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

Special Report

Management Challenges at the Department of Energy

DOE/IG-0748

December 2006

Department of Energy

Washington, DC 20585

December 13, 2006

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

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

BACKGROUND

On an annual basis, the Office of Inspector General identifies what it considers to be the most significant management challenges facing the Department of Energy. Now required as part of the *Reports Consolidation Act of 2000*, this effort includes an assessment of the agency's progress in addressing previously identified challenges and an evaluation of emerging issues facing the Department. Our conclusions are based on the results of current Office of Inspector General audits, inspections and investigations.

Through this evaluation, the Office of Inspector General highlights high risk Departmental activities and those activities with demonstrated performance problems. Consistent with our mission, the overall goal is to focus attention on significant issues with the objective of enhancing the effectiveness of agency programs and operations. The management challenge process is also used by the Office of Inspector General to set internal priorities for evaluating Department programs and operations.

RESULT

The following are the most significant challenges facing the Department of Energy for Fiscal Year 2007:

- Safeguards and Security
- Environmental Cleanup
- Stockpile Stewardship
- Contract Management
- Project Management
- Cyber Security
- Energy Supply

Additionally, the report includes a "watch list" of three additional emerging issues that warrant continued attention by Department managers. These include Financial Management and Reporting, Worker and Community Safety and Human Capital Management.

In issuing its annual management challenges report, we recognize that the Department's mission is complex, diverse, and is subject to many programmatic risks, including factors outside of the Department's immediate control. The challenges are, for the most part, not amenable to immediate resolution and must, therefore, be addressed through a concentrated, persistent effort over time.

The Department has taken a number of positive actions to strengthen its management processes. For example, the Department is actively addressing the President's Management Agenda to make the Federal Government more efficient, results-oriented, and accountable to the public. In fact, through Fiscal Year 2006, the Department completed official assessments for 94 percent of its available programs, putting it well-ahead of the Office of Management and Budget's implementation schedule under the Program Assessment Rating Tool initiative.

Also, in 2006, the Department reorganized and realigned its resources to strengthen and improve the health, safety, and security of Department workers, facilities, and the public. Further, through a combination of new policies and procedures and increased management emphasis, the Department initiated a program to enhance cyber security throughout the complex. In addition, the Department is working on a multi-year effort to ensure that all of its Federal project directors are certified as part of the Project Manager Career Development Program. The objective of the Program is to enhance the professionalism in the management of the Department's sizable project portfolio.

In its Fiscal Year 2006 Performance and Accountability Report, the Department identified a set of issues impacting its ability to fulfill critical missions. This self-generated list closely paralleled the management challenges reported here.

We look forward to working closely with Department officials to evaluate agency performance in an effort to improve programs and operations.

Attachment

cc: Deputy Secretary
Under Secretary for Energy
Under Secretary for Science
Administrator, National Nuclear Security Administration
Chief Financial Officer
Chief of Staff

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Introduction

While its origins can be traced to the Manhattan Project and the race to develop the atomic bomb during World War II, today the Department of Energy is a multi-faceted agency that encompasses a broad range of national security, scientific, and environmental activities. Since the passage of the *Department of Energy Organization Act* in 1977, the Department has shifted its emphasis and priorities over time as the energy and security needs of the Nation have changed. In recent years, the Department has refocused its efforts in areas such as environmental cleanup, nuclear nonproliferation and weapons stewardship, and energy efficiency and conservation. In order to accomplish its mission, the Department receives an annual appropriation of approximately $24 billion, employs approximately 115,000 Federal and contractor personnel and manages assets valued at more than $126 billion, including a complex of national laboratories.

On an annual basis, the Office of Inspector General (OIG) identifies what it considers to be the most significant management challenges facing the Department. Now codified as part of the *Reports Consolidation Act of 2000*, this effort assesses the agency's progress in addressing previously identified challenges and considers emerging issues facing the Department. The management challenges outlined in this report constitute a major factor in setting internal OIG priorities as it evaluates Department of Energy programs and operations.

Representing risks inherent to the Department's complex operations as well as those related to management processes, these challenges are, for the most part, not amenable to immediate resolution and must, therefore, be addressed through a concentrated, persistent effort over time. This year, the Office of Inspector General identified the following seven management challenges:

- Safeguards and Security
- Environmental Cleanup
- Stockpile Stewardship
- Contract Management
- Project Management
- Cyber Security
- Energy Supply

In addition to identifying these management challenges, we have also developed a "watch list," which consists of significant issues that do not meet the threshold of being classified as management challenges, yet warrant continued attention by Department management. This year, the watch list consists of the following operational and programmatic functions: Financial Management and Reporting, Worker and Community Safety, and Human Capital Management.

By aggressively addressing these challenges, the Department can enhance program efficiency and effectiveness; reduce or eliminate operational deficiencies; decrease fraud, waste, and abuse; and achieve substantial monetary savings.

Management Challenges

Safeguards and Security

While the Department has shifted its focus over time as the needs of the Nation have changed, special emphasis on safeguards and security has remained a vital aspect of the Department's mission. The Department plays a fundamental role in the Nation's security by ensuring the safety of the country's nuclear weapons, advancing nuclear non-proliferation, and providing safe and efficient nuclear power plants for the United States Navy. In order to faithfully execute and preserve this sensitive mission, the Department maintains a substantial security regime, which includes over 4,000 protective force personnel and various physical safeguards for classified material and other sensitive property. In recent years, this management challenge was labeled "National Security." While the current management challenge, Safeguards and Security, encompasses Departmental programs and operations pertaining to national security, it also serves to include a broader range of issues such as internal security controls and protective force property and work environment concerns.

