



U.S. Department of Energy
Office of Inspector General

Special Report

Management Challenges at the Department of Energy

DOE/IG-0580

December 2002



U. S. DEPARTMENT OF ENERGY
Washington, DC 20585

December 31, 2002

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman (Signed)
Inspector General

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

BACKGROUND

At the request of Congressional leadership, the Office of Inspector General has, for the past several years, identified what it considers to be the most significant management and performance challenges facing the Department of Energy. This effort, which was codified as part of the Reports Consolidation Act of 2000, is now done on an annual basis and includes an assessment of the agency's progress in addressing each challenge area. As in the past, the methodology employed by my office relies on recent and on-going audit, inspection, and investigation work. The process places great emphasis on the identification of those programs and operations with demonstrated performance problems and those which are, in our judgment, inherently the most difficult to manage. While any analysis of this sort is somewhat subjective, we believe that the result is a balanced, comprehensive depiction of Departmentwide challenges.

The Office of Management and Budget, in 2001, issued the *President's Management Agenda*. The Agenda included five government-wide initiatives for improving management and performance that all federal agencies were to address: strategic management of human capital; competitive sourcing; improved financial performance; expanded electronic government; and, budget and performance integration. The Department of Energy was also assigned responsibility for a specific initiative, to develop and implement better research and development investment criteria. Where appropriate, this report identifies the relationship between the Office of Inspector General's list of management challenges and the initiatives in the *President's Management Agenda*.

RESULTS

In our judgment, the following are the most serious challenges that the Department needs to address in 2003 and beyond:

- Contract Administration
- Environmental Cleanup
- Information Technology Management
- National Security

- Performance Management
- Stockpile Stewardship
- Worker/Community Safety

Since our last report, the Department's senior management has taken positive steps to address a number of previously reported challenges. While these issues have been deleted from the management challenge list, they are, nonetheless, complex subject areas that will continue to require management's attention and periodic assessment.

It should be noted that the Department, in its FY 2002 Performance and Accountability Report, identifies a similar set of issues that impact the Department's ability to fulfill its critical missions. In this regard, the Department and the Office of Inspector General will continue to evaluate agency performance in an effort to improve programs and operations, particularly as they relate to the management challenge areas identified in this report.

Attachment

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

MANAGEMENT CHALLENGES AT THE DEPARTMENT OF ENERGY

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OVERVIEW

INTRODUCTION

The Department of Energy (Department) is a multi-faceted agency encompassing a broad range of national security and scientific activities with an annual appropriation of about \$21 billion. In conducting these endeavors, the Department employs more than 115,000 federal and contractor staff in 35 states and is organized into four business lines: National Nuclear Security, Environmental Quality, Energy Resources, and Science. Specific missions include ensuring that the Nation's nuclear weapons stockpile is safe and reliable; environmental clean-up at Department facilities and surrounding areas; fostering a secure and reliable energy system; and, conducting world-class scientific research. In the wake of the events of September 11, 2001, the Secretary has charged each programmatic office with more sharply focusing its efforts and activities on the Department's overarching mission to protect and enhance national security.

In accordance with the Reports Consolidation Act of 2000, this report sets forth the Office of Inspector General's (OIG) conclusions on the most serious management challenges facing the Department. Our conclusions are based on knowledge gained through the performance of audits, inspections, and investigations of the Department and its operations.

CONCLUSIONS AND OBSERVATIONS

As of the end of Calendar Year 2002, the OIG had identified seven key management challenge areas facing the Department. These represent the most serious management and performance challenges that are impacting the agency's ability to carry out its critical missions. Each of these areas is briefly discussed in the body of the report:

- Contract Administration
- Environmental Cleanup
- Information Technology Management
- National Security
- Performance Management
- Stockpile Stewardship
- Worker/Community Safety

Recently-issued OIG reports are used to illustrate key aspects of the challenges. We have also included, as appropriate, areas of progress in each area and briefly assessed the Department's actions in addressing

those challenges. Appendix 1 lists key OIG reports issued during the past year that are associated with each of the challenge areas. The list of challenges, which is presented alphabetically, differs somewhat from our previous lists. Some challenges have shifted focus due to the changing situations worldwide. The prevention of terrorism, for example, has brought a significant focus not only to the protection of nuclear weapons but also to the protection of materials that could be used to produce weapons of mass destruction. In addition, the report has combined and re-titled some areas to better capture the essence of the challenge. For example, Infrastructure and Asset Management and Security and Safety from last year's list were reorganized and re-named. Appendix 2 presents a crosswalk between the current list and the list we provided last year. In addition, Appendix 3 discusses the status of three management challenges reported in 2001, which are not a part of our 2002 report.

As we have stated in the past, many of the challenges represent difficult, and in some cases intractable, problems that will require a concerted effort over a long period of time. Others, such as Performance Management and Information Technology Management can be addressed more quickly through the implementation of effective administrative processes and systems.

Signed

Office of Inspector General

MANAGEMENT CHALLENGES AT THE DEPARTMENT OF ENERGY

Challenge Summaries

The following sections detail our observations regarding each challenge area, including, where appropriate, Departmental efforts or accomplishments that have come to our attention. In addition, we have identified the relationship between these areas and those Departmental initiatives that relate directly to *The President's Management Agenda*.

