DOE/IG-0485

AUDIT REPORT

CORPORATE AND STAND-ALONE INFORMATION SYSTEMS DEVELOPMENT

SEPTEMBER 2000

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

September 28, 2000

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman (Signed)
Inspector General

SUBJECT: INFORMATION: Audit Report on "Corporate and Stand-Alone Information Systems Development"

BACKGROUND

The Department of Energy (Department) spends about $1.6 billion annually for the acquisition and maintenance of information technology (IT) related resources. Over $500 million, or 32 percent of its IT-related budget, was for development, modernization, and enhancements of systems at the Department and contractor level. The Department's IT budget includes significant costs associated with the support of weapons programs such as the Advanced Strategic Computing Initiative.

In recent years, the Department has attempted to leverage its IT resources by implementing cross-cutting, corporate-level information systems and by establishing an aggressive Strategic Plan and performance goals. These corporate systems are intended to serve many organizations across the complex with similar information needs and eliminate redundant systems and duplicative development. The Department has also established performance measures in its Strategic Plan to achieve significant savings by implementing an Information Technology Architecture and by better IT management.

The objective of our audit was to determine whether the Department's corporate information management systems were being duplicated by site-specific, stand-alone systems.

RESULTS OF AUDIT

We found that the Department has spent at least $38 million developing duplicative information systems. Despite efforts to implement several corporate-level applications, duplicative and/or redundant computer systems exist or are under development at virtually all organizational levels within the Department:

- Many organizations continue to invest in custom or site-specific development efforts that duplicated corporate systems. This was despite Departmental guidance to the contrary.

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- Federal and contractor elements have routinely developed systems that duplicate functionality between and within sites and between program elements located at the same site.

We found that the Department has not fully developed and implemented an application software investment strategy designed to reduce or eliminate duplicative systems.

MANAGEMENT REACTION

We recommended a series of actions designed to reduce expenditures and to prevent or reduce duplicative systems developments. Management generally agreed and it proposed a number of corrective actions that are responsive to the intent of our recommendations.

Attachment

cc: Deputy Secretary
Under Secretary for Energy, Science, and Environment
Under Secretary for Nuclear Security/Administrator for Nuclear Security
Chief Information Officer

CORPORATE AND STAND-ALONE INFORMATION SYSTEMS DEVELOPMENT

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OVERVIEW

INTRODUCTION AND OBJECTIVE

The Department of Energy (Department) devotes a significant amount of its annual budget to the acquisition and maintenance of information technology (IT) related resources. According to the Department's Fiscal Year 2000 budget request, $1.6 billion or 9 percent of the Department's annual budget of $17.8 billion, was for the acquisition, operation, and maintenance of these resources. Over $500 million, or 32 percent of the IT related budget, was for development, modernization, and enhancements of systems at the Department and contractor level. The Department's IT budget includes costs incurred in support of weapons programs such as the Advanced Strategic Computing Initiative.

In recent years, the Department has attempted to leverage its IT resources by implementing cross-cutting, corporate-level information systems and by establishing an aggressive Strategic Plan and performance goals. The corporate systems are intended to serve many organizations within the Department with similar information needs and eliminate redundant systems and duplicative development. The Department established performance measures in its Strategic Plan to achieve $100 million in savings by implementing a Departmentwide information architecture and an additional $245 million of savings through better IT management. The Department has reported that its efforts to improve IT development have resulted in the achievement of its Strategic Plan performance measures ahead of schedule and in savings or cost avoidances of $325 million.

The objective of this audit was to determine whether the Department's corporate information management systems are being duplicated by site-specific, stand-alone systems.

CONCLUSIONS AND OBSERVATIONS

Duplicative and/or redundant computer systems exist or are under development at virtually all organizational levels within the Department. Despite efforts to implement several corporate-level applications, many organizations continued to invest in custom or site-specific development efforts that duplicated corporate functionality. Programs, sites and contractors have also developed a number of administrative and programmatic information systems that duplicate the functionality of systems in use by other Departmental elements. The Department has been

unable to control development and eliminate duplicative systems because it has not developed and implemented an application software investment strategy. As a result, the Department has spent at least $38 million on duplicative information systems.

Management should consider the issues discussed in this report when preparing the yearend assurance memorandum on internal controls.

