Jill E. Lytle
Deputy Assistant Secretary for
Nuclear Material and Facility Stabilization
Office of Environmental Management

Attachment

cc:

E. Feldt, EM-62

B. Smith, EM-64

R. Martinez, EM-65

ATTACHMENT

EM Comments to IG Report on the "Audit of Internal Controls Over Special Nuclear Materials"

Comment #1 PART II: RECOMMENDATIONS Section

Although we fully support both recommendations, we are concerned that the intent of the first sentence in this section could imply that the Director, Office of Nonproliferation and National Security (NN) should lead the resolution of the report's two recommendations. The January, 1995 Office of Security Evaluations (SE) report, Increasing Fissile Material Inventory Assurance Within the Department of Energy, which you have designated as the framework for resolving materials measurement and physical inventory concerns at EM sites, specifically calls for the "establishment of a steering group consisting of representatives from Headquarters program offices, the Headquarters Office of Safeguards and Security, operations offices, and DOE facilities." Further, the report states, "Headquarters elements, including cognizant secretarial officers and Security Affairs, should lead an effort to evaluate the closure of open transactions." Moreover, your characterization of NN's comments in PART III as "responsive to the intent of the revised recommendations" suggests that the NN-led Fissile Material Assurance Working Group has become the de facto steering group called for in the SE report; when in fact representation on NN's group does not currently meet SE report criteria (i.e. neither the Office of Environmental Management nor the Office of Defense Programs - two departmental programs most responsible for the day-to-day management of fissile material - are not included even as members, let alone co-leaders of NN's group).

It is requested that the IG revise the recommendation introduction sentence to accurately capture the intent of the SE report regarding the formulation, composition, leadership and charter of the steering group. Additionally, request the IG review its auditor comments in PART III, as it appears, given the foregoing, that NN's response may not be responsive to the specific intent of the subject report.

Comment #2 OBSERVATIONS AND CONCLUSIONS Section

The last sentence of the second paragraph on page 5 states "...inventory values were based on inaccurate measurement techniques and equipment, or estimates." While this may be true, the measurement techniques and equipment used were state-of-the-art at the time, and measurement results are inaccurate only when compared with the more sophisticated measurement techniques and equipment of today. Additionally, estimates were used only when a suitable measurement technique was non-existent.

It is requested that the IG incorporate this concept of "evolution of MC&A techniques and equipment" to balance the second paragraph.

Comment #3 INVENTORIES AND MEASUREMENTS Section - Rocky Flats Environmental Technology Site

In his January 29, 1996 memorandum to EM-1 and FM-1, and his February 22, 1996 memorandum to the Deputy Inspector General for Audit Services, the Manager, Rocky Flats Field Office not only took exception to not receiving the October, 1995 version of the subject report for comment through appropriate channels, but more importantly, contradicted several of the original report's assertions regarding internal control mechanisms at Rocky Flats.

It is requested that comments by the Manager, RFFO be incorporated to balance the Inventories and Measurements section, as well as be included in PART III Management and Auditor Comments.

United States Government

Department of Energy
Rocky Flats Field Office

memorandum

DATE: FEB 22 1996

REPLY TO
ATTN OF: AMESHPA:SSG:09570

SUBJECT: Office of Inspector General Official Draft Report on "Audit of Controls and Accountability of Special Nuclear Material"

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services, IG-30, HQ

Per your request, the Rocky Flats Field Office (RFFO) is providing the attached comments on the subject report. We agree that the required bi-monthly inventories were not always performed for each Material Balance Area (MBA) between 1990 and 1995, due to various safety concerns and building operability problems. In August 1995, the RFFO approved an extension to the inventory frequency for 5 of the 17 Category I MBAs, but no other extensions or waivers have been approved.

Due to safety concerns of handling potentially unstable material, several of the items selected by the sampling plan can not be fully inventoried. The Site is aggressively working to resolve these safety concerns by September 30, 1996. Until all safety restrictions can be lifted, the inventories will be coordinated such that restricted items selected for inventory will be given priority on the brushing and repackaging schedule to maximize the number of items available for inventory.