Over the past year, the Department made strides toward improving vital safeguards that secure the agency's numerous employees and facilities. The Department maintains stewardship of vital national security capabilities, ranging from nuclear weapons to leading research and development projects. Department activities are focused on protecting nuclear weapons secrets, but also emphasize a high priority on protecting other sensitive scientific endeavors. During FY 2006, the Department continued its work on an array of new security initiatives, which are intended to improve security across the Department's network of laboratories and defense facilities. Specifically, a number of these actions focused on implementing the necessary improvements to meet the current Design Basis Threat (DBT) policy.

While we view this progress as an important step, during FY 2006, we conducted several reviews that highlighted the need for continued improvement in the area of Safeguards and Security. For example, an October 2005 audit of the Department's implementation of the DBT, which reflects the most credible threats posed to Departmental assets and operations, revealed that the National Nuclear Security Administration (NNSA) experienced delays in implementing changes, including new technologies, to meet the safeguards and security performance requirements contained in the 2003 DBT. Our review included recommendations designed to improve the planning, budgeting, and evaluation of safeguards and security upgrades to meet future DBT requirements (*The National Nuclear Security Administration's Implementation of the 2003 Design Basis Threat,* IG-0705, October 2005).

In addition, a recent audit of the Department's management of non-nuclear high explosives found that two NNSA defense laboratories were not maintaining control, accountability, and safety over a wide array of explosives. Incorporating a wide variety of explosive devices and materials such as rocket motors, propellants, bulk explosives, shaped charges, artillery shells,

ammunition, and detonators, explosives handling and processing is an integral part of the Department's activities. Due to the inherently dangerous nature of high explosives, Department regulations require that strict control and accountability be maintained over all components. Our review found that a lack of control and accountability occurred, in large part, because the laboratories failed to design and implement effective local high explosive management strategies. We made several recommendations designed to aid the Department in improving its high explosives program at all of its sites (*The Department's Management of Non-Nuclear High Explosives,* IG-0730, June 2006).

Further, two separate reviews focusing on security clearance termination and security badge retrieval at the Sandia National Laboratory-New Mexico and the Lawrence Livermore National Laboratory concluded that both laboratories' internal control structures were not adequate to ensure that security badges were retrieved at the time of an employee's departure or that security clearances of departing employees were terminated in accordance with applicable policies and procedures. Given the similarity of our findings in these reviews with a previous review at the Los Alamos National Laboratory, we concluded that senior Department management should consider taking broader action to ensure that all Department sites are adequately addressing issues pertaining to badge retrieval and security clearance termination (*Security Clearance Terminations and Badge Retrieval at the Lawrence Livermore National Laboratory,* IG-0716, January 2006; *Badge Retrieval and Security Clearance Termination at Sandia National Laboratory-New Mexico,* IG-0724, April 2006).

Clearly, the Department's many programs and facilities require the existence of a safe and secure environment. The issues disclosed in our work during FY 2006 suggest the need for continued focus and improvement by Department management in this critical challenge area.

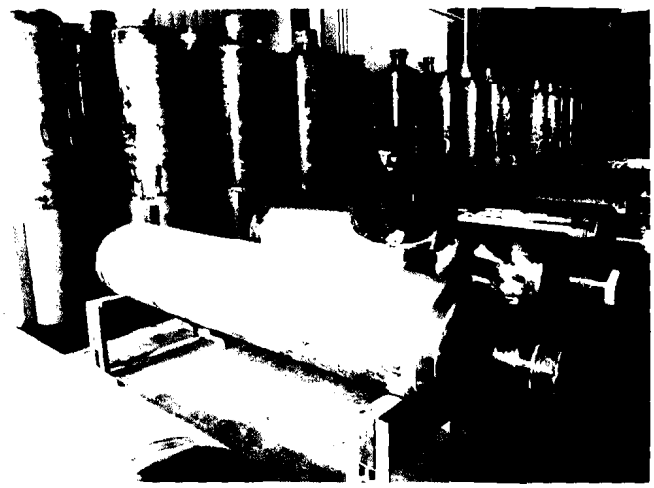
Environmental Cleanup

As a result of the legacy of the Manhattan Project and subsequent activities, the Department's environmental remediation activities are among its most important programs. With the end of the Cold War, this mission became of even greater importance, as efforts to dispose of large volumes of solid and liquid radioactive waste became more essential as a result of more than half a century of nuclear defense work and energy research. The Department is responsible for cleaning contaminated sites and disposing of radioactive, hazardous, and mixed waste resulting from nuclear weapons production, nuclear powered naval vessels, and commercial nuclear energy production. The projected cost of these remediation efforts is over $180 billion, which represents the third largest liability on the overall financial statement of the United States Government.

Due to the risks and hazards associated with this difficult and costly task, we conducted a series of reviews over the past year to assess the progress of the Department's environmental cleanup activities. For example, under the 1989 Tri-Party Agreement between the Department, the Washington State Department of Ecology, and the Environmental Protection Agency, firm milestones were established for completing the retrieval of waste from underground tanks at the Hanford Site. An October 2005 audit disclosed that, in terms of both schedule and cost, the Department will not meet its Agreement milestone for the retrieval of waste from single-shell

tanks located at the Hanford Site's C-Farm. In our judgment, the Department was overly optimistic about its ability to retrieve tank waste and it had not based its approach on sound retrieval experience and proven retrieval technologies. We concluded that our findings have broader implications for the entire tank waste cleanup effort and as a result of tank waste retrieval delays and cost overruns, the Department's ability to meet its Agreement milestone of removing waste from all single-shell tanks by 2018 is in jeopardy (*Accelerated Tank Waste Retrieval Activities at the Hanford Site,* IG-0706, October 2005).