Signed
Office of Inspector General

DUPLICATIVE SYSTEMS DEVELOPMENT

Redundant Information Systems

Duplicative and/or redundant computer systems exist or are under development at virtually all organizational levels within the Department. Despite efforts to implement Departmentwide applications, many organizations continued to invest in custom or site-specific development efforts that duplicated corporate functionality. Programs, sites and contractors have also developed a number of administrative and programmatic information systems that duplicate systems in use by other Departmental elements. Despite challenges imposed by poor record keeping and incomplete system inventories, we identified many duplicative site and contractor-level systems supporting functions such as waste tracking, personnel/training, and nuclear materials tracking that demonstrate the cumulative effect of long-standing problems with duplicative development.

Duplication of Corporate-Level Systems

Development of applications that duplicated corporate-level systems were observed at each of the sites audited. Duplication existed at both the Federal and contractor level, and covered a number of functional areas. On the Federal level, a number of developments were either ongoing or had been recently completed that duplicated the functionality of a major Departmental information system, the Corporate Human Resources Information System (CHRIS). Certain locations also continue to maintain or were developing electronic commerce procurement systems that duplicate features found in the Department's Electronic Commerce World Wide Web (DOE/CWeb) procurement system. Certain organizations were also developing and implementing a number of site-level nuclear material tracking systems that duplicated functions available in the Local Area Network Material Accountability System (LANMAS).

Human Resources

Despite guidance to the contrary, each site was either developing or maintaining systems that duplicate CHRIS functionality. For example, Savannah River spent about $1 million through April 2000 developing a human resources and training system that duplicated planned CHRIS features even though the Department had instructed all sites to discontinue development in that area. Despite knowledge that the development was ongoing, Headquarters officials did not move to formally block development efforts until March 2000. [1] Similarly, the

[1] The Office of Inspector General, Office of Inspections, is conducting a separate inspection of the Savannah River development effort.

Richland Operations Office spent about $500,000 to upgrade its human resource system that duplicates current and planned CHRIS functions. The Richland development effort is particularly noteworthy in that it requires the duplicate entry of data, once for the local system and again for CHRIS, for all personnel actions. In March 2000, the Albuquerque Operations Office began upgrading a portion of their human resource system to a non-CHRIS application. While not engaged in additional development efforts, the Oak Ridge Operations Office continues to maintain local systems that duplicate CHRIS functionality.

Electronic Procurement

Many of the Department's major sites were developing or maintaining procurement systems that could duplicate features of DOE/CWeb, the Department's corporate system for electronic commerce. The Department began development of DOE/CWeb, a web-based electronic commerce procurement system for simplified acquisitions in 1995, and had accumulated development costs of at least $2.5 million through February 2000. Even though most major sites had adopted a procurement solution that included electronic commerce features, the Department required that they implement DOE/CWeb for simplified acquisitions. Since DOE/CWeb is designed to support only simplified acquisitions, sites are compelled to develop or maintain additional procurement systems. For example, seven major sites have adopted a commercial-off-the-shelf software (COTS) package that incorporates electronic commerce capabilities as their main procurement vehicle. Therefore, each site will be required to maintain multiple procurement systems that contain electronic commerce capabilities for the foreseeable future.

Nuclear Materials Tracking Systems

Despite Departmental suggestions to the contrary, contractors continued to develop or maintain various duplicative site-level systems for nuclear materials accountability. These development and maintenance activities continued even though LANMAS, a system in which the Department had invested over $6 million, had specifically been made available to all contractors. While LANMAS was being implemented at 8 sites, at least 13 other major site-level nuclear materials tracking systems remained in use between contractors and sites. Expenditures for separate development and maintenance of these non-standard systems were ongoing and continuous. Most notable of these efforts were those undertaken by contractors at the Oak Ridge and Los Alamos sites. Contractors at Oak Ridge had expended about $15 million

developing its Dynamic Materials Control Accountability System, while those at Los Alamos had invested at least $2.4 million in development of the Integrated Nuclear Materials Information System.

Recent planning activities by the Department to develop a business case for a replacement corporate-level nuclear materials tracking system further demonstrates the extent of duplication across the Department. The ongoing process has determined there were at least 57 different (Headquarters, site, and facility level) nuclear material accountability systems in use as of April 2000. The study noted that of the 57 systems, 10 are currently under development and 17 have plans for major modifications. Of the $217 million currently being spent annually by the Department to manage, use, track, and report information on nuclear materials inventory, approximately $70 million is spent for maintenance of these systems.

