



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Special Report

Management Challenges at the Department of Energy

DOE/IG-0667

November 2004




Department of Energy

Washington, DC 20585

November 30, 2004

MEMORANDUM FOR THE SECRETARY

FROM:


Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Special Report on "Management Challenges at the Department of Energy"

BACKGROUND

In 1997, the Office of Inspector General began an annual effort to identify what it considers to be the most significant management and performance challenges facing the Department of Energy. Now codified as part of the *Reports Consolidation Act of 2000*, this effort highlights those programs and operations that are, in our judgment, inherently the most difficult to manage and those with demonstrated performance problems. We reach these judgments based on an assessment of the agency's progress in addressing previously identified challenges and relevant work performed by the Office of Inspector General. We also consider emerging issues facing the Department. The process is continually refined, and in 2004 we began to categorize management challenges as either mission-related or internal control oriented. We also developed a watch list that reflects operational or programmatic functions that, in our view, need to be closely monitored by Department management.

RESULTS

In our previous report, *Management Challenges at the Department of Energy* (DOE/IG-0626, November 2003), we identified six management challenges. The Department has taken significant positive steps to address these challenges; however, we concluded that these challenges continue as the most serious risks facing the Department in 2005 and beyond. Each of these challenges has been a long-standing and widely acknowledged issue for the Department of Energy.

Mission-Related Challenges

- National Security
- Environmental Cleanup
- Stockpile Stewardship

Internal Control Challenges

- Contract Administration
- Project Management
- Information Technology



For the most part, the challenges are not amenable to simple, near-term resolution and can only be addressed by a concerted, persistent effort, resulting in progress over a long period of time. As we reported last year, three challenges are associated with mission-related activities and three challenges are associated with weaknesses in the Department's internal control structure. Specifically, mission-related challenges represent risks that are inherent to the Department's complex operations and are likely to persist well into the future, in part, because they involve factors that are largely outside of the Department's direct control. Internal control challenges relate to weaknesses in the Department's management processes which, if not addressed, may impede the Department's ability to carry out its program responsibilities and to ensure the integrity of its operations.

We noted that under your leadership the Department has continued its initiative, started in March 2003, to address the identified management challenges. The Deputy Secretary, as the focal point of this initiative, has been personally invested in its operation, working with the Under Secretaries and Assistant Secretaries to achieve progress. Based on our analysis of this effort, if this initiative continues with the personal involvement of the Department's senior leadership, the risks associated with the identified management challenges should be reduced.

Further, the Department is actively addressing the President's Management Agenda to make the Federal government more efficient, effective, results-oriented, and accountable to the citizens who pay taxes and benefit from the programs and services government provides. As you reported in *Energizing America for a New Century*, the Department has made the President's Management Agenda its own. The Office of Management and Budget has ranked the Department as one of the top cabinet-level agencies in demonstrating progress in the implementation of the President's Management Agenda. The Department's progress and success to date in adopting the Agenda's principles should contribute significantly to mitigating the Department's challenges in the long term.

Attachment

cc: Deputy Secretary
Under Secretary for Energy, Science and Environment
Administrator, National Nuclear Security Administration
Director, Office of Management, Budget and Evaluation/Chief Financial Officer
Chief of Staff

SPECIAL REPORT ON MANAGEMENT CHALLENGES AT THE DEPARTMENT OF ENERGY

TABLE OF CONTENTS

Analysis of Management Challenges

Background	1
Mission-Related Challenges	1
Internal Control Challenges	8

Appendix

1. Watch List	15
2. Table Comparing Management Challenges Reported by Various Groups	18
3. Related Reports Issued in Fiscal Year 2004	19

Background

The Department of Energy (Department) missions encompass a broad range of areas vital to our national security and economic well-being including nuclear security, environmental quality, science, and energy resources. To accomplish its missions, the Department receives annual appropriations of about \$23 billion, employs about 14,000 Federal and 100,000 contractor personnel and manages more than \$115 billion of assets.

As required by the *Reports Consolidation Act of 2000*, this report documents the Office of Inspector General's judgment as to the most serious management challenges facing the Department. Beginning last year, we categorized challenges as either mission-related or internal control.

Although the Department has taken significant positive steps to address the six management challenges identified last year, we continue to consider these challenges to be the most serious risks facing the Department. Our conclusions are drawn primarily from our audits, inspections and investigations of the Department and its operations, but also consider other sources of data.

Mission-Related Challenges

We continue to identify National Security, Environmental Cleanup, and Stockpile Stewardship as long-standing mission-related management challenges. These challenges represent the risks inherent in the complex, and often cutting edge, operations that the Department must undertake to accomplish its missions. Indeed, these challenges will persist into the future because they are not amenable to short-term solutions, and they often involve factors that are outside of the Department's direct control.

National Security

As in previous years, we have identified national security as a significant management challenge due to both the criticality of the Department's operations and the continuing nature of security threats. The Department must ensure that its most sensitive materials, facilities, and information are secure and protected from hostile groups or countries.

During Fiscal Year (FY) 2004, the Department continued to address security issues. For example, Design Basis Threat implementation plans were approved for each National Nuclear Security Administration (NNSA) site. These plans identify the actions considered necessary to upgrade site security posture in

order to meet the Secretary's mandate to be in compliance with the new Department-wide Design Basis Threat Policy by the end of FY 2006. In May 2004, to further strengthen security enhancements that were instituted after the September 11, 2001, attacks, the Secretary announced major security initiatives to bolster protection for the Department's sensitive information and facilities containing special nuclear material. Moreover, in June 2004, the Department issued Order DOE O 142.3, *Unclassified Foreign Visits and Assignments Program*, to enhance the requirements, approval process, and tracking mechanism for visits and assignments by foreign nationals to Department sites or involving Department information or technologies.