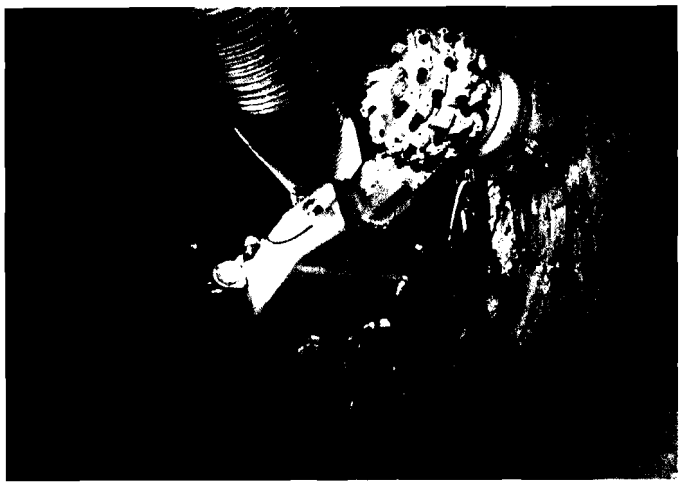
The Department is also responsible for managing the agency's spent nuclear fuel inventory and preparing it for final disposition in a geologic repository. As part of an effort to identify the best method to prepare spent nuclear fuel for disposition at the Savannah River Site, the Department selected a process known as "melt and dilute" as the preferred alternative in a July 2000 Record of Decision, establishing a goal of having the technology in place by 2008. The Record of Decision committed the Department to explore direct disposal as an alternative strategy and to maintain the current conventional processing facility, known as H-Canyon, to address any degrading of spent fuel stored at the Savannah River Site until a new disposal program was implemented. A recent review was conducted to determine the status of the spent nuclear fuel program at the Savannah River Site. We found that there have been delays in developing and implementing a spent nuclear fuel program at the Savannah River Site and as a result, H-Canyon will have to be maintained in an idle, but operational mode, for at least two years. Given the commitment the Department made in the Record of Decision and the absence of a fully developed disposition strategy, the two-year gap is projected to cost taxpayers approximately $300 million. To address this situation, we made several recommendations designed to ensure that the Department establishes a complex-wide strategy and expedites the implementation of a technology to prepare spent nuclear fuel at the Savannah River Site for disposition (*Management of Spent Nuclear Fuel at the Savannah River Site,* IG-0727, May 2006).



High-level waste canisters at the Savannah River Site

In addition to environmental cleanup efforts throughout the country, the Department is responsible for constructing a geological repository at Yucca Mountain, Nevada. In July 2002, after more than two decades of scientific study, President George W. Bush signed the *Yucca Mountain Development Act*, designating Yucca Mountain as the site of the Nation's first geologic repository for radioactive waste and spent nuclear fuel. During FY 2006, the Department made progress toward developing a license application for submittal to the Nuclear Regulatory Commission (NRC), which is required before waste shipments to the repository can begin. While progress has been made in the construction and licensing process at Yucca Mountain, the Department has continued to experience quality control deficiencies, which could affect the ongoing design, analysis, and eventual licensing of the repository. For example, recent

OIG reviews in this area have revealed that quality assurance issues were not promptly identified, investigated, or resolved by the Department. Moreover, we found that a Corrective Action Program, implemented by the Department as required by the NRC, was not effectively managing and resolving conditions adverse to quality at the Yucca Mountain Project. As outlined in several OIG reviews over the past year, the Department must continue to improve quality assurance measures to assure the scientific reliability as well as the overall safety of the proposed repository (*Quality Assurance Weaknesses in the Review of Yucca Mountain Electronic Mail for Relevancy to the Licensing Process,* IG-0708, November 2005; *The Office of Civilian Radioactive Waste Management's Corrective Action Program,* IG-0736, August 2006).



Alpine mining machine excavates alcoves for testing at Yucca Mountain

These reviews highlight the monumental task that the Department faces to ensure that contaminated materials and radioactive waste are disposed of in a safe, timely, and cost effective manner. Overseeing the largest cleanup effort in the world, which encompasses over 2 million acres at 114 sites, the Department made significant progress at several contaminated sites over the past year. However, the Department continues to experience delays in accelerated cleanup programs at various sites and has been challenged by quality assurance concerns at the Yucca Mountain Project. Therefore, in our judgment, Environmental Cleanup remains a management challenge that warrants significant attention on the part of Department management.

Stockpile Stewardship

The Department is responsible for the maintenance, certification, and reliability of the Nation's nuclear weapons stockpile. In order to ensure that our nuclear weapons continue to serve their essential deterrence role, the Department maintains stockpile surveillance and engineering capability, refurbishes selected nuclear systems, and sustains the ability to restore the manufacturing infrastructure for the production of replacement weapons. As has been the case in recent years, given the importance and complexity of the Department's role in ensuring the vitality of the U.S. nuclear stockpile, Stockpile Stewardship has been classified as a significant management challenge.

The conclusion of the Cold War was followed by a moratorium on nuclear testing as well as an end to the development and production of new nuclear warheads. As a result, the Department is responsible for certifying the safety, security, and reliability of 100 percent of the existing U.S. nuclear stockpile. In FY 2006, the Department announced the details of a comprehensive plan to employ a smaller, safer, and more secure nuclear weapons stockpile in order to enhance the Nation's capability to respond to changing security challenges. This plan will attempt to facilitate an improved research and development infrastructure, modernize production facilities,

and consolidate nuclear materials. Although in its initial stages, the plan is a positive step toward maintaining the Department's ability to certify the safety, security, and reliability of the Nation's nuclear stockpile.

Over the past year, the Office of Inspector General conducted a series of reviews to examine the Department's activities and management strategies in this crucial arena. For example, in response to the aging of the Nation's nuclear weapons stockpile, NNSA, working with the Department of Defense, developed strategies, known as Life Extension Programs, to refurbish the weapons stockpile to extend its deployment life. As part of this process, the W76 weapon system will undergo refurbishment at a cost of $916 million through the first production unit date to address aging concerns and to provide long-term certification of the system. An OIG audit concluded that NNSA was at risk of not achieving the first production unit for the W76 refurbishment within the scope, schedule, and cost parameters as detailed in the project plan. Failure to complete the W76 refurbishment first production unit within the established schedule and scope could have a direct effect on full-scale production decisions, impact NNSA's ability to manage project costs, and affect overall national security goals of the refurbishment effort. As a result, we recommended that NNSA strengthen project management planning and ensure future Life Extension Programs implement the project management principles of timely comprehensive project planning (*W76 Life Extension Project,* IG-0729, May 2006).