Contract Administration

A significant portion of the Department's mission is accomplished through contracts, with industrial, academic, and nonprofit institutions operating the government-owned plants and laboratories under a "management and operating" contractor relationship. These contracts, with an annual value of about \$14.8 billion, represent the largest share of the Department's budget. Contract administration, which includes project management, has been a longstanding challenge. Although the Department has changed its contract management approach with respect to its major facility contracts, as well as the overall management of its procurement system, the Department continues to have problems with contract management practices and difficulties in managing some of its major projects, as illustrated below.

Concerns about the Department's ability to build new facilities or upgrade existing systems have arisen due to cost overruns, schedule slippages, and other project management problems. As reported in *Cost-Sharing at the Ashtabula Environmental Management Project* (DOE/IG-0558, June 2002), the Department did not evaluate cost-sharing arrangements when entering into a remediation contract for the Ashtabula Environmental Management Project. Had cost-sharing provisions been included in the current contract, the Department could have avoided about \$25 million in unnecessary costs and fees. Additionally, the Department could avoid about \$34 million on future contracts by requiring the contractor to pay its fair share of the cost to clean up its plant and eliminating all fees.

During the past year, OIG reports have also disclosed challenges in the use of procurement cards. Our report on the *U.S. Department of Energy's Purchase Card Program – Lessons Learned* (IO1OP001, February 26, 2002), disclosed a number of complex schemes by contractor employees devised to facilitate the misuse of purchase cards. Even when existing policies and procedures were present, they were not always adequately enforced. For example, our report on the *Sandia*

National Laboratories Procurement Card Program (WR-B-02-03, August 6, 2002), showed that Sandia had not enforced its existing policies and procedures nor did it have adequate controls over the approval of transactions. There were instances where Sandia procurement cardholders purchased restricted items, split purchases to avoid transaction limits, and allowed unauthorized users to make purchases. Sandia's internal auditors had identified problems with internal controls for administering the procurement card contract and program in 1998, but problems still remained in 2002.

Based on ongoing work at Los Alamos National Laboratory, the OIG has observed a substantial degree of dysfunction in the Laboratory's handling of property loss and theft. In fact, the OIG and other reviewers have identified significant weaknesses in internal controls over property and the use of purchase cards. We expect to issue reports on these matters in the near future.

The Office of Management, Budget and Evaluation has an ongoing review of 32 of the Department's 67 locations that operated purchase card programs. The review has identified no instances of fraud, waste, or abuse. However, it did disclose areas where control procedures need to be strengthened or clarified to ensure that Departmental purchase card programs operate in a strong environment and to further limit our vulnerability to misuse.

The Department reported it has initiated several actions to improve contract administration in 2002, such as:

- Reviewing its science laboratory management and operating contracts to develop innovative approaches and techniques for improving contractor performance and contract administration;
- Developing a model for improving the management and performance of its National Nuclear Security Administration (NNSA) contractors that identified key concepts like strengthening of performance-based management, attainment of fiscal efficiency, and restructuring of federal and contractor oversight and functions;
- Completing several assessments of its major site environmental management contracts that identified issues that contracting officers need to focus on to improve performance; and,

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- Implementing recommendations made by the National Research Council of the National Academy of Sciences on Departmentwide policies and procedures to improve project management deficiencies.

In Fiscal Year (FY) 2003, the Department plans to conduct a benchmarking study of projects focusing on factors for success, and to establish a risk-based assessment process to review and approve projects in their conceptual design phase.

Environmental Cleanup

During the Cold War, the nuclear weapons complex generated large amounts of hazardous and radioactive wastes. The Department has the daunting task of clean-up at numerous contaminated facilities that supported nuclear weapons production activities. This effort is complicated by the fact that the clean-up processes it employs must protect the health of its workforce and citizens in the communities surrounding Department sites.

The Department has made some significant strides in its remediation efforts. For example, it has put in place accelerated clean-up contracts for many of its sites. In addition, in 2002, the President recommended, and the Senate approved, Yucca Mountain as the site to establish a safe repository in which to store the nation's nuclear waste. The Administration asserts 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.

However, the Department is at risk of not meeting its long-term cleanup objectives if it does not clearly define needs to meet mission requirements and develop comprehensive plans for each site. In an effort to make the program more effective and efficient, the Office of Environmental Management (EM) completed a "top-to-bottom" assessment of all aspects of its EM program. In the resulting report, *A Review of the Environmental Management Program* (February 4, 2002), EM concluded that there was a systemic problem with the way it has conducted its activities. The underlying theme in the report was that the EM program has not been driven as a project with a completion mindset along with an appropriate sense of urgency. The emphasis was on managing risk rather than actually reducing risk to workers, the public, and the environment.

During the year, the OIG continued to identify problems with the way the EM program was implemented. For example, in October 2001, the Department changed its original plan for processing salt waste and announced that solvent extraction was the preferred treatment technology. Our report on *Salt Processing Project at the Savannah River Site* (DOE/IG-0565, August 27, 2002) found that direct disposal in grout technology posed less risk to on-site workers, the general public, and the environment than solvent extraction. The direct disposal alternative is also the least costly of the evaluated alternatives for treating salt waste.

At the Ashtabula Environmental Project, we found that cleanup would not be completed as originally planned and that questionable costs of about \$4.9 million had been billed by and reimbursed to the contractor. Specifically, our report on *Remediation and Closure of the Ashtabula Environmental Management Project* (DOE/IG-0541, January 15, 2002) disclosed that the cleanup effort might not be completed until 2012 instead of 2003, extending the 10-year expected life of the project to 19 years, resulting in a likely increase in project costs of over \$60 million.