In an effort to reduce the threat of nuclear weapons proliferation, the Department had initiated the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program to recover foreign research reactor spent fuel containing highly enriched uranium produced in the U.S. In our audit of the program, *Recovery of Highly Enriched Uranium Provided to Foreign Countries* (DOE/IG-0638, February 2004), we concluded that as of August 2003, the Department was likely to recover only about half of the approximately 5,200 kilograms of highly enriched uranium covered by the Program and there was no effort to recover an additional 12,300 kilograms dispersed to foreign countries which were not included in the Program. The Department has taken positive steps in response to our audit by forming a multi-program working group within the Under Secretary's office to address enriched uranium and placing a priority on accepting eligible material from reactors and countries where the material may pose environmental or proliferation risks.

Although progress has been made, recent incidents and our audits and inspections have underscored the need for continued vigilance and emphasis on security issues. For example, a July 2004 inventory at Los Alamos National Laboratory revealed that two zip discs containing classified material could not be located. The Secretary responded swiftly to this incident and ordered all Department facilities to stand down operations concerning classified removable electronic media (CREM) until complete and accountable custodial responsibility for CREM was established with complete inventories, appropriate training, and security procedure reviews.

We have also identified weaknesses in the Department's and its laboratories' ability to assure that laptop, desktop, and related equipment are appropriately controlled and adequately safeguarded

from loss or theft and that classified computer use met security standards. For example, our inspection of *Internal Controls Over the Accountability of Computers at Sandia National Laboratory, New Mexico* (DOE/IG-0660, August 2004) observed that Sandia used computer peripherals for classified processing without appropriate accreditation and had not effectively implemented property management controls for computers built in-house. Our inspection report on *Internal Controls Over Classified Computers and Classified Removable Media at the Lawrence Livermore National Laboratory* (DOE/IG-0628, December 2003) disclosed that classified Nuclear Emergency Search Team computer equipment and removable media were not subjected to required inventories, six classified desktop computers remained in property inventory even though they were no longer at the site, and a classified removable hard drive was not entered into the tracking and accounting system.

Further, the Department and its contractors rely upon protective force personnel to secure and protect facilities that produce, store, and handle significant quantities of nuclear materials, weapons, and national security-related information. Our reviews concerning the readiness of the Department's protective forces identified needed improvements at sites that represent some of the most critical national security components in the Department's complex. In our inspection report on *Protective Force Performance Test Improvements* (DOE/IG-0636, January 2004), we confirmed concerns of a Site Manager that the results of a protective force performance test conducted in June 2003 may have been compromised and, in our opinion, should not be relied upon. Our audit of *The Department's Basic Protective Force Training Program*, (DOE/IG-0641, March 2004) found that the Department's standardized, basic protective force core training curriculum had been applied inconsistently throughout the complex. While some level of deviation from the core curriculum to meet local conditions was understandable, the relatively large number of curriculum modifications identified during the audit raised concern as to the curriculum's validity and its usefulness as a benchmark for evaluating the performance of protective force training. In our inspection report on *Reporting of Security Incidents at the Lawrence Livermore National Laboratory* (DOE/IG-0625, November 2003), we concluded that Livermore did not ensure that security incidents involving missing master keys and master Tesa cards were reported within required timeframes, nor were timely follow-up actions taken to identify and address potential security vulnerabilities resulting from the incidents.

In our audit of *The Department's Continuity Planning and Emergency Preparedness* (DOE/IG 0657, August 2004), we reported that the five sites reviewed had not developed comprehensive plans to continue essential functions during an emergency and had not corrected a number of weaknesses identified during emergency preparedness exercises. Additionally, the Department had not required sites to validate the effectiveness of corrective actions for addressing recognized emergency preparedness weaknesses or to share lessons learned about common problems. As a result, the Department may face increased risks to its operations, employees, and surrounding communities during an emergency situation. In our audit of *Safeguards Over Sensitive Technology* (DOE/IG-0635, January 2004), we found that, at the three national laboratories included in our review, available controls over sensitive technologies had not been employed in all instances.

Environmental Cleanup

Environmental cleanup, including nuclear waste disposal, is a long-term management challenge faced by the Department. The Department is charged with the complex and costly task of protecting human health and the environment by cleaning up sites that supported nuclear weapons research, testing, and production activities. It must also address the need to permanently dispose of defense-related high-level radioactive wastes as well as spent nuclear fuel from civilian nuclear power plants.

The Department has made significant strides in developing and implementing a strategy to reduce the risks associated with environmental cleanup and nuclear waste disposal. For example, in June 2004, the Office of Environmental Management (EM) issued the *Office of Environmental Management Closure Planning Guidance* which, based on EM's Top-to-Bottom-Review, formalized processes intended to deliver results and safely complete cleanup of the EM program by 2035. This document established measurable cleanup objectives, goals, and performance expectations for each organizational element within EM. In addition, in FY 2004, the Department established the Office of Legacy Management which has the responsibility to ensure protection of human health and the environment through long-term stewardship of land, structures, facilities, and records. This Office will also oversee the Department's post-closure responsibilities for former contractor employees. However, the Department's

environmental cleanup progress could be hindered by litigation challenging the Department's Waste Incidental to Reprocessing authority.