Building operability problems will continue to be a challenge at Rocky Flats. The Site is working to rewrite the building authorization basis for each facility which should help to minimize building shutdowns.

The Site is aggressively pursuing consolidation of Special Nuclear Material (SNM) into Building 371 or a new underground passive storage vault. The Site is also reducing the amount of SNM stored at the site by shipping it to other DOE facilities as missions allow. In addition, approximately one metric ton of oxide has been placed under International Atomic Energy Agency Safeguards. These activities should further the Site's ability to meet the intent of DOE Order 5633.3B in the performance of physical inventories.

The inventory problems stated in this report have been documented in previous Safeguards and Security Periodic Surveys conducted by RFFO and Office of Security Evaluations, Inspection and Evaluations. These reviews have always concluded that, based on the internal controls in place, SNM at the Site is not at risk.



Mark N. Silverman
Manager

Attachment

FEB 22 1996

cc w/Att:

T. Grumbly, EM-1, HQ
D. Pearman, Jr., FM-1, HQ
T. O'Toole, EH-1, HQ
F. Peters, FM-1, HQ
G. McFadden, NN-50, HQ
E. McCallum, NN-51, HQ
W. Bixby, EM-60, HQ
G. Podonski, EH-4, HQ
J. Roberson, AMESHPA, RFFO
J. Kerridge, TA, RFFO
S. Rudolph, SSG, RFFO
D. Buen, FCFO, RFFO

Comments on Official Draft Report
“Audit of Internal Controls Over Special Nuclear Materials”

1. Page 4, first paragraph: The Material Control and Accountability (MC&A) Plan does not ensure an effective security program by itself. The Site Safeguards and Security Plan details the protective force, fences, alarms, detection devices, and other security systems. These two plans together provide for a comprehensive Safeguards and Security Program.
2. Page 4, first paragraph: The report references administrative controls and mentions physical inventory and measurements. Administrative controls include much more than just these two elements. The Rocky Flats Environmental Technology Site (Site) does have several other administrative (internal) control mechanisms in place to provide assurance that special nuclear material is not at risk. These are described as follows:
 - The Site requires that Nuclear Material Control and Operations personnel be present at any vault/vault type room (V/VTR) whenever opened. Subsequent to these material control measures, all movements of Category I quantities of material into or out of a V/VTR, must be approved in writing by Safeguards personnel. All material leaving or entering the V/VTR is witnessed by these two independent groups. In addition, a Nuclear Material Control person is located inside the V/VTR providing surveillance of all activities occurring within the vault. If the V/VTR has been identified as a Critical Point Target, Wackenhut Services Inc. (WSI) security police officers are also present while the V/VTR is open. If Category I material is being processed outside of a V/VTR, material surveillance measures are implemented as well as an enhanced security posture until the material is returned to the V/VTR. Rocky Flats is the only DOE Site that has implemented this type of internal control mechanism.
 - Tamper Indicating Devices (TIDs) are placed on all material containers stored within V/VTRs. Access to the V/VTRs is strictly controlled and the two-person rule is in affect for all material handling operations. All Nuclear Material Control and operations material handlers, and WSI personnel are part of the Personnel Security Assurance Program. This program includes extensive security investigations with follow-up checks for individuals directly responsible for Special Nuclear Material (SNM).
 - All V/VTRs have the required security systems in operation.
 - Tanks containing category I and II SNM bearing solutions are under closed circuit television surveillance, have locking devices on the control valves, and TIDs applied to detect movement of liquids.
3. Page 6, last paragraph and Page 7 first paragraph: Suggest that the word “vulnerability” in the first line on page 7 be replaced with “attractiveness” and “vulnerable” in the second line be replaced with “attractive.” Also, suggest deleting “(vulnerability)” in the first paragraph on page 7. Attractiveness is the word commonly used to describe the value of the material to a potential adversary. The higher the concentration of SNM the more attractive the material. The more attractive the material the greater the protection required, which in theory makes it less vulnerable. The use of the term vulnerable in this sense may portray the wrong meaning to uninformed readers.
4. Page 7, first paragraph: Per DOE Order 5633.3B, low-grade nuclear materials can be inventoried on a biennial frequency, not annually as stated.