Infrastructure issues also continue to present challenges to the Department as well as the EM program. During the years of nuclear weapons production, over 20,000 facilities were constructed that no longer serve a mission and have been identified as excess to the Department's needs. The cost of performing surveillance and maintenance on these facilities was estimated to exceed about \$70 million annually in FY 2001. Over time, these costs and the potential for negative impacts to worker safety and the environment will increase. In our report, *Disposition of the Department's Excess Facilities* (DOE/IG-0550, April 3, 2002), we found that the Department did not fully consider mission requirements, risk reduction, and costs when prioritizing facility disposition activities. The OIG also has an ongoing audit regarding the adequacy of EM's planning for its infrastructure needs.

Information Technology Management

Congress passed the Clinger-Cohen Act of 1996 and the Government Management Information Security Act of 2000 (GISRA) to enhance the management and control of information technology (IT). Further, the

President's Management Agenda encourages the use of electronic commerce to make it simpler for citizens to receive high-quality services from the Federal government while reducing the cost of delivering those services.

With an estimated \$1.4 billion annual expenditure for IT, it is essential that the Department develop and implement an effective IT management investment and control process. Although the Department continues to integrate IT into all aspects of its management and administration of various missions, it has experienced problems in fully implementing the requirements of the Clinger-Cohen Act and GISRA.

Information technology investment and development and cyber protection have suffered in the past from program management planning and execution weaknesses. For example, we found that the planned and ongoing nuclear materials accounting systems development activity was not always consistent with the Department's Corporate Systems Information Architecture. The Department maintains the Nuclear Materials Management Safeguards System (NMMSS), which comprises a major component of the Government's nuclear materials inventory accounting system, but also has over 50 separate nuclear material tracking systems. Many of these systems are duplicative and inefficient. Our report, *Nuclear Materials Accounting Systems Modernization Initiative* (DOE/IG-0556, June 6, 2002), concluded that the Department had not adequately managed its activities to redesign or modernize its nuclear materials accounting systems.

Similarly, we found that while the Department had taken a number of positive steps to improve its unclassified cyber security program, many of its critical information systems remained at risk. For example, we noted that the Department had not (1) consistently implemented a risk-based cyber security approach, (2) assured continuity of operations through adequate contingency and disaster recovery planning, (3) strengthened its incident response capability by reporting all computer incidents, (4) ensured that employees with significant security responsibilities had received adequate training, and (5) adequately addressed configuration management and access control problems. Our report, *The Department's Unclassified Cyber Security Program 2002* (DOE/IG-0567, September 9, 2002), concluded additional work in policy development and implementation is necessary to ensure that critical information technology resources are adequately protected.

Like most private sector and government organizations, the Department has an aggressive program to provide its Federal and contractor personnel with the ability to remotely access a number of unclassified information systems. While the benefits of such access are clear, there is a corresponding increase in certain risks, most importantly, the potential for unauthorized access to the Department's information systems. Our report on *Remote Access to Unclassified Information System* (DOE/IG-0568, September 13, 2002) pointed out that the majority of offices reviewed had not adequately protected information systems from unauthorized remote access. For example, over half of the offices had not: (1) considered the risk associated with remote access when developing cyber security protection plans; (2) developed specific guidance addressing remote access security requirements; and, (3) required the use of protective measures such as personal firewalls, up-to-date virus protection, and current systems software. The Department reported it has made some progress in the area of Information Technology. For example:

- The Chief Information Officer now directly reports to the Deputy Secretary and is the primary official for Departmentwide information management issues.
- The Department developed the Information Resources Management Strategic Plan that includes specific goals and performance measures targeted at the reform of IT management processes associated with the Clinger-Cohen Act.
- The Department is progressing in developing an Enterprise Architecture that will serve as a roadmap for guiding investment decisions and achieving systems integration throughout the Department.
- The Department instituted a Capital Planning and Investment Control to address previous deficiencies in IT investment and management.
- The Department upgraded its site cyber security protection through the expanded use of firewalls and intrusion detection software and stronger passwords.

In FY 2003, the Department plans to publish the *Cyber Security Performance Program* that implements risk-based policies for the protection of cyber assets. The Department also plans to promulgate a set of cyber security manuals, which will lead to the establishment of Risk Management and Certification & Accreditation processes to support the Department's Cyber Security Management Program. In addition, future plans include issuing internal policy that will establish requirements for IT management throughout the Department and completing an acquisition framework. Plans also include issuing internal policy that will establish requirements for IT management throughout the Department and completing an acquisition framework.

Although progress has been made in establishing management processes to control IT planning and investment, and cyber security, the Department's IT management challenge remains to effectively implement these processes to, among other things, avoid system duplication and to minimize system vulnerabilities.

National Security

While the deterrent provided by nuclear weapons has been, and continues to be, a key component of the Nation's security posture, the Department now faces a complex set of challenges related to defending against worldwide threats. These challenges, brought to the forefront by the events of September 11, 2001, now require the Department to consider evolving security threats and the need to identify and implement new security measures. The Department has been instrumental in the development of technologies designed to counter future terrorist acts, including systems to detect airborne biological agents, sensors to track missile launchers or other weaponry in a desert environment, and chemicals to decontaminate buildings, such as the anthrax-infected Hart Senate Office Building. However, audits and inspections conducted over the last year have shown that improvements can be made to better control foreign access to valuable material and information.