Our work in FY 2004 pointed out issues concerning the Department's ongoing cleanup efforts. For example, in our audit of *Transuranic Waste Retrieval and Processing at the Hanford Site* (DOE/IG-0624, October 2003), we concluded that Department milestones were in jeopardy because sufficient emphasis had not been placed on projects for retrieving and processing waste. The Department had not established what we considered to be an achievable transuranic waste retrieval plan and had not performed a comprehensive study to determine obtainable retrieval rates and optimal processing levels to meet, at minimal cost, regulatory milestones and cleanup goals. Our audit of the Department's planned facilities for *Depleted Uranium Hexafluoride Conversion* (DOE/IG-0642, March 2004) found that the Department has an opportunity to save at least \$55 million by adding an additional conversion line at the Portsmouth, Ohio facility. In addition, our report on *Groundwater Remediation Activities at Hanford* (DOE/IG-0655, July 2004) noted that the Department had not made significant progress in its efforts to remediate groundwater at the Hanford Site and that pump-and-treat systems installed in 1995 for that purpose have been largely ineffective. At Hanford, the Department risks further contamination of the groundwater and continued expenditure of funds on a largely ineffective technology.

In 1994, the Defense Nuclear Facilities Safety Board recommended that the Department stabilize fissionable and radioactive materials at Los Alamos National Laboratory and at numerous other Department sites in order to reduce safety and health risks to Department employees and the public. In our audit, *The Stabilization of Nuclear Materials at Los Alamos National Laboratory* (DOE/IG-0659, August 2004), we noted that although the Department has made some progress in stabilizing the most hazardous fissionable materials, stabilization has not been accelerated to the level anticipated and will not be completed until 2010, well beyond the original projected completion date of 2002. Unless the Department and Los Alamos place a higher priority on stabilizing these materials, radioactive materials at the Laboratory may continue to deteriorate, negatively impact the safety and health of workers, and increase costs to stabilize these dangerous materials.

In the area of nuclear waste disposal, we noted that the President designated Yucca Mountain as the site for the nation's first safe

repository. The Administration believes that the successful completion of the Yucca Mountain project will ensure that the United States has a safe and secure underground facility that will store nuclear waste in a manner that is protective of the environment and American citizens. The goal of accepting waste into the repository could be affected by various issues such as funding, regulatory rulings, and legal challenges.

Before the licensing process for Yucca Mountain is to begin, the Department is required to publicly disclose all relevant documents by posting them on the Department's public website which is accessible through the internet based Licensing Support Network sponsored by the Nuclear Regulatory Commission. Our audit, *Management Controls Over the Licensing Support Network for the Yucca Mountain Repository* (OAS-M-04-04, May 2004), observed that the Department had made significant progress in preparing licensing related information for public disclosure on the Network. However, we identified obstacles that the Department still faces in preparing the Network for initial certification and ensuring that documents are available for public review on a timely basis.

Stockpile Stewardship

The Department's Stockpile Stewardship Program is responsible for maintaining the safety, reliability, and performance of the nation's nuclear weapons stockpile in the absence of underground nuclear testing. This program is one of the most technically complex scientific programs ever undertaken since success is dependent upon developing an unprecedented set of scientific tools to better understand nuclear weapons, enhance stockpile surveillance capabilities, and extend the life of the weapons that comprise the stockpile. Each year, the Secretary of Energy must certify to the President that the weapons are safe and reliable and that underground testing does not need to be resumed.

In meeting the challenges associated with the nuclear weapons stockpile, the Department has had difficulty with the efficiency of its operations, administrative processes, and the ability to conduct timely studies of weapons systems. NNSA management has initiated corrective actions intended to improve management processes over planning and budgeting, information management, acquisitions, and human resources. For example, NNSA has undertaken a major reorganization, initiated in FY 2003, to address some past problems by delineating lines of authority and improving communications.

In our audit of the *National Security Laboratories' Annual Reporting of the Nuclear Weapons Stockpile Assessment* (DOE/IG-0661, September 2004), we found that all three of the laboratories complied with the basic requirements of the *National Defense Authorization Act* when preparing their FY 2003 annual assessment letters to the Secretary. However, we observed that the procedures used by each of the weapons laboratories were somewhat inconsistent in terms of the content and presentation of their assessment letters and in the charters of laboratory technical evaluators who perform independent reviews of the conclusions contained in the assessment reports. In addition, we found that the NNSA Stockpile Coordinator, a Federal official who is the focal point for the critically important assessment program, did not have access to the reports issued by the laboratory technical evaluators.

Our audit of the *Management Controls Over the National Nuclear Security Administration's Enhanced Test Readiness Program* (OAS-M-04-05, August 2004) noted examples of schedule slippages that could potentially impact NNSA's goal to be ready to conduct underground nuclear weapons testing within 18 months. Because the project lacked a number of essential project management tools, including critical components, we could not ascertain, and management could not demonstrate, whether or not the failure to meet these objectives would impact achievement of readiness goals.

Our audit of *The National Nuclear Security Administration's Enhanced Surveillance Campaign* (DOE/IG-0646, April 2004) disclosed that NNSA has experienced delays in completing essential milestones and was at risk of missing some future milestones. The goal of the Enhanced Surveillance Campaign is to provide advance warning of manufacturing and aging defects that could affect the nuclear weapons stockpile. Operating as intended, enhanced surveillance allows NNSA to refurbish weapons before safety, reliability, or performance is impaired.