Cumulative Results

Duplicative development of information systems is a long-standing issue at the Department, and has resulted in a proliferation of redundant information systems. Federal and contractor elements have routinely developed duplicate functionality between and within sites and between program elements located at the same site. Based on our evaluation of Headquarters and just four major sites, we identified over 3,700 separate applications and over 130 in-process development efforts (see Appendix 3 for development figures). The following table illustrates the diversity of information systems and the potential for consolidation and/or coordinated development efforts among the sites audited:

System Category	Richland	Oak Ridge	Albuquerque	Savannah River	Headquarters	Total Systems
Waste Tracking	19	44	9	13	1	86
Procurement	11	16	30	10	3	70
Human Resources/ Training	31	117	17	70	7	242
Medical/ Bioassay	6	35	15	22	0	78
Security	14	44	37	16	4	115
Document Tracking	35	70	50	26	2	183
Nuclear Material Management	4	9	11	12	0	36
Other	442	456	708	1,287	47	2,940
Total	562	791	877	1,456	64	3,750

In addition to development data gathered by our audit team, a recent study of information systems development activities at the Savannah River Operations Office emphasizes and adds specificity regarding site-level duplicative development efforts. This study, commissioned by the Savannah River Operations Office and performed by DynCorp, concentrated on applications developed or procured specifically for Federal customers at the site. The study found that Savannah River had 399 separate systems and concluded that a high percentage of those systems duplicated functionality across organizations. For example, the report pointed out that the various elements had developed 27 different action-tracking systems. Essentially, each Savannah River organization maintained its own action-tracking system, with each system tracking virtually the same type of data. The study also confirmed that Savannah River had developed systems that unnecessarily duplicated systems deployed by Headquarters.

The development of duplicative or redundant waste information tracking systems at the contractor level consumed significant resources and exacerbated system proliferation problems. For example, in the 1990s contractors at Idaho National Engineering and Environmental Laboratory (INEEL), Savannah River, Oak Ridge, and Sandia all developed waste information tracking systems. In 1992, INEEL contractors developed a system to track hazardous waste generation, storage, and disposal to be used at Department and Federal facilities/installations. Around the same time the Department began development of similar systems at other sites with an estimated cost of $16 million. Savannah River began development of its waste information tracking system at a cost of nearly $3 million with another $1 million in maintenance and support costs to date. Similarly, Oak Ridge began developing a waste information tracking system in 1996 and has incurred development costs of over $10 million. Also, during the 1990s, Sandia spent about $2 million on a failed implementation of a COTS solution and an additional $1 million developing their current waste information tracking system.

Resolution of Prior Review Findings

While the Department has taken preliminary steps to identify cross-cutting functions and develop common solutions to the long-standing problem of duplicative development, it has not adequately addressed issues disclosed in previous reports. For example, in May 1995 the Department's Financial Information Team found substantial duplication and redundancy within the Department's financial and

business management systems. The Team recommended that a Business Systems Integration Council be established with representatives from all Departmental elements. Despite these recommendations, the Department did not establish a council that would have reviewed all planned system initiatives to assure coordination among all elements. In addition, the Department had not taken action on a July 1996 General Accounting Office (GAO) finding that it should better manage its IT investments by developing and maintaining a complete and accurate inventory of its information systems, both Federal and contractor.

IT Investment Strategy Requirements

The Paperwork Reduction Act of 1995 and the Clinger-Cohen Act of 1996 outline a number of requirements designed to help Federal agencies better manage their information technology resources. The Paperwork Reduction Act is the "umbrella" information technology legislation for the Federal government, while the Clinger-Cohen Act requires agencies to establish a disciplined approach to managing information technology resources. The Clinger-Cohen Act mandates that, among other things, executive agencies design and implement processes for IT capital planning and investment control using IT-related actions to enhance performance and results-based management. These Acts require the head of each executive agency to design and implement a process for maximizing the value and for assessing and managing the risks of information technology investments.