Specifically, our audit on *Accounting for Sealed Sources of Nuclear Material Provided to Foreign Countries* (DOE/IG-0546, March 20, 2002), determined that the Department and its predecessor agencies did not enforce requirements for reporting sealed source information and could not fully account for the sealed sources of nuclear material lent to

foreign countries. Because of concerns regarding the possible misuse of these radioactive sources, including the potential for the development of radiological dispersal weapons, recommendations were made to improve the reporting system and identify the location of the material in cooperation with the International Atomic Energy Agency.

In addition to protecting sensitive materials, access to Department sites is critical to the security of the Nation. The Department has three nuclear weapons laboratories and many other multi-program laboratories that perform sensitive work on preserving the stockpile and countering terrorism at home and abroad. Our report, *Personnel Security Clearances and Badge Access Controls at Department Headquarters* (DOE/IG-0548, March 26, 2002), disclosed that process problems with the Department's clearance and badging controls could allow unauthorized individuals access to Department Headquarters. Personnel who had discontinued their employment with the Department had either not had their clearance terminated or had not returned their badges to the Department. While we found no instances of inappropriate access, these situations could have allowed unauthorized individuals easy entry to Department facilities. A similar audit is ongoing at selected Department field locations.

In a similar vein, the OIG issued a report on the foreign visits and assignment program at two national laboratories. We found that the Department had not adequately controlled unclassified visits and assignments by foreign nationals. Each year the Department's national laboratories host thousands of visitors from around the world. These visits benefit both the Department and its international partners by providing a forum for the exchange of information, a path for open communications and the stimulation of ideas, and an opportunity for the enhancement of research. These visits, however, pose certain security risks. Specifically, as noted by the *2002 Hamre Commission Report*, our adversaries might use unclassified activities – such as those taken by visitors and assignees – to gain access to classified activities.

The creation of the Department of Homeland Security (DHS) also poses additional challenges to the Department. For example, several Department activities and organizations will become part of the new agency. The Department will need to plan for this transition in sufficient detail to ensure an uninterrupted focus on national security. Furthermore, the Department will need to establish and maintain

efficient, well-coordinated mechanisms for interacting with DHS on issues relating to terrorism and homeland security. We note, for example, that at least two national laboratories have already established homeland security organizations. It is not yet clear to us how these and other Departmental organizational components will interact with DHS. The Department must work to ensure that where its mission and capabilities intersect the mission and needs of DHS, bureaucratic inefficiencies are minimized and national security is not compromised.

Performance Management

The President's Management Agenda identified Budget and Performance Integration as a government-wide initiative and outlined a plan to provide a results-oriented management process for the Federal government. A primary focus of the President's plan is that funding allocations are based on the achievement of goals. In the past, the Department has been criticized for deficiencies that include: (1) performance measures that are not quantifiable, (2) performance measures that do not support key goals, and (3) underlying processes that are not results oriented. In response to this criticism, the Department created the Office of Program Analysis and Evaluation and is moving toward a five-year planning, programming budget and evaluation system, which is intended to better integrate improved performance measures with the budget. In addressing this issue, the Department needs to ensure that comprehensive metrics are in place and are used to manage ongoing programs and activities effectively. To illustrate, our report on *Environmental Management Performance Measures* (DOE/IG-0561, June 27, 2002) noted that although the Office of Environmental Management had developed a number of corporate and project-specific performance measures, these measures did not capture overall program results. Specifically, the measures did not cover the majority of cleanup projects or budgets, capture overall program performance, or address risk reduction attributes.

In another report on the *Synchrotron Radiation Light Sources at Lawrence Berkeley National Laboratory and Stanford Linear Accelerator Center* (DOE/IG-0562, July 22, 2002), we found that the Office of Basic Energy Sciences had not established performance measures to evaluate the use of beam lines at its user facilities. Specifically, while beam lines at the Stanford facility were being fully used, those at Berkeley were not even though researchers with valid scientific projects had requested time to use the lines.

A recent report, *Remote Treatment Facility* (DOE/IG-0573, November 5, 2002), disclosed that the Department had not taken a corporate approach and integrated all mission needs in the Remote Treatment Facility planning and design process. While the Department had established performance measures as required by the *Government Performance and Results Act of 1993*, such measures were not sufficient in scope and did not address the ultimate disposition of all site remote-handled solid waste.

In FY 2002, the Department reported that it completed the following efforts:

- Issued new policy to provide consistent application of performance measurement principles;
- Established a formal training program to facilitate the development and reporting of quantifiable performance goals and measures in conjunction with the budget process;
- Implemented new performance tracking software to improve reporting and analysis capabilities and facilitate more useful information for decision making; and,
- Integrated performance plans with FY 2003 and FY 2004 budgets and utilized performance information to support its budget decisions.

In FY 2003, the Department plans to issue an Annual Performance Plan that will show its progress in developing better goals and targets that are more results driven and outcome oriented. In addition, internal assessments will be conducted to identify ways to improve performance management practices. These actions are encouraging and responsive to establishing more meaningful performance metrics and better integrating performance results into budget decisions. The OIG will continue to monitor the Department's performance in this critically important area.

Stockpile Stewardship

The Department's plan for stockpile stewardship is one of the most complex, scientifically technical programs ever undertaken. The

Department is responsible for maintaining the safety, reliability, and performance of the aging nuclear weapons in the Nation's stockpile. Since the moratorium on underground testing of nuclear weapons, the Department has accomplished this responsibility through its Stockpile Stewardship Program. The Department is required to annually certify to the President that the nuclear weapons stockpile is, in fact, safe and reliable and that underground nuclear testing does not need to be resumed. Ultimately, the program's success is dependent upon developing an unprecedented set of scientific tools to better understand nuclear weapons, enhancing stockpile surveillance capabilities, and, in the process, extending the life of the weapons that comprise the stockpile.