5. Page 7, last paragraph: The Rocky Flats Field Office agrees that several bi-monthly inventories were not performed as required due to several safety concerns and building operability problems since 1990. However, at no time did the vault/vault-type rooms go more than 24 months without an inventory. In May 1993, HSP 31.11 safety problems were identified, but until May 1994, when the Defense Nuclear Facility Safety Board issued Recommendation 94-1 physical inventories were excepted from the handling restriction. Physical inventories were still performed on all items that were not restricted. Physical inventories were again halted in September 1994, due to a significant safety incident at the Site, but were restarted in May 1995.
6. Page 8, first 5 lines: State that Rocky Flats inventories were limited to record review and verification that the inventory item was in its location. Rocky Flats does perform confirmatory measurements, which verify the presence of SNM, for all items that can be reached and are not obstructed by safety restricted items.
7. Page 8, first complete paragraph: The last sentence states that Rocky Flats considered existing physical controls to be sufficient in safeguarding the SNM from loss or unauthorized diversion. In addition, the Office of Security Evaluations, Inspection and Evaluations have always concluded that, based on the controls (physical and administrative) in place, SNM at the Site is not at risk.
8. Page 9, last paragraph: This paragraph is misleading in stating completing physical inventories will allow the Department to provide assurance that all SNM has been removed from the facility for decommissioning. Physical inventories will not provide information on where material is held up. This will require that detailed hold up measurements be performed as part of the decommissioning program. Any material quantified during hold up measurements will help to reduce the historical Site inventory difference.

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: March 5, 1996

REPLY TO: FM-733:Miller
ATTN OF:

SUBJECT: COMMENTS ON OFFICIAL DRAFT REPORT ON "AUDIT OF CONTROLS AND ACCOUNTABILITY OF SPECIAL NUCLEAR MATERIALS"

TO: Gregory H. Friedman, Deputy Inspector General for Audit Services, IG-30,
Room 5A-179, FORS

In accordance with your February 15, 1996, memorandum, Oak Ridge Operations Office (ORO) has reviewed the subject official draft report, and our comments are provided as an attachment to this memorandum. These comments include actions taken since ORO's response to the initial draft report in November 1995.

If you have any questions, please contact Jeannette Miller, ORO Audit Liaison Program Manager, at (423) 576-2654.


P. T. Marquess
Chief Financial Officer

Attachment

cc w/attachment:
B. Cochran, FM-732
J. Rofling, NN-1/FORS

OAK RIDGE OPERATIONS OFFICE COMMENTS
IG OFFICIAL DRAFT REPORT
"AUDIT OF CONTROLS AND ACCOUNTABILITY OF
SPECIAL NUCLEAR MATERIALS"

MANAGEMENT RESPONSE

Oak Ridge Operations Office (ORO) concurs in the Inspector General (IG) audit finding and recommendations that physical inventory and material measurements at Y-12 for special nuclear material (SNM) receipts as required by DOE Order 5633.3B should be performed. ORO believes there is no credible substitute or alternative to a full physical inventory and all reasonable effort should be made to independently measure receipts of SNM. Historically, ORO has demonstrated a commitment to periodic physical inventory and, where possible, measurement of received material at Y-12, and it is only due to the safety concerns associated with the stand down that these accountability measures were not being performed at the time of the audit.

In our effort to mitigate the risk of not performing physical inventory or measurement of received material, a program of compensatory materials control and accountability (MC&A) actions, which has been concurred in by DOE Headquarters (HQ), has been taken since the audit. We believe that the combination of compensatory actions and the continued effective physical security and material control that did not diminish during the stand down provide adequate control and acceptable levels of accountability for SNM at Y-12.

The compensatory actions include increased surveillance measures and enhanced nondestructive assay (NDA) measurements of selected equipment and items as well as bimonthly discrete item inventory in all enriched uranium areas. In addition, since the audit, 28 of the Y-12's 37 material balance areas (MBA's) have resumed, and full physical inventory has been performed. No anomalies were detected and all material was accounted for. Y-12 will perform a full physical inventory in any SNM area upon resumption and prior to any handling or processing of material.