We also identified project management weaknesses that could impact the stockpile. We reported that the project for the *Reestablishment of Enriched Uranium Operations at the Y-12 National Security Complex*, (DOE/IG-0640, February 2004) will cost substantially more than the planned \$119 million. While Y-12 had successfully reestablished three of the key enriched uranium operations processes, several of the remaining processes would not be operational until over 5 years later than originally planned. Completion of the project within technical scope, cost, and

schedule was at risk because the Department had not made full use of available project management controls.

Internal Control Challenges

Internal control challenges relate to the Department's management processes for achieving its missions. Internal control issues, if not addressed, can impede the Department's ability to carry out its program responsibilities and to ensure the integrity of its operations. In this regard, we continue to identify Contract Administration, Project Management, and Information Technology as internal control management challenges facing the Department.

Contract Administration

Effective contract oversight is an essential component for the Department's management of its programs. The Department places a significant reliance on contractors and grantees to accomplish its mission. About three-fourths of the Department's budget is awarded to industrial companies, academic institutions, and nonprofit organizations that operate a broad range of scientific, industrial, and production facilities. Inadequate oversight of contract costs and performance has been a long-standing management issue for the Department. Our reviews in FY 2004 concluded that contract oversight needed to be improved in areas such as claimed costs, purchase cards, and subcontracts.

In our audit of *Central Office Expenses for the Thomas Jefferson National Accelerator Facility* (DOE/IG-0629, December 2003), we concluded that lack of attention by Department administrators to a contractor's claimed costs created an atmosphere in which the contractor sought and received reimbursement for unallowable and inadequately documented central office costs. In that audit, we questioned about \$4.6 million of the \$4.8 million claimed by and paid to the contractor for central office expenses over a 35-month period. A related investigation resulted in a \$1.2 million civil settlement between the Department of Justice and the contractor. Another audit, *Management Controls Over Title X Claims Reimbursement at the West Chicago Thorium Processing Facility*, (OAS-M-04-08, September 2004) disclosed that the contractor had inappropriately claimed about \$7 million in non-reimbursable costs, and we questioned \$14 million in overhead previously approved by the Department.

Purchase cards have become an effective tool to streamline the procurement process. However, the benefits derived from purchase card use need to be balanced with responsible purchase

card program controls to ensure that Department funds are adequately protected from purchase card abuse. Because of the significance of the issues disclosed through prior examinations, we performed a follow-up review of the *Los Alamos National Laboratory's Purchase Card Program Corrective Actions* (DOE/IG-0644, April 2004) to determine whether the Laboratory had conducted a thorough analysis of its purchase card program and had initiated corrective action to resolve previously reported weaknesses. We found that the Laboratory had significantly improved the management of its purchase card program, but we identified certain opportunities to further reduce the risk of purchase card misuse. In addition, recent reports by the Government Accountability Office found that further improvements were needed to strengthen controls over the purchase card programs at four national laboratories - Lawrence Berkeley, Lawrence Livermore, Pacific Northwest, and Sandia.

The Department's laboratories fulfill their mission by subcontracting a significant portion of their work. We performed a series of audits which identified weaknesses in subcontract administration at national laboratories. Our audit of *Management Controls over Subcontract Administration at the National Security Laboratories* (OAS-M-04-06, August 2004) found that Lawrence Livermore, Los Alamos, and Sandia did not always ensure that audits of subcontractor costs were conducted, questioned costs were resolved, and completed subcontracts were closed timely. Our audit of *Management Controls over Subcontract Administration by the National Renewable Energy Laboratory* (OAS-M-04-02, March 2004) disclosed that the Laboratory did not always adequately protect Government property in the hands of its subcontractors and did not close out subcontracts in a timely manner. Our audit of *Management Controls over Subcontract Administration by the Argonne National Laboratory* (OAS-M-04-01, March 2004) noted that Argonne relied heavily on sole source procurements without, in many cases, adequately supporting their use, and did not always adequately safeguard property acquired by subcontractors.

Other audits identified contract administration weaknesses for property disposal and tuition expenses. In our audit of *Property Disposals at the Yucca Mountain Project* (DOE/IG-0664, September 2004), we concluded that contract administration improvements were needed to ensure that property cleanup and disposal efforts were carried out in a manner designed to maximize the recovery of the Government's investment. For example, we found that the Department received no benefit from property given

to its disposal contractor even though the property had a potential residual value or could be sold as reusable property. Our audit of *Management Controls Over Contractor Tuition Reimbursements for Courses Leading to Degrees at Non-Accredited Educational Institutions* (OAS-M-04-07, September 2004) observed that certain contractors at the Department's Oak Ridge and Richland complexes reimbursed employees for courses and degree programs without ensuring that the institutions offering the courses provided legitimate academic training that would benefit the Department.

In addition, our investigative work in contract administration areas such as labor hour charging, claimed costs, and procurement identified weaknesses and led to recoveries of over \$10 million in Federal funds. For example, an investigation led to a civil judgment in the amount of \$2.9 million against a former subcontractor and its owner. The investigation determined two subcontractor officials, and their companies, knowingly submitted false claims in the form of coal test reports and invoices. Another investigation determined that a Departmental contractor submitted false purchase orders for payment, mischarged time to a Departmental contract, and billed the Department for personal expenses.