Deficiencies have been identified in surveillance tests of stockpiled nuclear weapons, a key component of the Stockpile Stewardship Program. Since 1996, the Department has not met certain milestones for surveillance testing and, in some cases, now faces a significant backlog. This backlog puts the Department at risk for not having critical information on the reliability of these weapons. Deficiencies have also been identified in conducting significant finding investigations to determine the cause and impact of problems identified by surveillance tests, and to recommend corrective actions.

As part of the *Strom Thurmond National Defense Authorization Act of 1999*, Congress created *The Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile* to review and assess the Stockpile Stewardship Program and related activities. The Panel's FY 2001 report addressed five major areas that needed attention during FY 2002, and beyond. These were (1) new presidential guidance; (2) a capable and flexible weapons complex; (3) rigorous surveillance, assessment and certification processes; (4) test readiness; and, (5) decisive NNSA leadership and management. The Panel's March 2002 report provided specific details in each of these areas. Some involve action beyond the direct control of the Department, but many can be addressed from within.

During the past year, OIG reports have addressed difficulties that the Department has had in meeting this critical mission. For example, our audit of *National Nuclear Security Administration's Test Readiness Program* (DOE/IG-0566, September 9, 2002) disclosed that, based on the current status of available human and physical resources, the

Department's ability to conduct an underground nuclear test within established parameters was problematic. In addition, a report issued by the Nevada Operations Office, *Enhanced Test Readiness Cost Study*, concluded that the Department's ability to maintain a test readiness posture of 24 to 36 months is "at risk" at the currently planned funding level of \$10 million per year. The conclusions in this report were consistent with the OIG's findings.

In a similar vein, an audit of *The Department of Energy's Pit Production Project* (DOE/IG-0551, April 12, 2002) disclosed that the Department's ability to produce a certifiable pit in accordance with its performance plans is at risk. As of December 2001, over half of the approximately 40 nuclear manufacturing processes that will be used to produce pits were behind schedule or had been delayed. While Los Alamos asserted that the delays occurred because the original schedule was too aggressive, we identified deficiencies in the management control process that make the on-time delivery of a certifiable pit questionable.

Last year, we reported on problems with the Department's stockpile surveillance testing and related significant finding investigations. This year, our audit on the *Resolution of Significant Finding Investigation Recommendations* (DOE/IG-0575, November 18, 2002) disclosed that while NNSA could account for the resolution of the 26 most serious significant finding investigation (SFI) recommendations related to problems affecting weapon safety, reliability, or performance, the status of 74 additional recommendations, each with a potential consequence for the surveillance program's operations and processes, was not tracked. We found that no action had been taken on 23 of the recommendations and that most were not assigned to any specific individual or organization for follow-up. NNSA did not have controls in place to ensure that such assignments were made and that follow-up actions were completed. In our view, the failure to track and resolve SFI recommendations, admittedly those that may have been determined to be of a lower risk and/or priority, has the potential to undermine the effectiveness of the Department's testing regime.

In addition, our review on the *Depleted Uranium Operations at the Y-12 National Security Complex* (DOE/IG-0570, September 25, 2002) pointed out that although the Y-12 depleted uranium facility is currently able to manufacture components, NNSA cannot ensure the continued

reliability of national security processes at the site. Production equipment, in many cases, is outdated, damaged, or beyond repair.

Finally, as is the case with most major Department programs, NNSA faces challenges with regard to repairing and replacing its deteriorating infrastructure. Although Congress has committed substantial funds to infrastructure improvements over the next 10 years, our work has led us to conclude that NNSA needs better planning and prioritization of its requirements to ensure that the additional funds, which may approach \$2 billion, are used as effectively as possible.

Worker/Community Safety

The Department performs a wide variety of work to carry out the many missions of the Department. With thousands of employees and the local communities to consider, safety is a key concern to the Department. Other agencies and or groups, such as State regulators, the Environmental Protection Agency, the Defense Nuclear Facilities Safety Board, and the Office of Independent Oversight and Performance Assurance also help the Department stay focused on the safety of its operations and facilities. OIG reports have identified problems with safety operations or plans at several of the Department's facilities.

Our report on *National Nuclear Security Administration's Test Readiness Program* (DOE/IG-0566, September 9, 2002) disclosed Nevada had not fully updated its nuclear explosives procedures and activities to incorporate enhanced nuclear safety requirements issued in fiscal year 2001. According to Nevada, it could take from 12 months to 18 months to complete the remaining six areas master studies. Without these studies completed, it could affect the ability to resume underground testing should the President determine that such tests are needed.

Likewise, the ongoing review of the *National Nuclear Security Administration's Nuclear Explosive Safety Study Program* disclosed that required comprehensive Nuclear Explosive Safety studies at Pantex have been delayed for a majority of active nuclear weapons types in the Nation's stockpile. While revalidation studies have been conducted for these weapon types, most were late, causing, in some cases, work delays.