For receipts of nuclear material, a program or protocol has been instituted whereby a Y-12 representative will go to a shipper site to observe and/or certify measurements of SNM prior to shipment to Y-12 when full measurement at Y-12 cannot be performed because of the stand down. Also, since the audit, warehouse receipt operations have resumed, and normal confirmatory weight and NDA measurements are now being performed on any received material. Since processing would be required to measure Sapphire material, which could not be done at Y-12 due to the safety stand down, this material has been shipped to a commercial vendor for processing and measurement.

United States Government

Department of Energy

Oak Ridge Operations

memorandum

DATE: March 13, 1996

REPLY TO: FM-732:Cochran
ATTN OF:

SUBJECT: **THE OFFICE OF INSPECTOR GENERAL'S AUDIT OF INTERNAL CONTROLS OVER
SPECIAL NUCLEAR MATERIAL**

TO: John C. Layton, Office of Inspector General, IG-1, Room 5D-039, FORS

As indicated in our response to the Office of Inspector General's (OIG) initial draft report, we agree with the OIG's assessment that full physical inventory and measurement of special nuclear material (SNM) were not being conducted at the Y-12 Plant at the time of the subject audit. We also concur with the report's recommendation that the Department of Energy (DOE) should work to conduct inventories and measurement of SNM according to DOE requirements. Historically, Oak Ridge Operations Office (ORO) has demonstrated a commitment to perform physical inventory of its SNM and, to the extent possible, independent measurement of received nuclear material at Y-12. As recognized in the OIG's draft report, bimonthly physical inventories of SNM at the Y-12 Plant were discontinued because the Plant was placed in a stand down condition in September 1994 in reaction to safety concerns raised by the Defense Nuclear Facilities Safety Board (DNFSB). In this stand down condition, nuclear material personnel were not permitted access to the nuclear materials, therefore, no inventories or confirmatory measurements could initially be conducted.

We fully recognized our noncompliance with DOE Order 5633.3B and early on began working with the Office of the Assistant Secretary for Defense Programs and the Office of Nonproliferation and National Security to address the noncompliance issues and mitigate any risks. In this regard, we requested an exception from the order in October 1995, which was disapproved by the Office of Security Affairs (OSA) in November 1995. Although denying the exception, OSA and the Headquarters Program Office agreed that interim compensatory measures in place at the Y-12 Plant were partially mitigating the risks. These actions include increased surveillance measures, enhanced nondestructive assay (NDA) measurement of selected equipment and items, and bimonthly discrete item inventory in enriched uranium storage areas. OSA also recommended that Y-12 continue to take steps to reinstate all materials control and accountability measures in order to bring the facility into compliance, including conducting a complete physical inventory at each affected facility prior to resumption of operations.

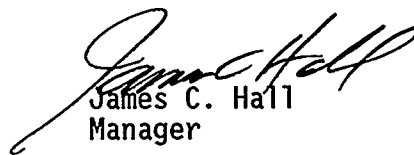
It should be recognized that during the stand down at Y-12, material control and physical protection of SNM have not diminished. While physical inventories and measurement of SNM were not being performed at the time of the OIG's audit, and while important, they are only one part of the total SNM safeguards and security protection program. We believe that the combination of compensatory actions mentioned above, and the continued

effective physical security and material control programs, have provided adequate controls and an acceptable level of accountability for SNM at Y-12 during the stand down.

Since the audit, 28 of Y-12's 37 SNM material balance areas have resumed operation, and full physical inventory in each area has been performed. In each case, all material was accounted for. Y-12 will perform a full physical inventory in the remaining SNM areas upon resumption of their operation and prior to any handling or processing of material. As to new receipts of nuclear material, the warehouse receiving operations have also resumed, and normal confirmatory weight and NDA measurements are now being performed on any received material. In addition, protocol has been instituted whereby a Y-12 representative will go to a shipper site to observe and validate measurements of SNM prior to its shipment to Y-12 since full measurement cannot be performed at Y-12 due to the stand down.