As we reported last year, the Department's Chief Financial Officer, at the request of the Deputy Secretary, has developed a corrective action plan to address five major areas of contract administration: selection of contract type; increasing competition; use of effective performance objectives and measures in contracts; effective management of Departmental activities; and, inadequate human resources to perform contract oversight. In addition, program offices have taken actions to address contractor oversight issues. For example, the Office of Science has initiated an assessment of financial management oversight of its contractors, and the NNSA is structuring its workforce to improve oversight of contractors managing and operating its facilities. Also, the Department's Office of Procurement and Assistance Management has taken a number of additional steps designed to improve the management of contracts.

Project Management

Capital asset and operating projects are an essential component of the Department's missions. The Department's numerous multi-million dollar projects, many unique in the world, support the scientific and technologically complex work of the

Department. In response to criticisms in past years concerning weaknesses in project management, the Department has improved management of capital asset projects.

To address project management issues identified by the Office of Inspector General and other reviewers, such as the National Research Council (an organization of the National Academies of Science engaged by the Department since 1998 to recommend project management improvements), Department leadership initiated a number of corrective actions, particularly for capital asset construction projects. Examples include using external independent reviews to ensure quality planning during early stages of the projects; requiring regular status reports for senior Department management; conducting executive level management reviews; and, implementing a new career development program for project managers. Additionally, Departmental organizations have initiated project management reforms. For example, EM established in its June 2004 *Office of Environmental Management Closure Planning Guidance* that it would identify, plan, and accomplish cleanup activities in accordance with the Department's principles for project management. These projects are valued at over \$120 billion in life-cycle costs.

The Office of Inspector General recognizes the Department's progress in this area and acknowledges the sound project management policies and practices established by Department Order DOE O 413.3, *Program and Project Management for the Acquisition of Capital Assets*, and Manual M 413.3-1, *Project Management for the Acquisition of Capital Assets*. However, in our judgment, programs need to further enhance their efforts by more aggressively applying project management principles to their operating projects and program activities.

During FY 2004, the Office of Inspector General reviewed various on-going projects. For example, in the environmental area, our report on *Major Clean-Up Projects at the Idaho National Engineering and Environmental Laboratory* (DOE/IG-0649, May 2004) recommended that enhancements to contract and project management practices could improve the way the Department and its contractors react to delays and challenges. Because of identified delays, the Department will be forced to deal with additional costs and long-term operational impacts to environmental projects. We also reviewed the WERC Project (a Consortium for Environmental Education and Technology Development) which supports various environmental efforts including education, outreach, research, and student-level design

contests. Our report on the project, *Management Controls Over Administration of the WERC Project* (OAS-M-04-03, May 2004) disclosed that the Department did not ensure that the project was meeting its goals and that reimbursed costs were appropriate.

In our audit of the *Design of the Uranium Storage Facility at the Y-12 National Security Complex* (DOE/IG-0643, March 2004), we concluded that the design for the new facility was unlikely to achieve its intended objectives to provide lower life-cycle costs than the prior design, better security with greater flexibility to adapt to increased security threats, and less risk of construction schedule delays. Our audit of the *Cold Standby Program at the Portsmouth Gaseous Diffusion Plant* (DOE/IG-0634, December 2003) found that the Department had not clearly defined the termination point of the program and total program costs had nearly doubled from initial estimates. In addition, the Department had not formally updated the program mission requirements, assigned program responsibility to a single organization, executed the most cost-effective procurement strategy, or developed a programmatic baseline. In reviewing the *Management of Oak Ridge Radio Transition Projects* (DOE/IG-0653, June 2004), we observed that planned radio transition projects at the Oak Ridge Reservation would cost more than necessary and not provide several critical features, such as enabling protective forces to maintain full communications in the event of an emergency.

Information Technology

Information Technology remains a management challenge as the Department works towards fully implementing the requirements of the *Clinger-Cohen Act of 1996*. To its credit, the Department continues to improve its information technology management. We noted that the Deputy Secretary initiated a campaign to complete certification and accreditation of all major applications and general support systems. In addition, the Department revitalized its Information Technology Council to assist the Chief Information Officer in managing the Department's information technology resources.

The Office of the Chief Information Officer (OCIO) has issued a series of new cyber security policies that address previously reported weaknesses and emphasize a risk-based approach to managing security, that, when implemented, should strengthen cyber security across the Department. The OCIO is also making plans to independently verify and validate the vulnerability

reduction steps being taken. These actions should help ensure that the Department continues to improve its readiness in this important area.

As in past years, a number of Office of Inspector General reports have highlighted internal control weaknesses that impact the improvement of information technology systems and security. For example, in our annual independent evaluation to determine whether the Department's unclassified cyber security program adequately protected data and information systems, *The Department's Unclassified Cyber Security Program - 2004* (DOE/IG-0662, September 2004), we reported that problems continue to exist in the Department's unclassified cyber security program that, if uncorrected, could expose critical systems to compromise. While the number of audit findings was reduced from a high of 69 in FY2002 to 32 in FY 2004, we observed that the Department had not completed implementation of a comprehensive risk management process. The Department's continued difficulty in identifying, tracking, and correcting previously reported weaknesses in a timely manner contributed to remaining cyber security issues.