The Office of Management and Budget (OMB), the GAO, and the General Services Administration (GSA) have developed guidance to assist agencies in managing information technology. As we indicated in our report on *Commercial Off-the-Shelf Software Acquisition Framework* (DOE/IG-0463, March 2000), this guidance identifies software standards as a key component of an agency-wide information technology architecture. Additionally, agencies are required to establish a method of evaluating new systems and proposed modifications to current information systems to ensure that they do not duplicate existing functionality and comply with an approved Information Technology Architecture (ITA). The evaluation method may be formalized to the point of a certification process, and at a minimum, should require the establishment of metrics that, if met, permit a proposed system to be ITA compliant.

In February 1997, the GAO issued *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making*. This guide provided instructions to ensure that IT investment

strategies are managed in an efficient manner to maximize the benefit to the agency. The guide required agencies to track project cost data in a readily accessible format. In addition, it promoted Departmental level review for projects having (1) high-dollar, high-risk possibilities, (2) cross-functional projects where two or more organizational units would benefit from the project, or (3) common infrastructure support.

IT Investment Strategy Needs Improvement

The Department has been unable to control development and eliminate duplicative systems because it has not fully developed and implemented an application software investment strategy. While the Department has developed a conceptual Information Technology Architecture Plan to control development, the plan has not been finalized, provides only general investment guidance, and is applicable only to Headquarters elements. Despite Clinger-Cohen Act requirements, the Department has delegated virtually all application software investment decisions to program or field management level officials. The Department does not maintain a comprehensive inventory of existing systems or in-process development and is unable to maintain control over duplicative development efforts. Finally, control over the financial impact of application software investment decisions cannot be maintained because Departmental elements do not accurately track software development and implementation costs.

Information Technology Architecture

The Department's efforts to develop and implement a Departmentwide information technology architecture have not been effective in controlling duplicative development. Despite a projected cost of about $220 million, the architecture will address only about 10 percent of information technology investments. While the architecture effort is projected to eventually include operation and field offices, it will not be applicable to contractors, a segment that accounts for about 90 percent of the Department's $1.6 billion in annual IT expenditures. As presently planned, the architecture will not achieve its intended purpose of serving as a blueprint used to guide and constrain the development of information systems, nor will it promote and facilitate interoperability and seamless integration of data across the Department.

Investment Decisions

Even though the CIO has initiated several new management programs to coordinate and control IT investments, the Department still does not actively manage IT investments. For example, even though OMB

requires that system development be actively managed at the Agency level, the Department has delegated development or procurement authority for systems costing $50 million or less to field sites. Such action excludes virtually all systems from the CIO's review or concurrence process and from any direct Federal involvement. Consistent with its delegation approach, the Department does not maintain control over all development activity because it does not maintain a listing of applications or in-process development efforts.

Accounting for Development and Maintenance Costs

The Department is also unable to maintain control over the financial impact of application software investment decisions because organizations do not accurately track software development, implementation and maintenance costs. At the sites we audited, detailed cost data for individual systems was difficult to obtain. In fact, many sites were unable to provide well-documented historical cost information and up-to-date maintenance costs. Without accurate, up-to-date cost information, management of IT resources throughout their lifecycles is difficult.

Unless improvements are made in this area, the Department will have difficulty implementing the Federal Accounting Standards Advisory Board's Statement of Federal Financial Accounting Standards #10 (FASAB 10). This statement requires the capitalization of future software costs regardless of whether the application is COTS, contractor developed, or internally developed. The statement was intended to help Federal entities better manage their operations and achieve operational performance objectives by measuring the costs associated with software acquisitions. Processes to ensure that developing organizations capture all cost elements will be required before implementation can be attempted.

Better Utilization of IT Resources

Because it lacks a strong applications software investment strategy, the Department has expended significant resources on duplicative systems that could have been put to better use. While it was not possible to capture all development costs because of poor recordkeeping, cost estimates provided by the Department indicated that at least $38 million had been spent developing duplicative information systems. These resources could have been put to better use in the development and implementation of modular, scalable corporate information systems that could be used at most, if not all, Departmental sites. Application of these funds to the development of corporate sponsored information systems such as the CHRIS initiative could have greatly accelerated

Departmental progress. Furthermore, the Department's ongoing development of a Business Management Information System to implement a comprehensive, integrated, computer-based financial management system could benefit from an increased coordination of effort.