A priority of the Defense Nuclear Facilities Safety Board (Board) has been safety at the Department's Pantex site. For example, in 2000, the Board reported a problem with the Department's software quality assurance standards and the Department was to prepare a corrective action plan to address the deficiencies. In 2002, the Board sent the Department a number of recommendations focusing on shoring up the level and availability of safety expertise made available to the Pantex Plant. The Board also issued a recommendation on the quality assurance for safety-related software because after two years of effort to produce a corrective action plan, the Department's attempts now appear to be stalled.

Our report on *Nuclear Safety Rules at Ashtabula* (DOE/IG-0576, November 29, 2002), identified issues relating to nuclear safety. Specifically, that radiological work at the Metals Plant and commercial work with Department equipment were not covered by a license of nuclear safety procedures. In addition, during our ongoing *Inspection of Explosives Safety at Selected Department Sites*, we concluded that improvements could be made in the areas of explosives, fire, and lighting safety.

Calendar Year 2002 Reports and Ongoing Reviews

Contract Administration

Issued Reports:

Audit Report on "Procurement Administration at Brookhaven National Laboratory" (CR-B-02-02, August 22, 2002)

Audit Report on "Sandia National Laboratories Procurement Card Program" (WR-B-02-03, August 6, 2002)

Audit Report on "Privatization of Safety Management Services at the Savannah River Site" (DOE/IG-0559, June 18, 2002)

Audit Report on "Cost Sharing at the Ashtabula Environmental Management Project" (DOE/IG-0558, June 7, 2002)

Audit Report on "Alternative Fuels Use at the Department of Energy" (DOE/IG-0553, May 2, 2002)

Audit Report on "Funds Received from Termination of the Silo 3 Subcontract at the Fernald Environmental Management Project" (ER-L-02-02, April 15, 2002)

Inspection Report on "Inspection of Licensing of Trade Secrets by Sandia National Laboratories" (DOE/IG-0547, March 22, 2002)

Inspection Report on "Department of Energy's Purchase Card Programs – Lessons Learned" (IO1OP001, February 26, 2002)

Audit Report on "Grant Administration at the Oakland Operations Office" (WR-B-02-02, January 15, 2002)

Audit Report on "Advanced Radioisotope Power Systems Program" (DOE/IG-0540, January 14, 2002)

Audit Report on "Passive Magnetic Resonance Anomaly Mapping at Environmental Management Sites" (DOE/IG-0539, January 11, 2002)

Appendix 1 (Continued)

Ongoing Reviews:

- Sensitive Equipment Accountability
- Local Government Use of Nuclear Waste Funds
- Administration of Financial Instruments by Laboratories
- Research and Development Investment Criteria for Fossil Energy
- Weatherization Assistance Program
- Department's Agreement for Utility Services at East Tennessee Technology Park
- Reindustrialization at the East Tennessee Technology Park
- Facility Maintenance at the Hanford Site
- Disposal of Surplus/Excess Personal Property at the Nevada Test Site
- Beryllium Operations at Y-12
- Albuquerque Operations Office Transportation Procurement
- Oak Ridge National Laboratory Subcontracting
- NNSA Funding and Leasing Issues
- Savannah River Operations Office Emergency Response and Law Enforcement Related Grants
- Bonneville Power Marketing Administration's Kaiser Remarketing Funds

Information Technology Management

Issued Reports

Audit Report on "Business Management Information System" (DOE/IG-0572, November 4, 2002)

Evaluation Report on "The Federal Energy Regulatory Commission's Unclassified Cyber Security Program 2002" (DOE/IG-0569, September 13, 2002)

Audit Report on "Remote Access to Unclassified Information Systems" (DOE/IG-0568, September 13, 2002)

Evaluation Report on "The Department's Unclassified Cyber Security Program 2002" (DOE/IG-0567, September 9, 2002)

Audit Report on "Nuclear Materials Accounting Systems Modernization Initiative" (DOE/IG-0556, June 6, 2002)

Audit Report on "Cyber-Related Critical Infrastructure Identification and Protection Measures" (DOE/IG-0545, March 20, 2002)

Appendix 1 (Continued)

Ongoing Reviews

- Information Systems Planning, Implementation, and Security Practices at the Power Marketing Administrations
- Wireless Communications

Environmental Stewardship

Issued Reports

Audit Report on "Planned Characterization Capability at the Waste Isolation Pilot Plant" (DOE/IG-0577, December 18, 2002)

Inspection Report on "Inspection of Nuclear Safety Rules at the Ashtabula Environmental Management Project" (DOE/IG-0576, November 26, 2002)

Audit Report on "Remote Treatment Facility" (DOE/IG-0573, November 5, 2002)

Audit Report on "Idaho Settlement Agreement Activities" (DOE/IG-0571, October 9, 2002)

Audit Report on "Salt Processing Project at the Savannah River Site" (DOE/IG-0565, August 27, 2002)

Audit Report on "Advanced Vitrification System" (DOE/IG-0564, August 20, 2002)

Audit Report on "Closure of the Fernald Environmental Management Project" (DOE/IG-0555, June 5, 2002)

Audit Report on "The Plutonium Stabilization and Packaging System at the Rocky Flats Environmental Technology Site" (DOE/IG-0554, May 13, 2002)

Audit Report on "Completion of K Basins Milestones" (DOE/IG-0552, April 15, 2002)

Audit Report on "Disposition of the Department's Excess Facilities" (DOE/IG-0550, April 3, 2002)

Audit Report on "Idaho Operations Office Planned Construction of a Waste Vitrification Facility" (DOE/IG-0549, April 1, 2002)

Appendix 1 (Continued)