We also observed in our audit of *Implementation of Indications, Warning, Analysis and Reporting Capability* (DOE/IG-0631, December 2003) that overall cyber security incident reporting had not improved significantly, and sites and organizations continue to have wide discretion in reporting. Without timely and complete incident reporting, the Department's ability to prevent or detect emerging or recurring attacks and to assess cyber security risks is undermined. The OCIO has been successful in significantly improving cyber security incident reporting in the last fiscal year. This was done by issuing a policy that requires both positive and negative reporting, as well as including the status of site reporting in the quarterly Internal President's Management Agenda Scorecard.

In our review of the *Management of the Department's Personnel Security and Access Control Information Systems* (DOE/IG-0651, June 2004), we reported that the Department's information systems modernization initiatives will not adequately address long-standing economy and efficiency issues related to personnel security and physical access systems. The Department's long-term objectives in this area had not developed a comprehensive framework for modernizing these systems and did not always follow sound system development practices. For example, ongoing initiatives will not significantly improve the ability of the Department's

corporate personnel security system to track visitor site access and reduce overlapping or redundant physical access control systems. However, Homeland Security Presidential Directive -12 (HSPD-12) is creating new government-wide standards for identification and access controls, in addition to the ability to track inappropriate attempts to avoid physical and logical security controls. In response to this directive, the OCIO is forming a DOE Task Force to examine how to address the requirements of HSPD-12 in an effective, efficient, and economical manner.

Our audit of the *Management of the Federal Energy Regulatory Commission's Information Technology Program* (DOE/IG-0652, June 2004) noted that the effectiveness of the Commission's information system development activities could have been improved through enhanced project management practices such as developing an enterprise architecture, implementing a capital planning and investment control process, and by thoroughly applying project management techniques. Without improvement, the Commission risks incurring unnecessary costs for systems that face premature obsolescence because they do not meet user needs or satisfy mission requirements. Our audit of *Electricity Transmission Scheduling at the Bonneville Power Administration* (DOE/IG-0637, February 2004) found that Bonneville operated a hybrid system that did not fully meet its needs for scheduling transmission transactions. Specifically, Bonneville's management of the system did not have a comprehensive project plan and lacked system development and implementation procedures. In addition, our audit of *System Development Activities at Selected Management Contractors* (DOE/IG-0647, April 2004) disclosed that Department contractors were not always on track to deliver effective information technology systems on time or at expected cost.

APPENDIX 1

Watch List

Beginning with our prior year's report on management challenges, we developed a watch list that consists of management issues that do not, in our judgment, meet the threshold of major management challenges yet warrant continued attention by senior Department managers. Watch list issues may include management challenges identified in previous years for which the Department has implemented corrective actions or has achieved positive outcomes. The watch list may also include emerging issues that may require Department action. Last year, our watch list addressed three areas: Energy Supply; Worker and Community Safety; and, Performance Management. In our judgment, these three areas remain on the watch list as operational or programmatic functions that need to be closely monitored by Department management.

Energy Supply

One of the critical roles of the Department is to protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy. In achieving this goal, the Department must confront the disparity between the nation's rising demand for energy and the projected increase in domestic energy supply, as well as address environmental challenges such as greenhouse gas reduction.

The shortfall between energy demand and domestic supply is projected to increase nearly 50 percent by 2020. Consequently, dependence on energy supplied by foreign sources, especially petroleum imports from the Persian Gulf region, will be on the increase as it has been for the past several decades. Acknowledging the trend toward increased dependence on energy supplied by foreign sources, the Administration's National Energy Policy, issued in May 2001, resolved to take steps to improve energy conservation and efficiency and increase domestic energy production in order to avoid increased dependence on imports. The Department promotes energy conservation through programs such as weatherization and building technologies. The Department fosters environmentally-sound domestic energy production by investing in high-risk, high-value energy research and by developing technologies to allow renewable energy to play a more important role in the future of our Nation. These programs include fossil energy, nuclear energy generation, hydrogen programs, and wind technology.

Although, these positive steps are expected to slow the growth in foreign energy dependence, the Department faces the ongoing risk that any serious disruptions in energy supply can impact our security, economy, and standard of living. Disruptions can cause dramatic price fluctuations that reverberate throughout the Nation's economy. A vital component of energy supply is the nation's electric transmission and distribution grid. The ability of this system to function reliably and provide abundant, accessible and affordable electricity is an essential ingredient of the Nation's economy and way of life.

Aging equipment, inadequate transmission capacity in some areas, transmission bottlenecks, and persistent underinvestment in new transmission facilities are impacting the performance of the

grid and its ability to match increasing demand in a digital age. The August 2003 blackout in the Northeast and Midwest demonstrated the serious negative impact that a significant electricity supply disruption can impose, as an estimated 50 million people were affected, with U.S. economic losses estimated to be between \$4 and \$10 billion.

Given our reliance on foreign energy sources and the significant impact that energy supply disruptions can have on our economy and security, energy supply, in our judgment, is an ongoing issue that needs to be closely watched by Department management.

Worker and Community Safety

Worker and community safety is a high priority of the Department. The large-scale facilities and the dangerous materials that are an integral part of the Department's operations represent safety risks to workers and local communities. Safety incidents have the potential to destabilize, delay, and disrupt the Department's critical activities, and have intangible costs such as a negative public perception of the Department. Prior to FY 2004, we had identified worker and community safety as a major management challenge. Due to progress made and actions initiated, we moved this area to our watch list in FY 2004. We have retained this critical area on our watch list because of the need for the Department to continue to give a high priority to mitigate safety and health risks.