Additionally, the Department's Sandia National Laboratory is in the process of refurbishing the Spin Rocket Motor, which is a prime component of the B61 nuclear weapon system. Upon receiving allegations that raised serious questions concerning the Department's decision to proceed with the B61 Spin Rocket Motor project, an OIG audit was initiated to evaluate concerns regarding the performance of the motor. Based on reported test anomalies, we concluded that there was a reasonable basis to be concerned about the aging and future performance of the B61 Spin Rocket Motor. However, we noted that the decision to replace the spin rocket motor was not made in accordance with established protocol. We made several recommendations to ensure that future refurbishment projects are managed in accordance with Department procedures, specifically to ensure that such projects are justified and supported based on analyses of refurbishment options and validated cost data (*The National Nuclear Security Administration's B61 Spin Rocket Motor Project,* IG-0740, September 2006).

Over the past year, the Department has taken several steps to further enhance the safety and reliability of the country's weapons stockpile. As demonstrated in recent reviews outlined above as well as those conducted in recent years, the Department can continue to improve in this vital challenge area by enhancing Life Extension Programs and improving upon existing project management issues related to the cost and scheduling of various stockpile stewardship projects.

Contract Management

The Department places significant reliance on contractors, employing over 100,000 contractor employees. Contracts are awarded to industrial companies, academic institutions, and non-profit organizations that operate a broad range of Department facilities, including its most sensitive national security facilities. In fact, a high proportion of the Department's operations are carried out through contracts that consume about three-fourths of its overall budget. As a result,

effective contract oversight is an essential component of the Department's management of its many programs.

During FY 2006, several Office of Inspector General reviews highlighted the need for improved management oversight in the administration of Department contracts. For example, in FY 2005, the Department and its contractors spent over $1.2 billion on information technology (IT) infrastructure and support, including activities such as server and network technical services, database management and administration, and desktop support. Under the *Clinger-Cohen Act*, the Department is required to design and implement a process for maximizing the value obtained from IT support service contracts. In an August 2001 report, we concluded that the Department did not have a comprehensive framework for acquiring such services. Given the continuing potential for significant savings, we initiated a recent audit to determine whether the Department had designed and implemented an effective process for managing and controlling contractor IT support services costs. Our audit revealed that while the Department had initiated action to consolidate requirements for services provided to Federal employees, it continued to face a number of challenges related to contractor procured IT support services. We concluded that there is a potential for significant cost savings at the Department's numerous contractor-managed sites through improved management and control of IT support services (*Information Technology Support Services at the Department of Energy's Operating Contractors,* IG-0725, April 2006).

In addition, a December 2005 review focusing on the Department's Radiological Calibration Laboratory, which is responsible for functions related to dosimetry and radiological instrument calibrations at the Hanford Site, found that the curtailment of operations at the Laboratory, as currently planned, would leave the Office of Environmental Management without site capability to perform internal and external dosimetry assessments and radiological calibrations. The Laboratory is scheduled for demolition by the end of FY 2009 as part of the Office of Environmental Management's cleanup plan. We determined that since a planned replacement facility would not provide the capabilities essential to meet the Office of Environmental Management's dosimetry and calibration needs, the Department risked increased costs from duplication of resources and the loss of mission critical dosimetry and calibration services. As a result, we recommended that the Department integrate programmatic resources on the project and perform a cost-benefit analysis of the available options (*Demolition and Replacement of Hanford's Radiological Calibration Laboratory,* IG-0711, December 2005).

After noting in a previous review that protective force personnel at the Oak Ridge Reservation were working excessive amounts of overtime at a significant cost to the Department, an inspection was initiated to determine whether the protective force contracts for the Oak Ridge Reservation had been modified to include incentives to reduce overtime. Our review disclosed that the Oak Ridge protective force contracts did not include such incentives. Instead, we found that the contract structure had the opposite effect on the overtime structure. We observed that the current protective force contracts at the Oak Ridge Reservation expired in December 2005 and that the Department planned to award new protective force contracts using the same structure as the existing contracts. We recommended that the current structure be further evaluated in order to reduce overtime in a new protective force contract (*Protective Force Contracts at the Oak Ridge Reservation,* IG-0719, February 2006).

To its credit, in response to several of our reviews, the Department has developed strategies and programs to address contract management concerns. However, given the number of contracts awarded and managed by the Department, combined with the issues raised in our reviews, the area of Contract Management remains a significant management challenge for the Department.

Project Management

The Department undertakes numerous unique and complex multi-million dollar projects in order to support its various missions. In recent years, the Department, in responding to identified weaknesses in the area of Project Management, improved the discipline and structure for monitoring project performance. In July 2006, DOE Order 413.3A was issued to provide the Department with project management direction for the acquisition of capital assets with the goal of delivering projects on schedule, within budget, and capable of meeting mission performance, security, and environmental, safety, and health standards. By employing effective policies and controls to ensure that ongoing projects are re-evaluated frequently, the Department has focused on improving project management throughout the complex.

Recent Office of Inspector General reviews have identified additional improvements that are necessary to ensure that the Department's efforts to improve project management principles are effective and accomplishing their goals. For example, a December 2005 audit indicated that the cost of the Mixed Oxide Fuel Fabrication (MOX) Facility at the Savannah River Site will significantly exceed the amounts reported to Congress in 2002. During the course of our review, we found that the Department's current estimate for the design and construction of the MOX Facility was approximately $3.5 billion, which was $2.5 billion more than previously estimated. Although Russian liability issues and additions to project scope had a significant impact on the cost and schedule of the project, we found that weaknesses in contract management also contributed to the cost growth. As such, our report included specific recommendations to facilitate the successful completion of the project (*Status of the Mixed Oxide Fuel Fabrication Facility,* IG-0713, December 2005).