Audit Report on "Department of Energy's Strategy for Disposal of Plutonium"
(ER-L-02-01, February 7, 2002)

Audit Report on "Soil Washing at the Ashtabula Environmental Management Project"
(DOE/IG-0542, January 28, 2002)

Audit Report on "Remediation and Closure of Ashtabula Environmental Management Project" (DOE/IG-0541, January 15, 2002)

Ongoing Reviews

- Advanced Mixed Waste Treatment Project at the Idaho National Engineering and Environmental Laboratory
- Planning for Waste Treatment Plant at Hanford
- Disposal of WIPP's Remote-Handled TRU Waste
- Treatment of Mixed Incinerable Wastes
- Waste Stabilization Facility at Savannah River
- Local Government Use of Nuclear Waste Funds
- In-House Energy Management
- Plutonium Finishing Plant at the Hanford Site

National Security

Issued Reports

Audit Report on "Calutron Isotope Production Capabilities" (DOE/IG-0574, November 14, 2002)

Inspection Report on "Inspection of the Security of Spent Nuclear Fuel at the West Valley Demonstration Project" (DOE/IG-0563, July 23, 2002)

Inspection Report on "Inspection of Department of Energy Fresh Pursuit Policies and Practices" (DOE/IG-0557, June 6, 2002)

Audit Report on "Personnel Security Clearances and Badge Access Controls - Department of Energy Headquarters" (DOE/IG-0548, March 25, 2002)

Audit Report on "Accounting for Sealed Sources of Nuclear Material Provided to Foreign Countries" (DOE/IG-0546, March 20, 2002)

Appendix 1 (Continued)

Inspection Report on "Inspection of the Accountability and Control of Sealed Radioactive Sources at Selected Department of Energy Sites" (DOE/IG-0544, March 12, 2002)

Audit Report on "The Department's Unclassified Foreign Visitor and Assignment Program" (DOE/IG-0579, December 23, 2002)

Ongoing Reviews

- Implementation of the Indications, Warning, Analysis, and Reporting
- Department's Integrated Security System
- Personnel Security Clearances and Badge Access Controls at Selected Field Locations
- Selected Aspects of Security Force Administration at the Department
- Power Marketing Administration's Infrastructure Protection
- Special Nuclear Materials Received from Foreign Countries
- Security Issues
- Force on Force Recommendations
- Transportation Security at the National Nuclear Security Administration – Savannah River Site
- Department of Energy Counterterrorism Coordination
- Hazardous/Toxic Chemical Security
- Firearms Internal Controls
- FY 2002 4th Quarter Intelligence Oversight
- Export Control of Savannah River Operations Office Grant/Work-for-Others Information
- Explosive Security
- Security of Spent Nuclear Fuel Shipments
- Review of International Memorandums of Understanding
- Department of Energy Aircraft Security
- Department of Energy Aircraft Support of Joint Technical Operations Team
- Sensitive Information On Department of Energy Websites
- Safeguards and Security at Los Alamos National Laboratory
- Laptop Internal Controls
- Department Nuclear Weapons Incident Response Program
- Controls Over Expenditures at the Office of Transportation Safety

Appendix 1 (Continued)

Performance Management

Issued Reports

Audit Report on "Implementation of Sound Project Management Practices in the Office of Science" (OAS-L-03-02, November 4, 2002)

Audit of "State of Nevada Yucca Mountain Oversight Funds for Fiscal Year 2001" (CR-C-02-01, August 22, 2002)

Audit Report on "Synchrotron Radiation Light Sources at Lawrence Berkeley National Laboratory and Stanford Linear Accelerator Center" (DOE/IG-0562, July 22, 2002)

Audit Report on "Environmental Management Performance Measures" (DOE/IG-0561, June 27, 2002)

Inspection Report on "Inspection of Training Issues at the Rocky Flats Field Office" (SO2IS020, March 22, 2002)

Audit Report on "Relativistic Heavy Ion Collider Project" (DOE/IG-0543, March 6, 2002)

Ongoing Reviews

- Science Infrastructure
- Funding Mission Development Activity at Idaho National Engineering and Environmental Laboratory
- Waste Receiving and Processing Facility at Hanford
- Department of Energy's Spent Nuclear Fuel Lead Laboratory
- Planning and Budgeting for NNSA Infrastructure

Stockpile Stewardship

Issued Reports

Audit Report on "Resolution of Significant Finding Investigation Recommendations" (DOE/IG-0575, November 18, 2002)

Audit Report on "Depleted Uranium Operations at the Y-12 National Security Complex" (DOE/IG-0570, September 25, 2002)

Appendix 1 (Continued)

Audit Report on "National Nuclear Security Administration's Test Readiness Program"
(DOE/IG-0566, September 9, 2002)

Audit Report on "The Department of Energy's Tritium Extraction Facility"
(DOE/IG-0560, June 24, 2002)

Audit Report on "The Department of Energy's Pit Production Project" (DOE/IG-0551, April 12, 2002)

Ongoing Reviews

- Initiatives for Nuclear Nonproliferation
- NNSA's Planning, Programming, and Budgeting System Process and Structure
- Dual Axis Radiographic Hydrodynamic Test Facility
- Dual Axis Radiographic Hydrodynamic Test Facility Commissioning
- National Ignition Facility
- Kansas City Plant Operations
- Nuclear Facilities
- W80 Refurbishment
- Department of Energy's Safety Analysis Requirements
- Department's Management of Beryllium Inventories
- Plutonium-238 Production Capabilities