Enhancing Performance Goals

The lack of a sound application software investment strategy adversely impacts the Department's ability to maximize IT savings. While the Department has reported over $325 million in IT savings and cost avoidances over the past four years as part of the Strategic Plan, additional opportunities for savings exist. The Department could enhance its performance goals by including anticipated savings associated with implementing a Departmentwide information architecture and coordinating and consolidating development activities across Departmental elements and contractors. Potential IT savings and cost avoidances associated with the full deployment of a Departmentwide information architecture and the development and implementation of an effective application software investment strategy are likely to be significant.

To its credit, the Department recognized during this audit that the area of duplicative information systems development required specific management attention. The Department's CIO has also spearheaded an initiative to establish a common IT infrastructure based on enterprise standards and service level agreements. In conjunction with the Chief Financial Officer and the Director of Management and Administration, the CIO has developed a plan for modernizing Departmental systems. Finally, the CIO has initiated a Total Cost of Ownership study to determine all costs associated with IT and identify ways to reduce IT costs to the Department.

RECOMMENDATIONS

In addition to ongoing management initiatives to reduce duplicative information systems development the CIO should:

1. Amend the Department's information technology architecture to require that operations and field offices, as well as major contractors, adhere to its provisions;

2. Actively manage the Department's IT investment decisions by reducing the approval threshold for major IT investments by programs, operations and field offices, and major contractors and consolidate development activities where appropriate;

3. Require that programs, operations and field offices, as well as major contractors, better manage IT investments and increase control over potentially duplicative efforts by developing an accurate and complete system inventory listing;

4. Require programs, operations and field offices, as well as major contractors, to maintain accurate data on information system lifecycle development and maintenance costs; and

5. Establish performance measures and goals as required by the Government Performance and Results Act that incorporate anticipated savings and cost avoidances associated with the deployment of a Departmentwide information architecture and a comprehensive application software investment strategy.

MANAGEMENT REACTION

Management generally agreed with the facts presented, conclusions reached, appropriateness of the recommendations, and reasonableness of the estimated potential monetary impact, or other benefits that may be realized. Management proposed corrective actions that are responsive to each of our recommendations. Appendix 4 contains management comments and their proposed corrective actions in their entirety.

AUDITOR COMMENTS

Management's comments and proposed corrective actions are responsive to our recommendations. See Appendix 5 for detailed auditor comments.

APPENDIX 1

SCOPE

The audit was performed between October 1999 and July 2000 at Department Headquarters in Washington, DC, four major operations offices, and their associated contractors. The Operations Offices included Albuquerque in Albuquerque, New Mexico; Oak Ridge in Oak Ridge, Tennessee; Richland in Richland, Washington; and Savannah River in Aiken, South Carolina. Our review did not include software applications or information systems associated with the Advanced Strategic Computing Initiative. The audit focused on four major areas of information systems development and implementation, which included human resources, electronic procurement, nuclear materials tracking, and waste tracking. The development of these various systems began as early as 1990 and some efforts are still ongoing.

METHODOLOGY

To accomplish our objective, we:

- Reviewed applicable laws and regulations pertaining to the use and acquisition of IT resources;
- Reviewed reports by the OIG, the GAO, and various task forces and advisory groups;
- Held discussions with program officials and personnel from the Offices of the CIO, Management and Administration, Nuclear Materials Management Policy, Environmental Management, and Worker Protection Program;
- Held discussions with various officials and staff at the operations offices and contractors;
- Reviewed the Department's Information Architecture Implementation Plan;
- Reviewed numerous documents related to the development or acquisition of various information systems;
- Administered a questionnaire to Departmental offices to obtain specific system information;
- Obtained system inventory listings from Headquarters program offices and various field and contractor sites; and
- Reviewed the requirements of the Government Performance and Results Act.

The audit was conducted 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 audit objectives. Accordingly, we assessed internal controls regarding the development and acquisition of information systems. 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 on computer-processed data to accomplish our audit objectives. An exit conference was held with Headquarters officials on July 20, 2000.

APPENDIX 2

RELATED OFFICE OF INSPECTOR GENERAL AND GENERAL ACCOUNTING OFFICE REPORTS

- *Commercial Off-The-Shelf Software Acquisition Framework*, (DOE/IG-0463, March 2000). The Department had not developed and implemented software standards or effectively used Departmentwide contracts, key components of a COTS acquisition framework.