For example, in May 2001, we reported that the Department's Miamisburg Closure Project would not be completed under current cost and schedule requirements. A recent follow-up audit concluded that the Department is unlikely to achieve revised closure goals on the Miamisburg Closure Project. We found that the Department had not adequately planned for work scope uncertainties, failing to sufficiently quantify the risk or reserve funds to cover uncertainties such as employee pension costs and soil volumes that require remediation. We concluded that these problems provided valuable information which has application to the success of other Department closure projects. As a result, we made several recommendations designed to mitigate the potential impact of pension costs and various other uncertainties on the cost and schedule success of closure projects as well as specific recommendations related to the management of the Miamisburg Closure Project (*Follow-up Audit Report on the Department of Energy's Performance of the Miamisburg Closure Project,* IG-0721, March 2006).

While the Department has continued to make progress toward improving project management principles, our reviews over the past year continued to highlight weaknesses in this area. In addition, concerns related to project management within the Department were emphasized in a

recent review by the U.S. Army Corps of Engineers pertaining to the estimated project cost of the Waste Treatment and Immobilization Plant at the Hanford Site. Given the complexity and importance of the Department's numerous multi-million dollar projects and the results of recent Office of Inspector General reports, Project Management remains a significant management challenge.

Cyber Security

The Department spends approximately $2.5 billion a year on information technology. As a result of the importance of IT on its numerous projects, laboratories, and assets, along with the vast array of data that is produced, cyber security has become a crucial aspect of the Department's overall security posture. In 2005, the Department established a Cyber Security Improvement initiative, the goal of which was to identify improvements for cyber security controls within the Department. Over the past few years, the area of "Information Technology," which encompassed a broad range of IT contracts, programs, and security, had been classified as a management challenge. Recently, however, threats to the Government's information systems have risen to become a national security risk. As a result of these risks and in light of recent efforts to intrude into the Department's systems, we have categorized Cyber Security as a significant management challenge. While the area of Cyber Security focuses primarily on the security of the Department's information systems, other aspects of the Department's IT programs remain of vital importance. Areas of concern pertaining to these types of contracts and projects have been incorporated into existing management challenge areas, such as Contract Management and Project Management.

During FY 2006, the OIG conducted various reviews in this area that highlighted the need for improvements in the Department's overall cyber security program. As required by the *Federal Information Security Management Act* (FISMA), an OIG audit was conducted to determine whether the Department's unclassified cyber security program adequately protects data and information systems. During the last year, the Department launched a cyber security revitalization program and issued enhanced guidance designed to strengthen protective efforts. While these were positive steps, we continued to observe deficiencies that exposed the Department's critical systems to an increased risk of compromise. Specifically, we found that in spite of recent improvements in reporting methodologies and standards, the Department had not yet completed a complex-wide inventory of its information systems; many system certifications and accreditations had not been performed or were inadequate; contingency planning, vital to ensuring that systems could continue or resume operations in the event of an emergency or disaster, had not been completed for certain critical systems; and weaknesses existed in physical, logical access, and change controls designed to protect computer resources. We found that continuing cyber security weaknesses occurred, at least in part, because program and field elements did not always implement or properly execute existing Departmental and Federal cyber security requirements (*The Department's Unclassified Cyber Security Program—2006,* IG-0738, September 2006).

Further, during a June 2006 congressional hearing, Department officials publicly disclosed that an unclassified computer system was compromised at the NNSA Service Center in Albuquerque, New Mexico. As a result, a file containing the names and social security numbers of 1,502

NNSA employees was compromised. An OIG special inquiry concluded that the Department's handling of this matter was largely dysfunctional and that the operational and procedural breakdowns were caused by questionable managerial judgments; significant confusion by key decision makers as to lines of authority, responsibility, and accountability; poor internal communications; and insufficient follow-up on critically important issues and decisions.

To help address continuing weaknesses, the Department recently launched a revitalization effort designed to improve the management of its cyber security program to ensure that systems and data are secure. In addition, NNSA initiated a reprogramming of FY 2006 funds to combat pressing cyber security issues. Due to the evolving nature of cyber security threats, immediate as well as long-term action is necessary to ensure the protection of the Department's information systems.

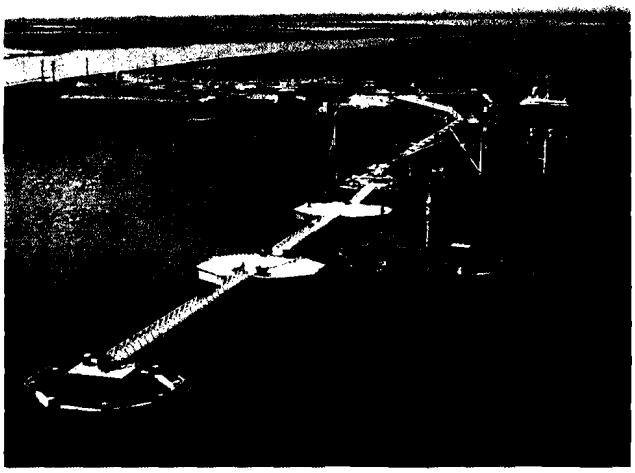
Energy Supply

Over the last several years, energy consumption in the United States and throughout the rest of the world has grown at an alarming rate. As a result of this growth as well as other world events, the United States' energy supply has come under stress and obstacles have arisen that create challenges for achieving a stable and reliable energy supply system, which is critical for consumers, the U.S. economy, and our national security. Although not directly responsible for energy costs or supply, the Department is in a unique position to help ensure that the Nation's energy needs are met through sound energy policy, research and development, and overall leadership. Providing leadership to ensure that the Nation's energy supply is reliable, affordable, and environmentally friendly represents a significant management challenge for the Department.