The Office of Inspector General continues to evaluate the Department's safety programs and activities and to make recommendations to assist management in improving its operations. For example, at the request of the Secretary, we performed an investigation of *Allegations Involving Occupational Medical Services and Tank Farm Vapor Exposures at the Hanford Site* (Report I04RL003, June 2004). Although the facts we developed did not substantiate criminal misconduct with regard to the allegations that were the focus of our investigation, we observed several worker health and safety protocols that needed to be addressed by Federal managers at the Hanford site.

In addition, we reviewed the Department's Computerized Accident/Incident Reporting System (CAIRS), which accumulates injury and illness data from facilities throughout the Department complex. Our audit on *The Department's Reporting of Occupational Injuries and Illnesses* (DOE/IG-0648, May 2004), found that CAIRS data for selected contractors was not always accurate or complete as we observed discrepancies between contractor records and CAIRS data and noted that a major contractor was not required to report injury and illness information to the Department. Shortly after issuance of a draft of our report, the Department published the *Environment, Safety and Health Reporting Manual*, which, if fully implemented, should address a number of the data quality concerns identified in our audit.

Performance Management

In FY 2004, due to the considerable progress made by the Department, we no longer identified performance management as a significant management challenge but included it on our watch list of areas that still require management attention. In our judgment, senior Department leadership has acted forcefully to institutionalize performance management as a major driver in

the management of the Department. For example, in FY 2004, the Deputy Secretary directed that internal controls over performance measures be strengthened to ensure, among other things, that performance data are accurate, timely, complete, and adequately supported to permit verification and substantiation of reported results. Nevertheless, since many of the improvements in this area are new and require the continued diligent attention of senior Department management, we retained performance management on our watch list this year.

During FY 2004, the Office of Inspector General continued to assist in the evaluation of performance measures to assure accurate and valid results are reported and documented against clear and meaningful measures. In a report on the *Federal Energy Regulatory Commission's Performance Management* (DOE/IG-0627, November 2003), we observed that, while many of the Commission's performance measures were appropriate, the performance management system did not reach its full potential. For example, a few key activities did not have measures, measures did not always address program activities, and, in some cases, management could not demonstrate that it had actually achieved reported results.

In our report on *The Department's Audit Resolution Process* (DOE/IG-0639, February 2004), we noted that, although the Department had made efforts to improve the effectiveness of its audit resolution process, there were several areas where additional action was necessary. Lack of specific, quantifiable performance measures diminished the overall effectiveness of the Department's audit resolution process and Department organizations had not been required to perform trend analyses to identify systemic problems or review audit findings issued to others for applicability. Consequently, the Department had not always realized potential programmatic savings, improvements in health and safety, and operational efficiencies that could be achieved through a strong audit resolution process.

Appendix 2

**TABLE COMPARING MANAGEMENT CHALLENGES
REPORTED BY VARIOUS GROUPS**

IG	GAO¹	DOE²
Environmental Cleanup	Cleanup of Radioactive & Hazardous Waste	Environmental Cleanup
		Nuclear Waste Disposal
National Security	Security Threats and Problems	Security
Stockpile Stewardship	Nuclear Weapons Stockpile	Stockpile Stewardship
Contract Administration	Contract Management	Oversight of Contractors
Project Management		Project Management
Information Technology Management		Information Technology Management
		Safety and Health
		Human Capital Management
	Revitalize Infrastructure	
	Leadership in Meeting Nation's Energy Needs	

¹According to *Major Management Challenges and Program Risks, Department of Energy* (GAO-03-100, January 2003)

²DOE's self identified "Significant Issues" according to *U.S. Department of Energy Performance and Accountability Report, Fiscal Year 2004* (November 2004)

Appendix 3

RELATED REPORTS ISSUED IN FISCAL YEAR 2004

National Security

- Inspection Report on *Reporting of Security Incidents at the Lawrence Livermore National Laboratory* (DOE/IG-0625, November 4, 2003)
- Inspection Report on *Internal Controls Over Classified Computers and Classified Removable Media at the Lawrence Livermore National Laboratory* (DOE/IG-0628, December 5, 2003)
- Audit Report on *Safeguards Over Sensitive Technology* (DOE/IG-0635, January 13, 2004)
- Inspection Report on *Protective Force Performance Test Improprieties* (DOE/IG-0636, January 23, 2004)
- Audit Report on *Recovery of Highly Enriched Uranium Provided to Foreign Countries* (DOE/IG-0638, February 9, 2004)
- Audit Report on *The Department's Basic Protective Force Training Program* (DOE/IG-0641, March 12, 2004)
- Inspection Report on *Contractor Compliance with Deemed Export Controls* (DOE/IG-0645, April 13, 2004)
- Inspection Report on *Unauthorized Handguns on National Nuclear Security Administration Aircraft* (DOE/IG-0654, July 6, 2004)
- Inspection Report on *Internal Controls Over Personal Computers at Los Alamos National Laboratory* (DOE/IG-0656, August 10, 2004)
- Audit Report on *The Department's Continuity Planning and Emergency Preparedness* (DOE/IG-0657, August 11, 2004)
- Inspection Report on *Protective Force Response to a Security Incident at Sandia National Laboratory, California* (DOE/IG-0658, August 11, 2004)
- Inspection Report on *Internal Controls Over the Accountability of Computers at Sandia National Laboratory, New Mexico* (DOE/IG-0660, August 30, 2004)
- Inspection Report on *Intelligence Oversight Activities at Selected Field Sites* (INS-O-04-01, August 31, 2004)