- *The U.S. Department of Energy's Procurement and Assistance Data System*, (DOE/IG-0436, January 1999). The system did not meet user needs or comply with current generally accepted system practices. Consequently, Departmental offices developed their own systems to meet information needs.

- *Waste Inventory Data at Oak Ridge and Savannah River*, (DOE/IG-0434, December 1998). The Department had not established minimum requirements for tracking or reporting waste inventory throughout the complex. As a result, each site had developed unique tracking and reporting processes specific for their site.

- *The Review of the U.S. Department of Energy's Information Management Systems*, (DOE/IG-0423, August 1998). The Department had not developed an IT architecture as of January 1998. Implementation of an IT architecture was required pursuant to the Clinger-Cohen Act of 1996. The Department had identified 13 corporate information systems as of December 1996 in their Baseline Analysis.

- *Audit of the Department of Energy's Leased Administrative Facilities*, (DOE/IG-402, April 1997). The Department's Financial Information Management System (FIMS) was not consistently or fully being used to manage leased space and often Departmental and field databases were being maintained in addition to FIMS. The FIMS data was found to be incomplete and not current. As a result, the Department leased more space than it used and could not determine its future leased space needs.

- *Information Management: Energy Lacks Data to Support Its Information System Streamlining Effort*, (GAO/AIMD-96-70, July 1996). The Department had allowed its management and operating contractors wide latitude in developing and implementing software inventory procedures and standards. As a result, the Department did not have a complete inventory of specific systems used by the Department and its management and operating contractors as required by the Paperwork Reduction Act and related OMB guidance.

INFORMATION SYSTEMS UNDER DEVELOPMENT

System Category	Number
Waste Tracking	5
Procurement	11
Human Resources/ Training	32
Medical/ Bioassay	6
Security	3
Document Tracking	6
Nuclear Material Management	2
Other	66
Total	131

Department of Energy
Washington, DC 20585

August 28, 2000

MEMORANDUM FOR PHILLIP L. HOLBROOK
OFFICE OF AUDIT SERVICES

FROM: JOHN M. GILLIGAN
CHIEF INFORMATION OFFICER

SUBJECT: Draft Report on "Corporate and Stand-Alone Information Systems Development"

Thank you for the opportunity to review and comment on the Office of Inspector General's Technology Audit Group draft report entitled, Corporate and Stand-Alone Information Systems Development. We provided the draft report to Program Offices and other potentially affected organizations for their comment and have reviewed the document. In general, we agree with the facts presented, conclusions reached, appropriateness of the recommendations, and reasonableness of the estimated potential monetary impact, or other benefits that may be realized. Your broad perspective of the problems associated with the Department's development of corporate and stand-alone information systems is appreciated.

See Comment 1

In general, the draft would be improved if previous reports supporting the statement on page 2, "...cumulative effect of long-standing problems with duplicative development," are listed. Also the attachment of a table to the report referencing duplicative systems found by this audit with a discussion of how these systems were determined to be duplicative would be very useful.

We recommend the following specific changes to the report:

See Comment 2

1. In the "Introduction and Objectives" section, the correct number for IT acquisition, operation, and maintenance, based on the BY 2001 revised figure submitted to OMB, should be $1.42 billion.

See Comment 3

2. In the "Introduction and Objectives" section, where the report discusses the $100 million and $245 million in savings goals, it should clearly state that those goals were achieved ahead of schedule.

See Comment 4

3. Under "Duplication of Corporate-Level Systems" section and associated sub sections, clearly state what types of systems were reviewed (i.e., federal and/or contractor systems).

See Comment 5

4. Under the "Duplicative Systems Development, Duplication of Corporate Level Systems, Human Resources" modify the second sentence to read:

"For example, Savannah River spent about $1 million through April 2000 developing a 'human resources and training system (or human resources/training system)' that duplicated...." The SR

system is more than just a module which implies that it is a mere component. The SR publication on POWER and its system owners have stated that it is a comprehensive HR and training system.

See Comment 6

5. The audit report indicates a very large number of systems were evaluated during this audit. Currently the report references these systems in a general sense. It would be very helpful to the Department for this report to provide, in an appendix perhaps, the detailed information (e.g., system name, description and other pertinent information such as development and maintenance costs) the audit team collected and evaluated for each of the systems referenced by this audit report.