On August 8, 2005, the *Energy Policy Act of 2005* was signed into law at the Department's Sandia National Laboratory in Albuquerque, New Mexico. Intended to establish a comprehensive, long-term energy policy, the Act provides incentives for traditional energy production as well as newer, more efficient energy technologies. The first comprehensive energy legislation in over a decade, the Act focuses on areas such as energy efficient building construction, hybrid vehicles, clean coal, and other renewable and alternative energy sources. The passage of the *Energy Policy Act* provides the Department with the opportunity to aggressively implement key provisions of the legislation, while leading the effort to increase national investment in alternative fuels and clean energy technologies. The Department is challenged with the task of helping to modernize the national energy infrastructure; expand the Strategic Petroleum Reserve; invest in clean energy technologies such as hydropower, wind, solar, and cellulosic biomass; and promote conservation in our homes and businesses.

Another factor related to this challenge centers on the Department's ability to ensure a reliable energy supply, particularly to the military and emergency personnel, in the event of a natural disaster or international crisis. An integral part of this mission, the Strategic Petroleum Reserve is the largest stockpile of government-owned emergency crude oil in the world. Established in the aftermath of the 1973-74 oil embargo, the Reserve represents a powerful response option should a disruption in commercial oil supplies threaten the United States. In the late summer of 2005, Hurricanes Katrina and Rita devastated the Gulf Coast region, threatening the assets and reliability of the Strategic Petroleum Reserve.

In October 2005, the OIG conducted a review to identify the actions taken by the Department in response to Hurricanes Katrina and Rita and to assess whether these actions fulfilled the Department's Emergency Support Function-12 (ESF-12) obligations for energy restoration, as outlined in the Department of Homeland Security's National Response Plan. A resulting special report disclosed that the Department effectively met its obligations by taking appropriate actions to assist in the restoration of energy systems after Hurricanes Katrina and Rita. While the Department's response was effective, we identified specific actions that could enhance future ESF-12 missions. A recent follow-up review determined that since November 2005, the Department has made significant progress toward implementing our recommendations to enhance its ESF-12 mission capabilities. Specifically, the Department clarified communication processes during ESF-12 deployments, addressed responder equipment needs, and augmented staffing levels to meets mission requirements. While the Department took effective action to address the prior report's recommendations, we concluded that there are additional opportunities to improve the Department's efforts to identify emergency response assets in advance of events such as natural disasters. Departmental action to improve its inventory of emergency response assets will further strengthen the progress it has already made in implementing our earlier recommendations (*The Department of Energy's Response to Hurricanes Katrina and Rita,* IG-0707, October 2005; *Follow-up Review of the Department of Energy's Response to Hurricanes Katrina and Rita,* IG-0733, July 2006).



A barge docked at Phillips Terminal at the Strategic Petroleum Reserve

The energy issues facing the world today did not develop overnight and, therefore, will require both short-term and long-term solutions to address growing challenges. To combat challenges related to the modernization of the national energy infrastructure, in FY 2006 the Department announced the nomination of the first Assistant Secretary for Electricity Delivery and Energy Reliability. This position supports the Department's objective to improve research and development pertaining to electricity delivery infrastructure; lead national efforts to modernize the electric grid; enhance security and reliability of the energy infrastructure; mitigate the impact of, and facilitate recovery from, disruptions to the energy supply; and bring public awareness to the developments that will help ensure the reliable flow of energy to all Americans. Specifically, the Office of Electricity Delivery and Energy Reliability's strategic goal centers on the creation of a more flexible, more reliable, and higher capacity U.S. energy infrastructure. Given the importance of stabilizing the country's energy supply and the challenges that this monumental task creates, we have categorized Energy Supply as a significant management challenge facing the Department.

Watch List

The watch list consists of management issues that do not 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 significant positive outcomes. In addition, the watch list may include emerging issues that require Department action. Last year, our watch list addressed three areas: Energy Supply, Worker and Community Safety, and Human Capital Management. This year, Energy Supply has risen to become a management challenge. However, Financial Management and Reporting has been eliminated as a management challenge and placed on the watch list as a function that needs to be monitored closely by the Department.

Financial Management and Reporting

During FY 2005, Financial Management and Reporting was classified as a management challenge area as a result of problems associated with preparing accurate consolidated financial statements and providing adequate supporting documentation. Issues arose regarding accountability and monitoring obligations, reconciling payment information with the U.S. Treasury, and reconciling transactions to integrated contractor trial balances and subsidiary ledgers. These deficiencies were caused, in large part, by issues associated with the reorganization of the Department's accounting operations and circumstances surrounding the implementation of a new accounting system. The Department was unable to correct weaknesses and could not provide a number of supporting documents required for audit. As a result, a disclaimer of opinion was issued on the Department's FY 2005 consolidated financial statements.

In FY 2006, the Department's Office of Chief Financial Officer made substantial progress in correcting a number of financial controls and reporting weaknesses that lead to the disclaimer of opinion on the FY 2005 consolidated financial statements. The Department's accounting and reporting controls over obligations in FY 2006 were insufficient to prevent, detect, or correct errors in a timely manner. A recent audit on the Department's FY 2006 consolidated balance sheet resulted in a qualified opinion. Weaknesses were noted in the reporting of undelivered orders, cyber security controls over network and information systems, the performance measure reporting process. These weaknesses increased the risk that the Department's financial system and reported performance information may not be reliable (*The Department of Energy's Fiscal Year 2006 Consolidated Balance Sheet*, OAS-FS-07-02, November 2006).