Worker/Community Safety

Ongoing Reviews

- National Nuclear Security Administration's Nuclear Explosives Safety Study Program
- Memorandums of Agreements at Selected Department of Energy Facilities
- Nuclear Safety Rules at Ashtabula
- Los Alamos National Laboratory Reportable Incident Reports
- Explosives Safety
- Memorandums of Agreement at Brookhaven National Laboratory

Crosswalk of Management Challenges

Continuing Challenges

Contract Administration
Information Technology Management
Performance Management
Stockpile Stewardship

Restated Challenges

FY 2002

Environmental Standards and Stewardship
Infrastructure and Asset Management *

Security and Safety **

FY 2003

Environmental Stewardship
Stockpile Stewardship/Contract
Administration
National Security and
Worker/Community Safety

* Infrastructure and Asset Management was split and restated in Stockpile Stewardship and Contract Administration, respectively.

** Security and Safety was split and restated in National Security and Worker/Community Safety, respectively.

Previous Challenges

Energy Supply
Human Capital
Research and Development Investment

Status of Previously Reported Management Challenges

The Department has taken steps to address three previously reported OIG management challenges and a number of the President's management initiatives. These actions came about as a result of strategic planning and goal setting, management commitment, and concentrated efforts by many Department and contractor personnel. Through these efforts, progress has been made in the areas of Human Capital, Better Research and Development Investment Criteria, and Energy Supply. While these areas still represent daunting issues that the Department must plan for and deal with on a continual basis, we noted that management had put into place a number of initiatives designed to address problematic aspects of these challenge areas. We recognize, however, that these areas will continue to challenge the Department for many years to come and plan to revisit these areas in the future.

Human Capital

Since 1995, the Department has experienced a 27 percent reduction in its workforce. To address the impacts of this dramatic downsizing, a comprehensive human capital management strategy, *Human Capital Update: Accelerating Workforce Restructuring and Addressing Skill Gaps in Mission Critical Positions*, was developed to serve as a baseline for workforce demographics for future change. In addition, several other initiatives have been implemented, such as revitalizing Senior Executive Service mentoring and candidate development programs; expanding use of automated human resource systems; implementing new intern and leadership programs; and, using available personnel tools and flexibilities (including buyouts and early retirement) to rebuild its workforce.

Ongoing OIG work has reinforced the conclusion that progress is being made. For example, our review of *Recruitment and Retention Efforts for Federal Employees* has shown that the Department has initiated programs to attract prospective employees and develop current staff. We did note, however, that corrective actions from prior reports are still not complete. Our audit of *Recruitment and Retention at the Los Alamos and Lawrence Livermore National Laboratories* has found that both laboratories have addressed NNSA's recruitment and retention program objectives to develop and deploy an aggressive, multi-laboratory strategy and a comprehensive plan to ensure that critical skills, knowledge, and technical capabilities were available to the Nuclear Weapons Program. It is still too early, however, to measure the strategy's effectiveness.

While progress is being made, we have also noted that human capital issues still represent hurdles that management must successfully negotiate to meet mission requirements. For example, our audit of *Management of the Stockpile Surveillance Program's Significant Finding Investigations* (DOE/IG-0535, December 18, 2001), cited a shortage of personnel that could affect the ability of the NNSA to resume underground testing within specified timeframes. Personnel shortages were also identified in our report of *National Nuclear Security Administration's Test Readiness Program*

Appendix 3 (Continued)

(DOE/IG-0566, September 9, 2002). The Department agreed with the recommendations made in both reports and noted it was already working on initiatives or actions to mitigate the effect of resource shortages.

Better Research and Development Investment Criteria

Given the magnitude of the Department's research and development activities, which are funded at approximately \$3.3 billion annually, the Administration has noted that significant care needs to be taken in the prioritization and management of these activities. In the last year, as directed in the *President's Management Agenda*, the Department and the Office of Management and Budget (OMB) developed, then worked to refine, investment criteria to assist in allocation decisions for applied research and development investments. This criteria was then used as the basis for the Department's FY 2003 budget request for energy technology programs.

Once the criteria has been further refined, OMB plans to apply it to all federal departments and applicable agencies with applied research and development programs in time for the formulation of the FY 2004 budget. There are also plans to develop separate criteria for evaluating basic research in the near future.

Energy Supply

The Department is taking action to shift its energy research work toward high-risk, longer-range activities with the potential for large payoffs, including energy science research in the physical, biological, and environmental areas. In this regard, the National Energy Policy established five key national goals: modernizing conservation efforts; modernizing our energy infrastructure; increasing energy supplies; accelerating the protection and improvement of the environment; and, increasing our Nation's energy security. To address these goals, resources have been increased to develop technology to make electricity generation and energy use more efficient. Another Departmental program is working to develop more energy efficient and alternatively fueled vehicles capable of reducing or eliminating the Nation's dependence on foreign oil. The Department also supports wind, solar, biomass, hydropower, and geothermal energy research and development projects to find ways to increase domestic energy supplies. Further, the Congress is working on national energy legislation that could affect energy supplies of the future.

The Office of Inspector General believes that the Department cannot unilaterally improve the energy supply situation. Consequently, we are not separately reporting this challenge for FY 2003. Factors that could affect the Department in achieving its goals in the Energy Supply area include the market and consumer adoption of new technologies developed, environmental technologies, the energy industry's profitability, access to capital, and the undertaking of steps necessary to make the energy system less vulnerable.

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