Appendix 3

- Inspection Report on *Control and Accountability of Emergency Communication Network Equipment* (DOE/IG-0663, September 24, 2004)

Environmental Cleanup

- Audit Report on *Reindustrialization of the East Tennessee Technology Park* (DOE/IG-0623, October 14, 2003)
- Audit Report on *Transuranic Waste Retrieval and Processing at the Hanford Site* (DOE/IG-0624, October 23, 2003)
- Audit Report on *Depleted Uranium Hexafluoride Conversion* (DOE/IG-0642, March 18, 2004)
- Audit Report on *Management Controls Over the Licensing Support Network for the Yucca Mountain Repository* (OAS-M-04-04, May 20, 2004)
- Audit Report on *Groundwater Remediation Activities at Hanford* (DOE/IG-0655, July 22, 2004)
- Audit Report on *The Stabilization of Nuclear Materials at Los Alamos National Laboratory* (DOE/IG-0659, August 16, 2004)

Stockpile Stewardship

- Audit Report on *Modernization of Tritium Requirements Systems* (DOE/IG-0632, December 16, 2003)
- Audit Report on *Reestablishment of Enriched Uranium Operations at the Y-12 National Security Complex* (DOE/IG-0640, February 24, 2004)
- Audit Report on *The National Nuclear Security Administration's Enhanced Surveillance Campaign* (DOE/IG-0646, April 14, 2004)
- Audit Report on *Management Controls Over the National Nuclear Security Administration's Enhanced Test Readiness Program* (OAS-M-04-05, August 3, 2004)
- Audit Report on *National Security Laboratories' Annual Reporting of the Nuclear Weapons Stockpile Assessment* (DOE/IG-0661, September 14, 2004)

Contract Administration

- Audit Report on *Central Office Expenses for the Thomas Jefferson National Accelerator Facility* (DOE/IG-0629, December 8, 2003)

Appendix 3

- Audit Report on *Management Controls over Subcontract Administration by the Argonne National Laboratory* (OAS-M-04-01, March 12, 2004)
- Audit Report on *Management Controls over Subcontract Administration by the National Renewable Energy Laboratory* (OAS-M-04-02, March 19, 2004)
- Special Report on *Los Alamos National Laboratory's Purchase Card Program Corrective Actions* (DOE/IG-0644, April 12, 2004)
- Audit Report on *Management Controls over Subcontract Administration at the National Security Laboratories* (OAS-M-04-06, August 19, 2004)
- Audit Report on *Management Controls Over Contractor Tuition Reimbursements for Courses Leading to Degrees at Non-Accredited Educational Institutions* (OAS-M-04-07, September 22, 2004)
- Audit Report on *Management Controls Over Title X Claims Reimbursement at the West Chicago Thorium Processing Facility*, (OAS-M-04-08, September 24, 2004)
- *Property Disposals at the Yucca Mountain Project* (DOE/IG-0664, September 27, 2004)

Project Management

- Audit Report on *The McNeil Biomass Project* (DOE/IG-0630, December 11, 2003)
- Audit Report on *Cold Standby Program at the Portsmouth Gaseous Diffusion Plant* (DOE/IG-0634, December 22, 2003)
- Audit Report on *Design of the Uranium Storage Facility at the Y-12 National Security Complex* (DOE/IG-0643, March 19, 2004)
- Audit Report on *Management Controls Over Administration of the WERC Project* (OAS-M-04-03, May 18, 2004)
- Audit Report on *Major Clean-Up Projects at the Idaho National Engineering and Environmental Laboratory* (DOE/IG-0649, May 25, 2004)
- Audit Report on *Management of Oak Ridge Radio Transition Projects* (DOE/IG-0653, June 30, 2004)

Information Technology

- Audit Report on *Implementation of Indications, Warning, Analysis and Reporting Capability* (DOE/IG-0631, December 12, 2003)

Appendix 3

- Audit Report on *Electricity Transmission Scheduling at the Bonneville Power Administration* (DOE/IG-0637, February 4, 2004)
- Audit Report on *System Development Activities at Selected Management Contractors* (DOE/IG-0647, April 22, 2004)
- Audit Report on *Management of the Department's Personnel Security and Access Control Information Systems* (DOE/IG-0651, June 18, 2004)
- Audit Report on *Management of the Federal Energy Regulatory Commission's Information Technology Program* (DOE/IG-0652, June 30, 2004)
- Evaluation Report on *The Department's Unclassified Cyber Security Program - 2004* (DOE/IG-0662, September 24, 2004)

Worker and Community Safety

- Audit Report on *The Department's Reporting of Occupational Injuries and Illnesses (CAIRS)* (DOE/IG-0648, May 21, 2004)
- Investigation of *Allegations Involving Occupational Medical Services and Tank Farm Vapor Exposures at the Hanford Site* (I04RL003, June 1, 2004)
- Inspection Report on *Internal Controls Over Methamphetamine Precursor Chemicals at the Y-12 National Security Complex and the Oak Ridge National Laboratory* (DOE/IG-0650, June 14, 2004)

Performance Management

- Audit Report on *Federal Energy Regulatory Commission's Performance Management* (DOE/IG-0627, November 24, 2003)
- Audit Report on *The Department's Audit Resolution Process* (DOE/IG-0639, February 17, 2004)

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