Over the past year, the Department has made strides to correct inefficiencies associated with the new accounting system. As a result, Financial Management and Reporting has been downgraded

from a management challenge to the watch list. While the progress made by the Department in this area has been positive, additional work remains necessary. Therefore, Financial Management and Reporting remains a significant issue that requires the continued attention of senior management in the future.

Worker and Community Safety

Given the numerous large-scale facilities and dangerous materials that make up the Department, ensuring the safety of employees and the general public is of vital importance. Safety incidents may potentially destabilize, delay, and disrupt the Department's critical activities, and have intangible costs such as a negative public perception of the Department. Due to the inherently critical nature of these issues, the need for continued vigilance and improvement is essential. As a result, we have retained the area of Worker and Community Safety on our watch list.

Although steps that the Department took to address worker and community safety issues prompted us to remove it from the management challenges list in FY 2003, our work continues to identify safety issues that require the attention of senior management. For example, recent reports in this area have focused on hazardous materials such as beryllium and lead, which present a health and safety risk to Department employees as well as the public. The Department has a long history of beryllium use due to the element's broad application to many nuclear weapon and reactor operations. Exposure to beryllium, however, can cause beryllium sensitization or Chronic Beryllium Disease, which is an often debilitating, and sometimes fatal, lung condition. As a result, in January 2000, the Department established a Chronic Beryllium Disease Prevention Program, in large part to reduce worker exposure to beryllium at Department facilities.

A key component of this program is the Beryllium-Associated Worker Registry, designed to aggregate beryllium associated worker information, such as exposure and medical data from all Department sites. A recent audit was initiated to determine whether the Department had established, maintained, and effectively used the Registry to evaluate worker health effects associated with beryllium exposure. We found that the Registry was established as planned, but the Department had not maintained data completeness or accuracy, used the Registry to evaluate health effects of beryllium exposure, or used the Registry to examine the prevalence of beryllium disease, as initially envisioned. Additionally, the Department had not utilized the Registry to evaluate the health effects of beryllium exposure or the prevalence of beryllium disease. The results of our audit showed that implementation of the Registry program did not meet its own expectations nor was it as helpful as it could have been in achieving the worker safety objectives that were established by the Department. We offered several recommendations to assist efforts in restructuring the Registry and, as a consequence, to advance the state of worker health and safety within the Department as a whole (*Implementation of the Department of Energy's Beryllium-Associated Worker Registry*, IG-0726, April 2006).

Over the past year, the Department took several steps to address previously identified as well as emerging safety issues throughout the complex. The Office of Science has continued its efforts to improve safety measures at a number of its laboratories, identifying benchmarks for safety performance and incorporating performance measures into laboratory appraisal plans. In

addition, NNSA continued to improve upon its efforts within the Department's weapons complex by addressing Defense Nuclear Facilities Safety Board and other Department of Defense safety concerns. Given the inherent risks associated with the Department's many nuclear, scientific, and cleanup projects, the area of Worker and Community Safety is a continual process that requires invariable attention and improvement.

Human Capital Management

In the 2001 President's Management Agenda, the Office of Management and Budget recognized strategic management of human capital as one of the Government's "most glaring problems." The Agenda specifically outlined concerns that the Department's staff lacked adequate project and contract management skills required to oversee large projects. Subsequently, the Department undertook an effort to perform a critical skills gap analysis in order to review and evaluate specific critical skill needs.

Adding to existing concerns in the area of Human Capital Management, the Department has experienced a 27 percent reduction in the workforce since 1995. In addition, as of FY 2005, approximately 53 percent of the Department's workforce is eligible for retirement within the next five years. When combined with other factors such as a recent decline in the number of Department employees and an array of incentives to leave Federal service, the Department is faced with a difficult challenge to ensure that its workforce has the knowledge and skills that are necessary to fulfill the agency's various missions.

The Department has developed a framework to address these issues in the form of a comprehensive human capital management strategy. As part of the Department's Human Capital Management Strategic Plan, during FY 2006, the Department continued its efforts to reshape its workforce through increased emphasis on performance and accountability. As a result, the Department completed reorganizations in several program offices, including the Office of Science and the Office of Environmental Management, in order to address issues of performance excellence and leadership continuity. While these are positive steps, the area of Human Capital Management is an ongoing challenge that will require the attention of Department management in the years to come.

Challenge Areas and Significant Issues Reported by Various Groups

OIG Management Challenge	GAO Challenge Area[1]	Significant Issues Identified by the Department[2]
Environmental Cleanup	Cleanup of Radioactive & Hazardous Waste	Environmental Cleanup
		Nuclear Waste Disposal
Safeguards and Security	Security Threats and Problems	Security
Stockpile Stewardship	Nuclear Weapons Stockpile	Stockpile Stewardship
Contract Management	Contract Management	Oversight of Contractors
		Acquisition Process Management
Project Management		Project Management
Cyber Security		Unclassified Cyber Security
Energy Supply	Leadership in Meeting Nation's Energy Needs	
	Revitalize Infrastructure	
OIG Watch List		
Financial Management and Reporting		
Worker and Community Safety		Safety and Health
Human Capital Management		Human Capital Management

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

[2]The Department's self-identified "Management Challenges and Significant Issues" according to *U.S. Department of Energy Performance and Accountability Report*, FY 2006 (November 2006).