Regarding the OIG finding that Y-12 did not fully measure the SNM from Kazakhstan upon receipt and properly record the material into its inventory records, Y-12 personnel went to Kazakhstan and performed measurement of the material by NDA in preparation for its shipment. This NDA confirmed the material's SNM content. Y-12 did properly record this shipment into its records upon receipt using the confirmed values. Since processing would be required to measure this material by chemical analysis, which could not be done at Y-12 due to the safety stand down, this material has been shipped to a commercial vendor for processing and measurement.

There are detailed plans to enable Y-12 to resume its normal operations and allow us to achieve full compliance with all applicable safeguard requirements. In the interim, ORO will continue to pursue appropriate actions to assure a sufficient level of control and accountability for all SNM in its possession.


James C. Hall
Manager

cc:

T. Seitz, DP-20

G. Podonsky, EH-4

G. McFadden, NN-50

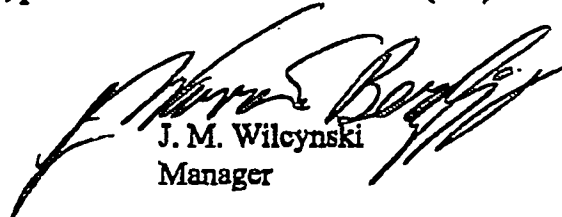
United States Government**Department of Energy****memorandum****Idaho Operations Office****DATE:** February 26, 1996**SUBJECT:** Response to Draft IG Report on Internal Controls Over Special Nuclear Materials
(OCS/SRM-96-04)**TO:** Charles B. Curtis, Deputy Secretary
DOE-HQ, S-2, 7B-252/FORS

The official draft report from IG-30 on the "Audit on Internal Controls Over Special Nuclear Materials," received February 15, 1996, has been reviewed. The report correctly asserts that "the controls related to periodic scheduled physical inventories were not operating as initially intended" at Idaho Operation Office (ID) facilities at the time of their review. No vulnerabilities were created by the delayed inventories. Risks were effectively mitigated by the substantial physical protection measures inherent at the facility.

The report states that "Some nuclear materials stored at the Idaho National Engineering Laboratory (INEL) were not inventoried on a semiannual basis as required because of safety concerns over the way materials were being stored." Delays did occur during the three semiannual inventories prior to the October 1995 inventory at the Idaho Chemical Processing Plant (ICPP). The most current inventory, conducted in October 1995, was completed on schedule. Safety concerns that caused extension of past inventory efforts have been resolved. The phrase "because of safety concerns over the way materials were being stored," is misleading in that the issues have revolved around specific technical standard level controls and potential unresolved safety questions at the Unirradiated Fuel Storage Facility at the ICPP, not the "way materials were being stored."

The report also notes that "Idaho planned to submit a request in October 1995 for a waiver to conducting physical inventories for populations of special nuclear materials where safety problems still need to be corrected." Because inventories are currently being completed, such a request was not submitted. Results to date have not indicated a problem.

The report is generally accurate with some editorial comments needed to clarify the situation at the INEL. If you have questions, please contact Robert Green at (208) 526-2216.



J. M. Wilcynski
Manager

CUSTOMER RESPONSE FORM

The Office of Inspector General has a continuing interest in improving the usefulness of its products. We wish to make our reports as responsive as possible to our customers' requirements, and therefore ask that you consider sharing your thoughts with us. On the back of this form, you may suggest improvements to enhance the effectiveness of future reports. Please include answers to the following questions if they are applicable to you:

1. What additional background information about the selection, scheduling, scope, or procedures of the audit or inspection would have been helpful to the reader in understanding this report?
2. What additional information related to findings and recommendations could have been included in this report to assist management in implementing corrective actions?
3. What format, stylistic, or organizational changes might have made this report's overall message more clear to the reader?
4. What additional actions could the Office of Inspector General have taken on the issues discussed in this report which would have been helpful?

Please include your name and telephone number so that we may contact you should we have any questions about your comments.

Name _____ Date _____

Telephone _____ Organization _____

When you have completed this form, you may telex it to the Office of Inspector General at (202) 586-0948, or you may mail it to:

Office of Inspector General (IG-1)
Department of Energy
Washington, DC 20585

Attn: Customer Relations

If you wish to discuss this report or your comments with a staff member of the Office of Inspector General, please contact Wilma Slaughter on (202) 586-1924.