See Comment 7

6. To implement recommendation 1, making the Department's information technology architecture a requirement for the major contractors, will require significant consideration in order to implement properly. Considering the special contracting nature the Department has with its major contractors, a more appropriate course of action would be to require that the contractor site architectures be compatible to the Departmental architecture. A follow on issue to this is the extent to which it makes sense to require the contractor sites to use DOE corporate systems. It may be appropriate for them to utilize only a limited functionality set of the DOE corporate systems. Another avenue to explore for efficiency is to maintain contractor site administrative systems when the contract changes companies rather than allow the new contractor to develop new administrative systems.

As per your memorandum dated August 3, 2000, on the same subject as above, you requested the corrective actions taken or planned and actual or target dates for those actions. That information is in the following table. If you have any questions, please call me at (202) 586-0166 or have your staff contact Chuck Guyker at (202) 586-2280.

Recommendations	Corrective Actions	Planned Target Date for Action	Actual Target Date for Action
1. Amend the Department's information technology architecture to require that programs, operation and field offices, as well as major contractors, adhere to its provisions	Memorandum issued by Deputy Secretary directing programs and operation and field offices to take the corporate architecture into account to not duplicate systems.	August 2000	August 2000
	Develop architecture policy to include contractor sites as appropriate	June 2001	
2. Actively manage the Department's IT investment decisions by reducing the approval threshold for major IT investments by programs, operation and field offices, and major contractors and consolidate development activities where appropriate	The IT Investment Management process will institutionalize the governance of IT projects. Plans are to issue a policy that will establish roles and responsibilities.	Dec 2000	
3. Require that programs, operation and field offices, as well as major contractors, better manage IT investments and increase control over potentially duplicative efforts by maintaining accurate and complete system inventory listings	A policy memorandum will be issued by the Deputy Secretary establishing CIO positions in the programs that will provide for better management of IT resources in the Department.	September 2000	
	The IT Investment Management process will institutionalize the governance of IT projects. Plans are to issue a policy that will establish roles and responsibilities.	Dec 2000	

4. Require programs, operation and field offices, as well as major contractors, to maintain accurate data on information system lifecycle development and maintenance costs	A systems quality assurance policy will be issued defining headquarters and field federal and contractor requirements relative to software configuration management and life cycle management. The Department plans to issue DOE Order 413.X Project Management for the Acquisiton of Capital Assets in order to improve project management for the acquisition of capital assets, which includes information technology.	Dec 2000 Dec 2000
5. Establish performance measures and goals as required by GPRA that incorporate anticipated savings and cost avoidances associated with the deployment of a Departmentwide information architecture and a comprehensive application software investment strategy	The SIM process documents a business case for all new and modified corporate systems. The business cases are assessed for alignment with DOE Corporate Information Systems Architecture to determine alignment with DOE business needs and potential cost savings and cost avoidances. Savings will be validated once systems are implemented.	Ongoing

AUDITOR COMMENTS

1. Appendix 2, Related Office of Inspector General and General Accounting Office Reports, lists reports that identify a long-standing problem with incomplete system inventories and duplicative system development. In addition, we analyzed other studies, such as that conducted at the Savannah River Operations Office, and discussed in the body of our report, in arriving at our conclusions.

2. We believe it is appropriate to utilize the FY 2000 OMB budget submission statistics based on the scope of the audit and period of our review.

3. We have modified the report to incorporate the requested change. Since the scope of the audit did not extend to validating reported savings, we cannot attest to the accuracy of management's assertion.

4. We believe that the systems are adequately identified as either Federal or contractor in the body of the report. We have offered to share the results of our analysis in this area with management officials.

5. We have modified the report to incorporate the requested change.

6. As management acknowledges, we reviewed many systems and the results of that analysis is too voluminous to include in this report. As in our response to item 4 above, we have offered to provide management with the result of our analysis in this area.

7. We recognize that the issue of requiring contractor adherence to an approved ITA will require a concerted effort. We believe, however, that the potential for savings in this area are significant and will most certainly far exceed the initial investment required. We leave the exact method of achieving the recommended result to management’s discretion.

IG Report No. : DOE/IG-0485

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