Relevant Reports Issued in Fiscal Year 2006

Safeguards and Security

- Inspection Report on *Concerns with Security Barriers at the Y-12 National Security Complex* (DOE/IG-0741, September 26, 2006).
- Inspection Report on *Destruction of Classified Hard Drives at Sandia National Laboratory-New Mexico* (IG-0735, August 3, 2006).
- Inspection Report on *Internal Controls for Excessing and Surplusing Unclassified Computers at Los Alamos National Laboratory* (IG-0734, July 26, 2006).
- Inspection Report on *The Human Reliability Program at Lawrence Livermore National Laboratory* (IG-0732, June 30, 2006).
- Inspection Report on *Review of the Protective Force Radio Communication System at Sandia National Laboratory-New Mexico (U)* (IG-0731, June 27, 2006).
- Audit Report on *The Department's Management of Non-Nuclear High Explosives* (IG-0730, June 26, 2006).
- Inspection Report on *Badge Retrieval and Security Clearance Termination at Sandia National Laboratory- New Mexico* (IG-0724, April 18, 2006).
- Inspection Report on *The Department of Energy's Review of Export License Applications for China* (IG-0723, April 5, 2006).
- Inspection Report on *Internal Controls Over Sensitive Property in the Office of Intelligence* (IG-0722, March 13, 2006).
- Audit Report on *Nuclear Detection Devices* (IG-0720, February 28, 2006).
- Inspection Report on *Electronic Recording of Telephone and Radio Conversations by Los Alamos National Laboratory Protective Force Management* (IG-0717, January 24, 2006).
- Inspection Report on *Security Clearance Terminations and Badge Retrieval at the Lawrence Livermore National Laboratory* (IG-0716, January 19, 2006).
- Inspection Report on *Acquisition of Protective Force Weapons by Sandia National Laboratory, New Mexico* (IG-0715, January 12, 2006).
- Special Report on *The National Nuclear Security Administration's Implementation of the 2003 Design Basis Threat* (IG-0705, October 7, 2005).

Environmental Cleanup

- Audit Report on *Well Decommissioning Activities at the Hanford Site* (IG-0670, January 3, 2005).
- Audit Report on *Follow-up on the Management of Plutonium-239 Sealed Sources Recovery Activities* (OAS-M-06-09, September 12, 2006).
- Audit Report on *The Office of Civilian Radioactive Waste Management's Corrective Action Program* (IG-0736, August 16, 2006).
- Audit Report on *Management Controls over Cesium and Strontium Capsule Disposition at the Hanford Site* (OAS-M-06-06, August 4, 2006).

- Audit Report on *Management of Spent Nuclear Fuel at the Savannah River Site* (IG-0727, May 12, 2006).
- Audit Report on *Management Controls over Assessing Natural Resource Damage at Rocky Flats* (OAS-M-06-02, November 30, 2005).
- Audit Report on *Management Controls over the Hanford Site Transuranic Mixed Tank Waste* (OAS-O-06-01, November 30, 2005).
- Audit Report on *Accelerated Tank Waste Retrieval Activities at the Hanford Site* (IG-0706, October 17, 2006).

Stockpile Stewardship

- Audit Report on *The National Nuclear Security Administration's B61 Spin Rocket Motor Project* (IG-0740, September 26, 2006).
- Audit Report on *W76 Life Extension Project* (IG-0729, May 25, 2006).

Contract Management

- Audit Report on Performance-*Based Contract Incentives at the Hanford Site* (IG-0739, September 20, 2006).
- Audit Report on *Management Controls over Small Business Opportunities at Lawrence Livermore National Laboratory* (OAS-M-06-08, August 24, 2006).
- Audit Report on *Management Controls over Performance Fees in the Idaho National Laboratory Contract* (OAS-M-06-07, August 24, 2006).
- Audit Report on *Information Technology Support Services at the Department of Energy's Operating Contractors* (IG-0725, April 19, 2006).
- Inspections Report on *Protective Force Contracts at the Oak Ridge Reservation* (IG-0719, February 2, 2006).
- Audit Report on *Demolition and Replacement of Hanford's Radiological Calibration Laboratory* (IG-0711, December 8, 2006).
- Audit Report on *Management of Facility Contractors Assigned to the Washington, D.C. Area* (IG-0710, November 21, 2005).

Project Management

- Audit Report on *The Department's Utilization of Fleet Vehicles* (IG-0728, May 17, 2006).
- Audit Report on *Follow-up Audit Report on the Department of Energy's Performance of the Miamisburg Closure Project* (IG-0721, March 14, 2006).
- Audits Report on *Management of the Department's Desktop Computer Software Enterprise License Agreement* (IG-0718, January 1, 2006).
- Audit Report on *Status of the Mixed Oxide Fuel Fabrication Facility* (IG-0713, December 21, 2005).
- Audit Report on *Management of the Department's Isotope Program* (IG-0709, November 17, 2005).

Cyber Security

- Audit Report on *Management Controls over the Federal Energy Regulatory Commission's Unclassified Cyber Security Program-2006* (OAS-M-06-10, September 25, 2006).
- Audit Report on *The Department's Unclassified Cyber Security Program-2006* (IG-0738, September 18, 2006).
- Evaluation Report on *The Federal Energy Regulatory Commission's Unclassified Cyber Security Program – 2005* (IG-0704, October 6, 2005).
- Memorandum to the Secretary on *Summary: Special Inquiry Report Relating to the Department of Energy's Response to a Compromise of Personnel Data* (Special Inquiry Memorandum, July 19, 2006).

Energy Supply

- Special Report on *Follow-Up Review of the Department of Energy's Response to Hurricanes Katrina and Rita* (IG-0733, July 12, 2006).
- Special Report on The *Department of Energy's Response to Hurricanes Katrina and Rita* (IG-0707, November 9, 2005).

Financial Management and Reporting

- Memorandum on *Report on the Department of Energy's Fiscal Year 2005 Consolidated Financial Statements* (OAS-FS-0601, November 14, 2005).

Worker and Community Safety

- Audit Report on Audit *Report Beryllium Controls at Oak Ridge National Laboratory* (IG-0737, September 6, 2006).
- Inspection Report on *Concerns Regarding Lead Contamination and Radiological Controls at the Nevada Test Site* (INS-O-06-02, May 17, 2006).
- Audit Report on *Implementation of the Department of Energy's Beryllium-Associated Worker Registry* (IG-0726, April 20, 2006).

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